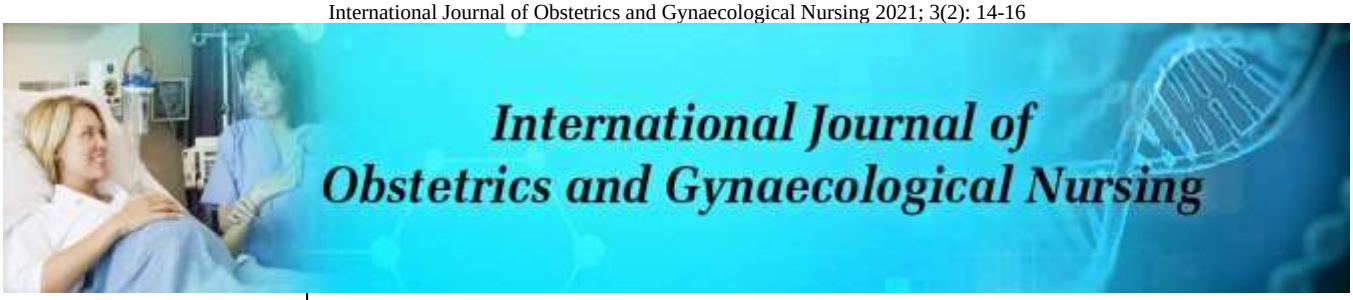

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A study to assess the knowledge regarding gestational diabetes mellitus and its risk factors among antenatal mothers

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Abstract
The gestational diabetes mellitus (GDM) is a condition in which a hormone made by the placenta prevents the body from using insulin effectively. Glucose builds up in the blood instead of being absorbed by the cells. Unlike type 1 diabetes, gestational diabetes is not caused by a lack of insulin, but by other hormones produced during pregnancy that can make insulin less effective, a condition referred to as insulin resistance. Present aim of the study was to assess the existing level of knowledge and its risk factors among antenatal mothers who attended antenatal clinic at Urban Primary Health Centre (UPHC), Ramapuram. A quantitative approach with descriptive research design was adopted for the present study. A total of 30 antenatal mothers among which (n=30) were recruited by using non probability convenience sampling technique. A Self-structured questionnaire method was used to gather both the demographic data and the existing level of knowledge and its risk factors on gestational diabetes mellitus among antenatal mothers. Outcome of the study results among 30 study participants revealed that, the mean score on existing level of knowledge and its risk factors on gestational diabetes mellitus among antenatal mothers was found to be 3.93 with standard deviation 0.70. Hence the findings of present study concluded that, antenatal mothers had a moderate level of knowledge and its risk factors on gestational diabetes mellitus.

Keywords: Antenatal mothers, gestational diabetes mellitus, knowledge

Introduction
Gestational diabetes mellitus (GDM) is defined as any degree of dysglycaemia that occurs for the first time or is first detected during pregnancy [1]. It has become a global public health burden [2]. GDM is one of the leading causes of mortality and morbidity for both the mother and the infant worldwide [3]. Mothers with GDM are at risk of developing gestational hypertension, preeclampsia and caesarean section [4]. Gestational Diabetes" was applied to what was thought to be a transient condition that affected fatal outcomes adversely, then abated after delivery. In the 1980s those cut-off points were adapted to modern methods for measuring glucose and applied to the modern definition of gestational diabetes — glucose intolerance with onset or first recognition during pregnancy. The presence of fasting hyperglycemia (>105 mg/dl) may be associated with an increase in the risk of intrauterine fetal death during the last 4–8 weeks of gestation [5]. Typically women with gestational diabetes exhibit no symptoms but some mothers may demonstrate increased thirst, increased urination, fatigue, nausea and vomiting, bladder infection, yeast infections and vision. Gestational diabetes affects 3-10% of pregnancies, depending on the population studied [6]. Approximately 7% of all pregnancies are complicated by GDM, resulting in more than 200,000 cases annually. In the United States today, 21 million people (7% of the population) have some form of diagnosed diabetes. Another 6 million people may be undiagnosed [7]. Approximately 3-10% of pregnancies in the United States are complicated by diabetes, of which 90% is gestational diabetes and 8% is pre-existing, insulin-resistant diabetes. The incidence of insulin-resistant diabetes is increasing markedly in the United States, probably related to rising population obesity and shifts in ethnicity.135, 000 pregnant mothers get the condition every year; approx. 1 in 2014 or 0.05% people in USA are effected [8]. To prevent DM in two generations, GDM is a perfect window of opportunity. With appropriate knowledge and positive attitude including healthy eating habits, weight control and regular exercise, the complications of GDM can be prevented which permits mothers to live a better life with their offspring.

