

Research Article

SOCIODEMOGRAPHIC FACTORS INFLUENCE KNOWLEDGE, ATTITUDE AND PRACTICE OF PREGNANT WOMEN TOWARDS GESTATIONAL DIABETES IN KOSTI GYNAECOLOGY CENTERS, 2021-2022

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ABSTRACT

Background: Abnormal glucose tolerance that develops or is first recognized during pregnancy is known as gestational diabetes mellitus (GDM). **Objectives:** This study aimed to identify sociodemographic factors influence knowledge, attitude and practice of pregnant women towards gestational diabetes in Kosti Gynecology centers, 2021-2022. **Methodology:** This was a cross sectional study health facility based. The study was conducted in Kosti gynecology centers, 2022. The study population was pregnant women were in Kosti gynecology centers recruited for the study. The data was collected through predesigned structured interviewed questionnaire. The questionnaire includes variables of Knowledge about GDM. **Results:** The study showed that the age 15-25 years was significantly having high good knowledge and practice and positive attitude 61 (100%), $p=0.000$. Women being illiterate and having primary/ basic level had significantly high good knowledge, positive attitude and good practice about GDM 13 (100%), 34 (100%) respectively, $p=0.000$. Women whose monthly income less than 10000 SDG significantly having high good knowledge, positive attitude and good practice about GDM 47 (100%), $p=0.000$. Women who having family size less than 4 members was significantly having high good knowledge 91.9%, high positive attitude 88.4% and high good practice (100%), $p=0.000$. The overall mean knowledge of pregnant women regarding GDM was $(14.3.8 \pm 1.7)$, the overall mean attitude was (12.4 ± 1.4) and the overall practice was (9.8 ± 1.3) . There was significance differences between overall mean knowledge, attitude and practice, $p=0.000$. There was significant positive correlation between overall knowledge and attitude ($r=0.780$, $p=0.000$), and correlation between overall knowledge and practice ($r=0.770$, $p=0.000$). Also correlation was found between overall practice and attitude ($r=0.978$, $p=0.000$). **Conclusion:** It can be concluded that age, education level, family structure, and monthly income significantly affect pregnant women's knowledge, attitudes, and practices toward GDM. There was a positive correlation between women's knowledge, attitudes, and practices regarding GDM. The findings of this study will assist health care providers in formulating appropriate methods to successfully implement GDM program activities and improve pregnant women's knowledge, attitudes, and practices toward GDM, taking into account the influence of sociodemographic characteristics.

Keywords: Knowledge, Attitude, Sociodemographic, Practice, pregnant women, Gestational diabetes, Kosti, 2022.

INTRODUCTION

Abnormal glucose tolerance that develops or is first observed during pregnancy is known as gestational diabetes mellitus (GDM) (1). (1) Although the exact diagnostic definition of GDM varies somewhat between organizations and countries, GDM is usually recognized at 24-28 weeks gestation as elevated blood glucose levels and/or abnormal values on an oral glucose tolerance test (OGTT). (1) The standard prevalence of GDM is 14% worldwide, varying by region from 7.1% in North America to 27.6% in the Middle East and North Africa (2), with a pooled prevalence of 10.9% in 24 European countries (3). (3) The pooled prevalence of GDM in mainland China was reported to be 14.8%, but as high as 26.7% in elderly pregnant women. (4) Furthermore, GDM prevalence varied by region in China, with the highest rate of 24.2% in Tongzhou, Beijing. (5) Risk factors for GDM include maternal advanced age, overweight/obesity, family history of type 2 diabetes mellitus (T2DM), hypertensive disorders, perinatal death, maternal obesity, and previous (first) pregnancy without GDM complicated by a fetal giant (4,6,7). (4,6,7) GDM is associated with adverse outcomes such as maternal preeclampsia/eclampsia, maternal cardiovascular disease, maternal T2DM, fetal gigantism, preterm delivery, cesarean section, birth trauma, infants born large for gestational age, infant respiratory

