



A Study to Evaluate the Knowledge on Gestational Diabetes Mellitus Among Pregnant Women Attending Antenatal Clinic at Urban Primary Maternity Health Centre, Vellore, Tamilnadu, South India

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Abstract:

The commonest non-communicable diseases among pregnant women is Gestational Diabetes Mellitus(GDM) which has higher prevalence with red alert in India leading to adverse effects on antenatal mother and the developing foetus. This study aimed to evaluate the knowledge on gestational diabetes mellitus among pregnant women attending antenatal clinic at Ambedkar Nagar urban primary maternity health centre, Vellore, Tamilnadu, South India on 56 samples selected by non-probability purposive sampling using quasi experimental one group pre-test only design. The structured questionnaire was used to collect the data and analysed using descriptive statistics and chi-square as inferential statistics revealed that majority of the pregnant women had inadequate knowledge, who were between the age group of 23-26 years, had their High School and Higher Secondary School Education, lived in Joint family, belonged to Muslim Religion, under non vegetarian category of dietary habit and were primi-parous. The null hypothesis were rejected and statistical significant association was found between the levels of knowledge and the selected background variables at $p=0.001$ and $p=0.05$ levels.

Key words: Knowledge, Gestational Diabetes Mellitus, Pregnant women, Antenatal Clinic, Urban Primary Maternity Health Centre.

INTRODUCTION

Pregnancy considered as unique physiologically normal episode in a woman's life. The Non-Communicable Diseases (NCD) Alliance task force on women and NCD had briefed the International Diabetes Federation (IDF) 2015 policy from 7th edition stated that diabetes found out of it with 85% diagnosed as Gestational Diabetes Mellitus (GDM). Globally three fourth of death occurred due to NCD in the low and middle income countries, owing to 18 million deaths were in reproductive years[1]. The American Diabetes Association (ADA) categorised the Gestational Diabetes Mellitus as the fourth type and defined as "The degree of carbohydrate intolerance with onset (or) first recognition during pregnancy"[2]. IDF in 2017 declared that hyperglycaemia in pregnancy as severe and neglected threat to maternal, neonatal health, the incidence of this condition boost with increasing reproductive age group (20- 45 years). Worldwide one in ten pregnancies affected with GDM and it is higher in low and middle income countries[3].

Need and Significance of the Study

In accordance with the 2015 survey report of India on GDM by Kalea.S., Mithal.A., Bansal.B., make known that in Kashmir 3.8%, Mysore 6.2%, Western India 9.5%, **Tamilnadu- 17.9%**, Punjab -35%, Lucknow 41%, Trivandrum 15%, Alwaye 21%, Bangalore 12% and in Ludhiana 17.5. The graded incidence was lower in Kashmir and higher in Lucknow when compared with Tamilnadu. According to this report the South Indian women were at higher risk of prevalence of GDM[4]. The estimated rate of GDM in Tamilnadu based on

the community study conducted at Chennai reveals that 17.8% in urban, 13.8% in semi urban and 9.9% in rural areas[5]. O'Sullivan.E.P., et al., (2011) surveyed on prevalence and outcome of gestational diabetes mellitus using new International Association of Diabetes and Pregnancy Study Group (IADPSG) criteria for screening the 5500 European women at 24th-28th weeks with oral glucose tolerance test and compared with WHO criteria. The maternal and neonatal adverse outcome were recorded, 12.4% were diagnosed with gestational diabetes mellitus using IADPSG criteria where as Only 9.4% were diagnosed with gestational diabetes mellitus using WHO criteria. The recorded adverse maternal outcomes were gestational hypertension, polyhydramnios and caesarean section and the neonatal outcomes were prematurity, large for gestational age, neonatal hypoglycaemia and respiratory distress. The IADPSG criteria screening decreased the maternal and neonatal morbidity[6]. In view of this fact that GDM spikes up and more research is required and there is increasing demand for the health care services to the human being for treating this condition as well as to create awareness on GDM care and improve the maternal, foetal outcome, the investigator aimed to conduct this study.

