ASSESSMENT OF KNOWLEDGE REGARDING GESTATIONAL DIABETES MELLITUS AMONG PREGNANT WOMEN IN MATERNITY TEACHING HOSPITAL, SULAIMANI CITY

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ABSTRACT

Background

Gestational diabetes has risen in recent years. This condition may lead to extremely negative outcomes for both mother and baby. Knowledge is one of the important aspects of enhancing women's level of education regarding this condition.

Objectives

The main aim of this study was to assess pregnant women's knowledge regarding gestational diabetes mellitus.

Materials and Methods

Quantitative descriptive design (non-probability sample). The method was used to rectitude 140 pregnant women diagnosed with gestational diabetes mellitus and attending the Center of Diabetes at Maternity Teaching Hospital in Sulaimani.

Results

In this study, 140 pregnant women were enrolled with an age range between 21 and 40 years old, with a mean of 32.2 ± 5.7 years, and less than half were between ages 35-40 years. Overall, more than half of the pregnant women (59.3%) had fair knowledge regarding gestational diabetes mellitus, whereas only 4.3 % had good knowledge.

Conclusions

The findings revealed a lack of knowledge in pregnant women regarding gestational diabetes mellitus. Nurses must play an important role in health education about gestational diabetes mellitus in pregnant women and minimise the risk of complications.

Keywords: *Assessment, Pregnant women, Knowledge, Gestational Diabetes Mellitus, Sulaimani Maternity Teaching Hospital.*

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INTRODUCTION

Gestational diabetes is a major medical problem in this 21st century; a large part of the population lives with diabetes across the globe. In 2019, an estimated 463 million people had diabetes, which is expected to rise to 578 million by 2030 and 700 million by 2045. High blood glucose levels are expected to influence 15.8% (20.4 million) of live births during pregnancy in 2019, including 83.6% due to gestational diabetes mellitus (GDM). However, 7.9% were the posterior effect of recognised diabetes before pregnancy, and 8.5 percent due to type 1 and type 2 diabetes initially identified during pregnancy [1].

Gestational diabetes mellitus (GDM) is a glucose intolerance that is first diagnosed during pregnancy. The diagnosis of gestational diabetes mellitus occurs during the second and third trimesters of pregnancy. GDM has become a worldwide public health issue, although it is symptomatic in its specialised medical course, and oral glucose tolerance testing is recommended for GDM screening during the 24th to 28th week of pregnancy; however, for high-risk pregnancies, screening should be done sooner during pregnancy [2].

Gestational diabetes mellitus (GDM) is a type of diabetes that occurs during the second and third trimesters of pregnancy because of insulin resistance arising from the production of hormones through the placenta. Several factors have influenced the development of GDM. The most common risk factors include personal and family history of GDM, macrocosmic infant history, unexplained stillbirth, and family history of type 2 diabetes. Among pregnancies, weight gain is considered to be one of the most common modifiable risk factors for GDM. An older mother and cigarettes are also risk factors for GDM [3].

To detect and diagnose GD, a single-stage oral glucose tolerance test (2-hour OGTT with 75 g glucose) was recommended by WHO and the International Association for Diabetes and Pregnancy Research in 2013. A clinical diagnosis is crucial to avoid complications [4,5]. Knowledge of gestational diabetes mellitus makes it possible for patients and people at risk to undertake early intervention and prevent numerous complications by making simple lifestyle changes that include increased physical activity and control of nutrition [6]. Thus, pregnant women must be familiar with GDM and lifestyle interventions that manage or reduce GDM and future T2DM; such education will enhance clinical knowledge and outcomes [7]. Knowledge of GDM in pregnant women will result in adopting a healthy lifestyle, a better model for seeking care, better health care, and therefore prevention and early diagnosis of the disease. Therefore, this study aimed to determine the knowledge levels of pregnant women with gestational diabetes mellitus visiting the Maternity Teaching Hospital.

PATIENTS AND METHODS

Design of the study

Quantitative descriptive design

Administrative Arrangements

The scientific ethics committee approved the proposal of the current study at the College of Medicine/ University of Sulaimani.

Sample of the study

The non-probability (purposive) sample technique was used on 140 participants who were diagnosed with gestational diabetes mellitus and had attended the Maternity Teaching Hospital in Sulaimani City.

Objectives of the study

This research aimed to assess knowledge levels and the relationship between socio-demographic data and knowledge levels of pregnant women with GDM in Sulaimani Maternity Teaching Hospital.

Inclusion criteria

Each gestational diabetes woman who attended the Maternity Teaching Hospital.

Exclusion criteria

Pregnant with gestational diabetes who refused participation in the study.

The Study Instrument

A structured Questionnaire is prepared by using a literature review, personal experience, and expert discussion. The questionnaire is organised in three sections.