distress syndrome, neonatal cardiac malformations, and neonatal intensive care unit admission. (6,8,9) GDM has also been associated with increased long-term risk of obesity, T2DM, and cardiovascular disease in children. (6) Therefore, timely diagnosis and treatment of GDM is important; management of GDM requires a multidisciplinary approach and includes both nonpharmacologic and pharmacologic interventions. (10) The majority of patients with GDM can be managed by daily self-monitoring of fasting and postprandial blood glucose levels, improved diet and nutritional status monitoring, exercise and physical activity, maternal weight gain management, and other lifestyle modifications, (11) and programs have been established in China to facilitate implementation of these interventions. (12,13). (12,13) In addition, up to 30% of patients with GDM require medical therapy with insulin or oral hypoglycemic agents such as metformin or glibenclamide. (11) Knowledge, Attitudes, and Practices (KAP) surveys provide useful information on baseline knowledge, attitudes, beliefs, misconceptions, and behaviors on health-related topics. (14) In addition, data from the KAP survey can facilitate the development and implementation of education/training programs to overcome problems and barriers that impede the management of patients with health problems. (14) This study aimed to identify sociodemographic factors that influence pregnant women's knowledge, attitudes, and practices toward gestational diabetes in Kosti OB/GYN center in 2021-2022.

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MATERIALS AND METHODS

Study Design: Cross sectional study health facility based.

Study area: The study was conducted in Kosti gynecology centers, 2022.

Study population: Pregnant women are in Kosti gynecology centers. Sample size: The sample size was calculated according to the following formula;

$$n = \frac{Z^2 * P * Q}{d^2}$$

Whereas;

n= the desired sample size required.

Z= Normal distribution

P= Prevalence of GDM= estimated as 10% from previous literature.

Q= 1-P

d=marginal errors

n=138

Data collection:

The data was collected through predesigned structured interviewed questionnaire. The questionnaire includes sociodemographic variables and knowledge, attitude and practice about GDM.

Measurements score: For knowledge score, above > 75% was good; score between 50-74% was moderate and score less than 50% was poor, and for practice, score above > 75% was good; score between 50-74% was moderate and score less than 50% was poor. While for attitude score between above 50% is positive attitude and less than 50% is negative attitude.

Data analysis:

Data analysis was done using SPSS (Statistical Package for Social Science) version 22.0. Descriptive and analytical statistics was used where appropriate.

Results:

Figure 1 shows that most of women 44.2% were aged between 15-25 years, 35.5% aged between 26-36 years and 20.3% aged more than 36 years. Figure 2 indicates that most of women 37.7% education level was intermediate/secondary, 25.4% was University, and 24.6% was primary/basic education while only 2.9% was post-graduate. Half of the women 50% had monthly income between 10000-20000 SDG, figure 3.

More than two-thirds of the women 62.3% had less than 4 members, figure 4. Table 1 indicates that there was association between age and overall knowledge, attitude and practice of women regarding GDM, p=.000. The age 15-25 years was significantly having high good knowledge and practice and positive attitude 61 (100%).

Table 2 illustrates that there was association between education level and overall knowledge, attitude and practice, p=.000.

Women being illiterate and having primary/ basic level had significantly high good knowledge, positive attitude and good practice about GDM 13 (00%), 34 (100%) respectively.

Table 3 shows that there was association between monthly income and overall knowledge, attitude and practice, p=.000. Women whose monthly income less than 10000 SDG significantly having high good knowledge, positive attitude and good practice about GDM 47 (100%).

Table 4 shows that there was association between family size and overall knowledge, attitude and practice, p=.000. Women who having family size less than 4 members was significantly having high good knowledge 91.9%, high positive attitude 88.4% and high good practice (100%).

Table 5 shows that the overall mean knowledge of pregnant women regarding GDM was (14.3.8 ±1.7), the overall mean attitude was (12.4±.4) and the overall practice was (9.8 ±.3). There was significance differences between overall mean knowledge, attitude and practice, p=.000.

Table 6 indicates that there was significant positive correlation between overall knowledge and attitude (r=.780, p=.000), and correlation between overall knowledge and practice (r=.770, p=.000). Also correlation was found between overall practice and attitude (r=.978, p=.000).