Objective of the study

1. To assess the level of existing knowledge regarding gestational diabetes mellitus among pregnant women attending antenatal clinic at Urban Primary Maternity Health Centre, Vellore.
2. To associate the level of existing knowledge regarding gestational diabetes mellitus with selected demographic variables.

Null Hypothesis

1. There will be no significant difference in the level of existing knowledge regarding gestational diabetes mellitus among pregnant women.
2. There will be no significant association between the levels of existing knowledge regarding gestational diabetes mellitus with selected socio demographic variables.

Review of related literature

Vanishree, et al., researched on assessing the knowledge of gestational diabetic mellitus care with 120 antenatal mothers attending the clinic in Kanchipuram district, Tamil Nadu, the results showed 17.5% of women had good knowledge, 56.7% had fair knowledge, and 25.8% of women had poor knowledge about GDM. The major sources of awareness of GDM were reported to be television/radio, neighbours/friends, and family members[7]. Lakshmi, et al., had done a descriptive cross sectional study on knowledge about gestational diabetes mellitus and its risk factors among 191 antenatal mothers attending the maternity centres and hospital in Chidambaram revealed that 35.2% , 21.5% had adequate knowledge on GDM, risk factors respectively[8]. Monir .N., et al., conducted a cross-sectional study to compare the knowledge of women with GDM and healthy pregnant women attending hospital in Cumilla City ,Bangladesh revealed that there was no significant difference was found on GDM awareness as well as impact on baby. They also have stated that there was poor awareness regarding GDM among healthy pregnant women when compared to GDM women.[9]

Research methodology and data collection procedure

The quantitative evaluative approach and quasi experimental one group pre-test only design was adopted for this study. The study participants were pregnant women attending the antenatal clinic at Ambedkar Nagar urban Primary Maternity Health Centre, Vellore from 2016 September to October. The study technique utilized was non- probability purposive sampling to conduct the research on 56 samples. The tool consists of two sections-Section A was on basic background variables- Age in years, Educational Qualification, Type of family, Religion, Dietary habit, Obstetrical score(primi, multi

parity) and the section B was on Knowledge on GDM. Data collection was done with the structured questionnaire on knowledge regarding gestational diabetes mellitus focusing on five main domains - gestational diabetes mellitus diagnosis, first line of treatment, self- monitoring of blood glucose, self - care and foetal monitoring with 20 items in the form of an objective type and closed ended with a single correct answer. The score awarded as “1” for correct answer and “0” for incorrect answer.

Table.1. Knowledge on GDM scoring key:

Percentage	Level of knowledge
<50%	In Adequate
75%- 50%	Moderately Adequate
>75%	Adequate

II.ANALYSIS AND INTERPRETATION OF THE STUDY:

The data's collected from 56 samples were subjected to descriptive and inferential statistics and the analysed results were interpreted in tables and figures. Table:1 represents the frequency and percentage distribution of background information. Majority of the pregnant women 48.2 % were between the age group of 23-26 years, 44.6% had completed their high school and higher secondary education, 51.8% living in joint family, 46.4% were Muslims, 71.4% belongs to non-vegetarian category of dietary pattern and 66.1% were Primi-paramothers. Table: 2 Describes the frequency and percentage of knowledge regarding Gestational Diabetes Mellitus. Among 56 samples 46.4%(26) had In-adequate knowledge, 39.3%(22) had Moderately adequate knowledge, 14.3% (8) had Adequate knowledge. Table:3 illustrates the association of existing knowledge regarding Gestational Diabetes Mellitus with selected background variables using chi-square . There was statistical significant association between the levels of knowledge and the selected background variables at p=0.001 level in the Age, Education qualification and Dietary habit. Moreover there was statistical significant association at p=0.05 level in Religion and Obstetrical score, but there was no significant difference in Type of family.