Section 1: Consists of socio-demographic data, which include age, education, occupation, residency, and economic status.

Section 2: Assessment of women's knowledge regarding GDM as definition, risk factors, signs and symptoms, diagnostic tests needed for GDM, therapeutic

management regimen, and effect of GDM on pregnancy, including maternal/neonatal complications.

Scoring system: There is only one correct answer related to her knowledge about gestational diabetes.

The correct answer ="1".

while the incorrect= "zero".

The total score was 16 questions; the answers score was rated as poor, fair and reasonable knowledge according to its total score and classified into:

Poor knowledge for women had less than six correct answers,

Fair knowledge for women had 6-11 correct answers

Good knowledge for women had more than 11 correct answers

Section 3: Association between socio-demographic and knowledge of gestational diabetes women, such as (age, education, occupation, residency, economic status, and level of knowledge of pregnant women).

Validity of the study tool

The tool's validity was determined by a panel of (13) experts in different scientific domains (Gynaecology and Obstetrics, Diabetes Specialist, Family and Community Medicine, and Maternal Neonate Nursing) to examine the questionnaire elements' clarity, relevance, and appropriateness. Experts were provided the instrument by their recommendation about the possibility of the items included in the form.

Pilot Study

A pilot study was performed on (20) pregnant women diagnosed with gestational diabetes who attended Maternity Teaching Hospital in Sulaimani City from (1st November 2021 to 1st December 2021) and included in the study sample.

Reliability of the questionnaire

Reliability was achieved through the application of internal consistency reliability (split half), conducted by 20 pregnant women who received a diagnosis of gestational diabetes collected for such a reliability estimate. The person correlation coefficient (r) was used to determine the reliability of the study instrument. The outcome of this correlation coefficient was (r = 0.78).

Methods of data collection

The data was collected using the adopted and constructed tool, and the interview technique was used. The data collection process was based on the period (1st November 2021 to 30th September 2022). Interviewing using the questionnaire for demographic data and knowledge took about 15 minutes for each patient after obtaining informed consent.

Data analysis

Collected data were analyzed using the statistical package for social sciences (SPSS, version 24), and a p-value of ≤ 0.05 was considered statistically significant. The chi-square, cross-tabulation, and Fisher exact tests were used for data analysis.

RESULTS

Table 1 showed that 40.4% of participants were between 35 and 40. 35.7% of them graduated from primary school, 84.3% were homemakers. Nearly 74.3% live in urban areas. 55.7% needed more.

Table 2 shows the level of knowledge of a total of 140 pregnant women respondents. Only 4.3% had good knowledge about GDM, 59.3 % had fair knowledge, and 36.4 % had poor knowledge about GDM.

Table 3 shows the association between the socio-demographic variable of the study sample and the levels of knowledge of pregnant women regarding GDM; it detected a highly significant association between occupation, educational level and level of knowledge of pregnant women at p-value < 0.5.

Table 1. Distribution of gestational diabetic women according to a socio-demographic variable (N = 140).

Variable	Groups	Frequency %	P value
Age (years)			
	21-27	33 (23.6)	
	28-34	51 (36.4)	0.56
Mean ± SD	35-40	56 (40.4)	
		32.2 ± 5.7	0.64
Education level	Illiterate	9 (6.4)	
	Primary	50 (35.7)	
	Secondary	43 (30.7)	0.01
	Institute	16 (11.4)	
	University and postgraduate	22 (15.7)	
Occupation	Governmental employee	21 (15.0)	
	Non-governmental	1 (0.7)	0.48
	employee	118 (84.3)	
	Housewife		
Economic status	Sufficient	53 (37.9)	
	Burly sufficient	78 (55.7)	0.47
	Non-sufficient	9 (6.4)	
Residency	Urban	104 (74.3)	
	Rural	36 (25.7)	0.25

Table 2. Distribution of pregnant women according to their total score level of knowledge regarding gestational diabetes mellitus.

Level of knowledge categories	Frequency (%)	P-value
Poor (< 6)	51 (36.4)	
Fair (6 - 11)	83 (59.3)	0.87
Good (> 11)	3 (4.3)	

Table 3. Association between the level of knowledge of pregnant women regarding gestational diabetes mellitus and socio-demographic variable