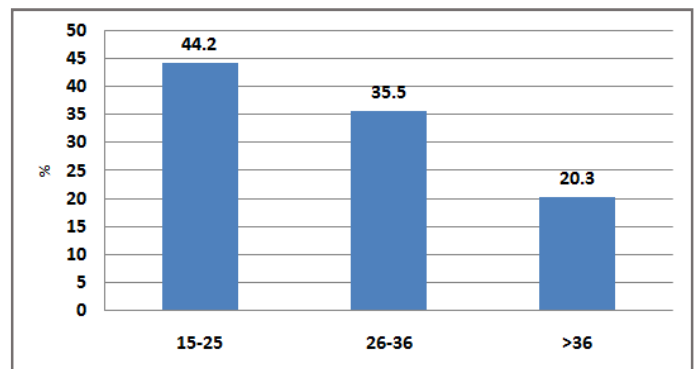


Fig.1. Distribution of pregnant women according to age group (n=138)

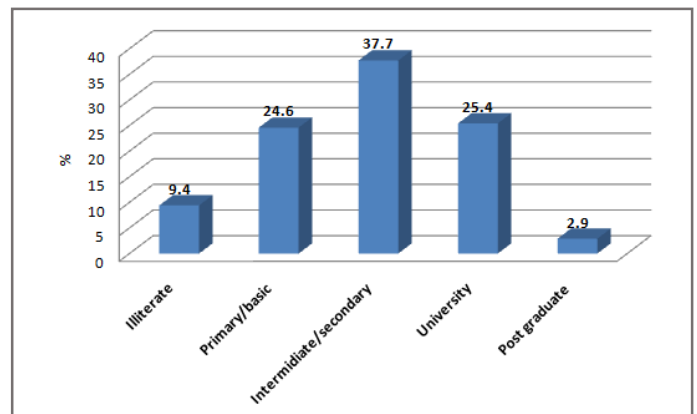


Fig.2. Distribution of pregnant women according to education level (n=138)

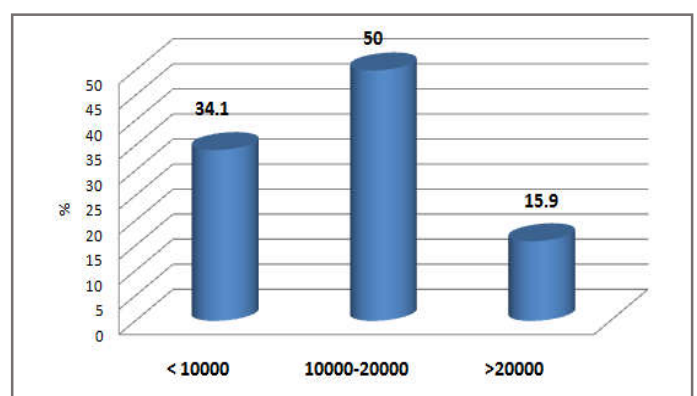


Fig.3. Distribution of pregnant women according to monthly income (n=138)

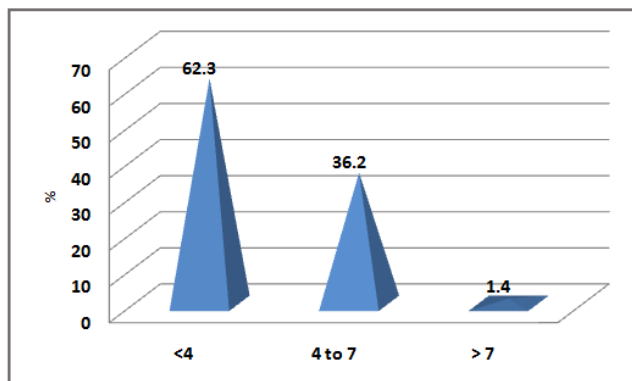


Fig.4. Distribution of pregnant women according to family size (n=138)

Table 1. Association between age and overall knowledge, attitude and practice

		Age			Total	P-value
		15-25	26-36	> 36		
Overall Knowledge	Good	n 61	18	0	79	.000*
		% 100.0%	36.7%	.0%	57.2%	
	Poor	n 0	31	28	59	
		% .0%	63.3%	100.0%	42.8%	
	Total	n 61	49	28	138	
		% 100.0%	100.0%	100.0%	100.0%	
Overall attitude	Positive	n 61	15	0	76	.000*
		% 100.0%	30.6%	.0%	55.1%	
	Negative	n 0	34	28	62	
		% .0%	69.4%	100.0%	44.9%	
	Total	n 61	49	28	138	
		% 100.0%	100.0%	100.0%	100.0%	
Overall practice	Good	n 61	26	0	87	.000*
		% 100.0%	53.1%	.0%	63.0%	
	Poor	n 0	23	28	51	
		% .0%	46.9%	100.0%	37.0%	
	Total	n 61	49	28	138	
		% 100.0%	100.0%	100.0%	100.0%	