To care for themselves all pregnant women require education and knowledge associated with preventing GDM [9]. Once the antenatal women are diagnosed to have GDM, they are put into the high-risk category and referred to a higher level of health-care facilities for follow-up care [10]. Wide differences in living conditions, socio-economic levels and dietary habits, vastly affects the prevalence rate in India [11]. There are several factors have shown to have a role in developing of GDM. The most common risk factors include previous personal and family history of GDM, history of the macrocosmic baby, unexplained stillbirths, and family history of type 2 diabetes (T2D). In-between pregnancy weight gain is considered one of the most common modifiable risk factor for GDM [12] According to the American Diabetes Association (ADA) guideline, the time for GDM screening depends on the presence of risk factors. If the pregnant women had any risk factors, then the screening should be done in the first prenatal visits while if the pregnant women have no risk factors, then the screening should be done between 24–28 weeks of gestations. Oral Glucose Tolerance Test (OGTT) used for diagnosis of GDM [13] Most women with GDM will not need to continue on insulin after delivery, but it is very important to repeat the OGTT after delivery. Regular screening for diabetes after delivery is very important as these women at risk to have earlier GDM in next pregnancies and about 50% of them will develop type 2 diabetes in the next 5-10 years [14] As the age of onset of diabetes is declining and the child bearing age increasing, it is not uncommon for women to have previously undiagnosed diabetes when they become pregnant; it is therefore important that all pregnant women be tested both early in the pregnancy to rule out overt diabetes, as well as later on in the 2nd and 3rd trimesters to detect GDM. Since, women with GDM are at a high risk of developing diabetes 5–10 years postpartum, follow-up of women with GDM after the delivery is crucial. This is emphasized by the fact that T2DM can be delayed or prevented in women with GDM by lifestyle modifications or modest-intermittent drug therapy [8]. so the main motive and aim of the present study was to assess the existing level of knowledge and its risk factors on gestational diabetes mellitus among antenatal mothers and to find the association between the existing level of knowledge and its risk factors on gestational diabetes mellitus among antenatal mothers with their selected demographic variables.

Materials and materials

The quantitative approach with descriptive research design was adopted for the present study. After obtaining ethical clearance from the Institutional Ethical Committee (IEC) of Saveetha Institute of Medical and Technical Sciences (SIMATS) and a formal permission from the department head of Obstetrics and Gynaecology Unit at Urban Primary Health Centre, Ramapuram, the study was conducted. A total of 30 antenatal mothers who attended antenatal clinic (n=30) who met the inclusion criteria were recruited as the study participants by using non probability convenience sampling technique. The inclusion criteria for the study participants were the antenatal mothers with no history of high-risk pregnancies and are between the age group of 20-35 years, who are willing to participate and able to read, write and understand Tamil and English. The exclusion criteria were antenatal mothers with history of gestational diabetes mellitus, psychiatric illness, non-co-operative and are not available during the study period. The purpose of the study was explained in depth by the investigator to each of the study participant and a written informed consent was obtained before collecting the data. The demographic data and the existing level of knowledge and its risk factors on gestational diabetes was gathered by administering a self-structured questionnaire and the collected data were tabulated and analysed by using descriptive and inferential statistics.

Results and Discussion

Section-A: Demographic Characteristics

Among 30 study participants, with regards to age 12(40%) were in the age group of 26-30 years. With regards to educational qualification 11(36.6%) were primary school, with regards to Monthly income 13(43.3%) were >10000, With regards to Religion 16(53.3%) were Hindu, With regards to hereditary disease18(60%), With regards to 16(53.3%) were Primi gravida mother, With regards to Gestational age in weeks 14(46.6%).

Section-B: Existing Level of Knowledge and It's Risk Factors on Gestational Diabetes Mellitus among Antenatal Mothers

The existing level of knowledge and its risk factors on gestational diabetes mellitus among antenatal mothers revealed that (25%) had inadequate knowledge, (65%) had moderate knowledge and (10%) had adequate knowledge, respectively [Table 1 and Figure1].

Table 1: frequency and percentage distribution on existing level of knowledge and it's risk factors on gestational diabetes mellitus among antenatal mothers

(N=30)

Existing level of knowledge	Frequency (Nos)	Percentage (%)
Inadequate	25	25%
Moderate	65	65%
Adequate	10	10%

Fig 1: Percentage Distribution on Existing Level of Knowledge and It's Risk Factors on Gestational Diabetes Mellitus among Antenatal Mothers

This finding was supported by Elizabeth Byakwaga *et al.* (2021) conducted a cross sectional study among 403 antenatal mothers in aim for to assess the level of knowledge and attitude towards the risk factors of gestational diabetes mothers. The data was collected by

using self structured questionnaire from all the samples and the study findings concluded that among 403 antenatal mothers only one third 125 (31%) of antenatal mothers were had aware about gestational diabetes mellitus [15].

Section C

Table 2: Existing level of knowledge and it's risk factors score on gestational diabetes mellitus among antenatal mothers

Existing level of knowledge and its risk factors	Mean	Standard Deviation
Inadequate	1.83	0.83
Moderate	3.93	0.70
Adequate	0.73	0.69

For the present study, the mean score on level of knowledge and its risk factors on gestational diabetes mellitus among antenatal mothers was 3.93 with standard deviation 0.70 of moderate knowledge.

Section D: Association between existing level of knowledge and it's risk factors score on gestational diabetes mellitus among antenatal mothers with their selected demographic variables

The study revealed that there was a statistically significant association was observed between the demographic variable age of samples, educational qualification, monthly income, religion, hereditary diseases, gravida, and gestational age in weeks., With the level of knowledge about gestational diabetes mellitus of antenatal women at $p<0.05$ level and other demographic variable had not showed statistically significant with level.

Conclusion

Thus, the findings of the present study revealed that, the existing level of knowledge and its risk factors on gestational diabetes mellitus among antenatal mothers was moderate and there is a need to improve the knowledge about birth preparedness through pamphlet distribution and create awareness by conducting health education programmes.

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Conflict of interest

Author's declare no conflict of interest.

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