Variable	Levels of knowledge						
	Poor		Fair		Good		Total
	Frequency	%	Frequency	%	Frequency	%	Frequency (%)
Age (years)							
21-27	11	26.3	21	25.3	1	16.7	33(23.6)
28-34	17	33.3	29	34.9	5	83.3	51(36.4)
35-40	23	45.1	33	39.8	0	0	56 (40)
P. value 0.14	**non-significant**						
Educational level							
Illiterate	6	11.8	3	3.6	0	0	9 (6.4)
Primary	18	35.3	32	100	0	0	50 (35.7)
Secondary	15	29.4	28	70.6	0	0	43 (30.7)
Institute	7	13.7	6	69.6	3	50	16 (11.4)
University- postgraduate	5	9.8	14	54.5	3	50	22 (15.7)
P. value 0.003	**Highly Significant**						
Occupation							
Governmental employee	8	15.7	7	8.4	6	100	21 (15.0)
Non-Governmental employee	1	2.0	0	0	0	0	1 (0.7)
Housewife	42	82.4	76	91.6	0	0	118 (84.3)
P. Value 0.001	**Highly Significant**						
Economic status							
Sufficient	21	41.2	27	32.5	5	83.3	53(37.9)
Barely sufficient	25	49	52	62.7	1	16.7	78(55.7)
Insufficient	5	9.8	4	4.8	0	0	9(6.4)
P. Value 0.08	**Non-Significant**						
Residency							
Urban	33	64.7	65	78.3	6	100	64 (32)
Rural	18	35.3	18	21.7	0	0	36 (25.7)
P. Value 0.07	**Non – Significant**						

Fisher exact test Chi-square

DISCUSSION

This descriptive study evaluated the level of knowledge regarding Pregnant women with gestational diabetes attending the Sulaimani Maternity Teaching Hospital. A total of 140 pregnant women with GDM were included using a convenient sampling technique. Regarding participants ' Demographic data, study results showed that most participants were housewives, primary school 35.7%, and urban women 74.3%. The mean age for pregnant women was 32.2 ± 5.7 years, and the range was between 21– 40 years. This distribution of the study is compatible with the results of the study conducted in India in 2016, in which the researchers concluded that the participants were in the age range of 18-38 years with a mean age of 28±3.2 years and the Majority of the sample were housewives 73.5% [8].

This study revealed that overall, Knowledge regarding GDM was good in 4.3%, fair in 59.3 %, and poor in 36.4 %. This finding is consistent with the study carried out by Dhyani et al., 2018, which reported that the majority of the women, that is, 57.6%, had average knowledge of GDM, while 21.8% of women had good knowledge, 1.6% had excellent knowledge, and 19% had poor knowledge [9]. Some of the findings in this study contrast with the study of George et al., 2016, which reported that 48.67% of women had fair knowledge, 34% had good knowledge, and 17.33% had bad knowledge about GDM [10].

The current study demonstrated that more than half of the participants had fair knowledge; this finding disagrees with the study conducted in Malaysia in 2015, where GDM respondents showed poor knowledge of GDM management [11]. This comparative study in Iran in 2019 showed a much higher knowledge and attitude towards gestational diabetes mellitus [12].

The present study indicates a statistically significant relationship between knowledge and some socio-demographic variables-respondents' education level and occupation were P= < 0.05. At the same time, age, economic conditions, and the residential sector were not considered statistically significant. Similarly, Lakshmi et al., 2018, indicated that a mother's education had a statistically significant association with their knowledge of GDM [13].

The current study showed that only a small proportion of pregnant women under age 34 had adequate knowledge, a total of 140 participants. In contrast, pregnant women over 34 years of age had no adequate knowledge of GDM, with no statistical significance between age and level of knowledge. Some of the results are consistent with the results of the study conducted by Price et al., 2017, and Bhowmik et al., 2018, who reported that the younger age group (<30 years old) had more excellent knowledge of GDM compared to those older than 30 years who had a statistically significant p-value < 0.05. [14, 15].

Knowledge of GDM in the study was not statistically significantly associated with the residency of the participant's pregnant women; those residing in urban areas had only a tiny proportion of cases of good knowledge compared to those in rural areas. In the same way, Balaji et al. 2017, reported that no statistical knowledge of the significance of GDM and its risk factors was low among rural women compared to urban women [16]. The findings of this study also disagree with those of the study conducted in Bangladesh in 2018, which indicated that those from urban areas were significantly more aware of GDM than those from rural areas [15].

In this study, occupation plays a highly significant role in the level of knowledge (p <0.001). This result contrasts a study conducted in Nepal in 2015, which showed that occupation did not play a significant role in knowledge [17].

In conclusion, the current study found that most gestational diabetes mellitus had a fair level of knowledge. Less than half of them were between 35-40 years old, which is a risky age for pregnancy. Therefore, this patient needs health education by health care providers, especially nurses. The nurse staff have a responsibility to conduct success plans and programs to increase their knowledge, such as diet, exercise, self-monitoring, and insulin administration and the training of nurses on the safety measures needed to handle insulin safely. Provide advice to gestational diabetes patients on eating plans and exercise to prevent it.

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