*P-value considered significant at less than 0.05 levels

Table 2. Association between education level and overall knowledge, attitude and practice

		Education level					Total	P-value
		Illiterate	Primary/ basic	Intermediate/ secondary	University	Post graduate		
Overall Knowledge	Good	n 13	34	32	0	0	79	.000*
		% 100.0%	100.0%	61.5%	.0%	.0%	57.2%	
	Poor	n 0	0	20	35	4	59	
		% .0%	.0%	38.5%	100.0%	100.0%	42.8%	
	Total	n 13	34	52	35	4	138	
		% 100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Overall attitude	Positive	n 13	34	29	0	0	76	.000*
		% 100.0%	100.0%	55.8%	.0%	.0%	55.1%	
	Negative	n 0	0	23	35	4	62	
		% .0%	.0%	44.2%	100.0%	100.0%	44.9%	
	Total	n 13	34	52	35	4	138	
		% 100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Overall practice	Good	n 13	34	40	0	0	87	.000*
		% 100.0%	100.0%	76.9%	.0%	.0%	63.0%	
	Poor	n 0	0	12	35	4	51	
		% .0%	.0%	23.1%	100.0%	100.0%	37.0%	
	Total	n 13	34	52	35	4	138	
		% 100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

*P-value considered significant at less than 0.05 levels

Table 3. Association between monthly income and overall knowledge, attitude and practice

		Monthly income (SDG)			Total	P-value	
		< 10000	10000-20000	>20000			
Overall Knowledge	Good	n	47	32	0	79	.000*
		%	100.0%	46.4%	.0%	57.2%	
	Poor	n	0	37	22	59	
		%	.0%	53.6%	100.0%	42.8%	
	Total	n	47	69	22	138	
		%	100.0%	100.0%	100.0%	100.0%	
Overall attitude	Positive	n	47	29	0	76	.000*
		%	100.0%	42.0%	.0%	55.1%	
	Negative	n	0	40	22	62	
		%	.0%	58.0%	100.0%	44.9%	
	Total	n	47	69	22	138	
		%	100.0%	100.0%	100.0%	100.0%	
Overall practice	Good	n	47	40	0	87	.000*
		%	100.0%	58.0%	.0%	63.0%	
	Poor	n	0	29	22	51	
		%	.0%	42.0%	100.0%	37.0%	
	Total	n	47	69	22	138	
		%	100.0%	100.0%	100.0%	100.0%	

*P-value considered significant at less than 0.05 levels

Table 4. Association between family size and overall knowledge, attitude and practice

		Family size			Total	P-value	
		< 4	4-7	>7			
Overall Knowledge	Good	n	79	0	0	79	.000*
		%	91.9%	.0%	.0%	57.2%	
	Poor	n	7	50	2	59	
		%	8.1%	100.0%	100.0%	42.8%	
	Total	n	86	50	2	138	
		%	100.0%	100.0%	100.0%	100.0%	
Overall attitude	Positive	n	76	0	0	76	.000*
		%	88.4%	.0%	.0%	55.1%	
	Negative	n	10	50	2	62	
		%	11.6%	100.0%	100.0%	44.9%	
	Total	n	86	50	2	138	
		%	100.0%	100.0%	100.0%	100.0%	
Overall practice	Good	n	86	1	0	87	.000*
		%	100.0%	2.0%	.0%	63.0%	
	Poor	n	0	49	2	51	
		%	.0%	98.0%	100.0%	37.0%	
	Total	n	86	50	2	138	
		%	100.0%	100.0%	100.0%	100.0%	

*P-value considered significant at less than 0.05 levels

Table 5. Overall mean (mean± SE) knowledge, attitude and practice

Overall	N	Mean ± SE	P-value
Knowledge	138	14.3.8 ±1.7	.000*
Attitude	138	12.4±.4	.000*
Practice	138	9.8 ±.3	.000*

*P-value considered significant at less than 0.05 levels

Table 6. Association between family size and overall knowledge, attitude and practice

Overall		Knowledge	Attitude	Practice
Knowledge	Pearson Correlation	1	.780(**)	.770(**)
	Sig. (2-tailed)		.000	.000
	N	138	138	138
Attitude	Pearson Correlation	.780(**)	1	.978(**)
	Sig. (2-tailed)	.000		.000
	N	138	138	138
Practice	Pearson Correlation	.770(**)	.978(**)	1
	Sig. (2-tailed)	.000	.000	
	N	138	138	138

** Correlation is significant at the 0.01 level (2-tailed).

DISCUSSION:

The purpose of this study is to determine the sociodemographic factors that influence pregnant women's knowledge, attitudes, and practices toward gestational diabetes in Kosti OB/GYN Center in 2021-2022. The results of this study showed that age, education level, family structure, and monthly income significantly affect pregnant women's knowledge, attitudes, and practices toward gestational diabetes; those aged 15-25 had higher knowledge, practices, and attitudes, 61 (100%). This finding contradicts the rationale of other authors who stated that the motivation for higher knowledge scores with age could be explained by increased awareness with age or by being more open and attentive to learning based on the increased health risks of pregnant women with age This was not the case. As for the increase in education, it can be explained by the fact that higher education improves study skills and knowledge about access to health care. In addition, business life may increase opportunities for education and access to health information. (15) A study of GDM female participants reported that age (25-29 years) and higher education affected GDM knowledge levels (16). Women who were illiterate and those with primary/basic education levels had significantly higher values of good knowledge, positive attitudes, and good habits regarding GDM at 13 (00%) and 34 (100%), respectively. On the other hand, in a study by Alharthi et al. (17), assessing GDM knowledge among non-GDM Saudi women, very few women (15.9%) knew about the diagnosis of GDM; when factors affecting GDM knowledge were assessed, those with a bachelor's degree, multiple pregnancies and a history of GDM Women with a bachelor's degree, multiple pregnancies, and a history of GDM were found to have higher knowledge of GDM (67.7%) than other women. Women living in central areas also showed higher knowledge than women living in rural areas (17). Women with monthly incomes of less than 10000 SDG had higher knowledge, positive attitudes, and good practices regarding GDM. (20) Women with monthly incomes less than 10000 SDG had significantly higher knowledge, positive attitudes and good habits regarding GDM. (20) Women with families of 4 or less had 91.9% higher knowledge, 88.4% higher positive attitudes, and 100% higher good practices. This may be due to the small number of family members and therefore less opportunity for parents to educate and work with them. The overall mean knowledge of pregnant women about GDM was (14.3.8 ± 1.7), the overall mean attitude was (12.4 ± 4), and the overall mean practice was (9.8 ± 3). There was a significant difference between overall mean knowledge, attitude, and practice (p=.000). There was a significant positive correlation between overall knowledge and attitude (r=.780, p=.000) and overall knowledge and practice (r=.770, p=.000). A correlation was also found between overall practice and attitude (r=.978, p=.000). A similar study showed a significant positive

correlation between total knowledge scores and total attitude scores on gestational diabetes among pregnant women (18). (18) This means that the more knowledgeable one is, the more positive one's attitude is. This finding was consistent with the findings reported by Said and Aly (19) and Noronha, Karkada, Prabhu *et al.*, (20), who concluded that there was a positive correlation between women's knowledge and attitudes toward gestational diabetes. Furthermore, the present study found a positive correlation between the overall attitude of pregnant women and their overall self-care practice scores. This reflects that improved attitudes led to improved practices. This may be due to the general influence of women's attitudes regarding gestational diabetes. In the inline survey, the mean scores for knowledge, attitude, and practice were 11.55 ± 3.04, 34.23 ± 4.06, and 10.7 ± 2.0, respectively. The score was 87. Knowledge scores were positively correlated with attitude scores (r=0.318, P<0.001) and practice scores (r=0.351, P<0.001); attitude and practice scores were also positively correlated (r=0.209, P<0.001). In multivariate analysis, higher knowledge score (odds ratio [OR], 1.138; 95% confidence interval [95% CI], 1.042-1.244; P=0.004) and higher attitude score (OR, 1.137; 95% CI, 1.060-1.219; P<0.001) were associated with good practice (i.e., practice score ≥14 points) independently associated with good practice. (21)

CONCLUSION

It can be concluded that age, education level, family structure, and monthly income significantly affect pregnant women's knowledge, attitudes, and practices toward GDM. There was a positive correlation between women's knowledge, attitudes, and practices regarding GDM. The findings of this study will assist health care providers in formulating appropriate methods to successfully implement GDM program activities and improve pregnant women's knowledge, attitudes, and practices toward GDM, taking into account the influence of sociodemographic characteristics.

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