Major Findings:

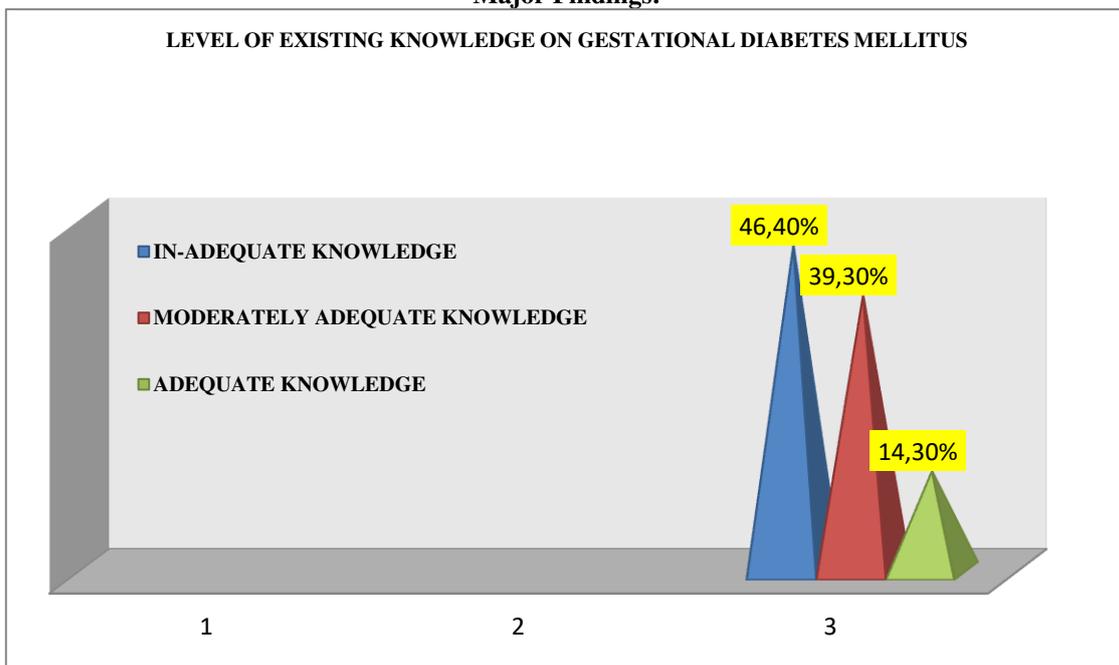


Figure.1. Major Findings:

Table.3.Association of existing knowledge regarding Gestational Diabetes Mellitus with selected background variables

Background variables		Level of knowledge on GDM			Total	Chi-square Test
		In-Adequate knowledge	Moderately Adequate knowledge	Adequate knowledge		
Age in years	19-22	05	05	0	10	$\chi^2=17.9$ DF=6 P=0.001 S***
	23-26	16	09	02	27	
	27-30	04	07	02	13	
	>30	01	01	04	06	
Educational qualification	No formal education	0	0	0	0	$\chi^2=54.8$ DF=10 P=0.001 S***
	Primary school education	07	04	01	12	
	Middle school education	08	08	0	16	
	High school and higher secondary school education	10	09	06	25	
	Graduates	01	01	01	03	
	Post-graduate	0	0	0	0	
Type of family	Nuclear family	12	10	05	27	$\chi^2=0.08$ DF=2 NS
	Joint family	14	12	03	29	
Religion	Hindu	13	07	01	21	$\chi^2=8.2$ DF=4 P=0.05 S*
	Muslim	09	14	03	26	
	Christian	04	01	04	09	
Dietary habit	Vegetarian	09	07	0	16	$\chi^2=10.3$ DF=2 P=0.001 S***
	Non -vegetarian	17	15	08	40	
Obstetrical score	Primi-para	18	15	04	37	$\chi^2=5.8$ DF=2 P=0.05 S*
	Multipara	08	07	04	19	

NS-non- significant,*significant at p<0.05, **significant at p<0.01, *** significant at p<0.001

III. DISCUSSION:

The present study revealed that majority of the pregnant women had inadequate knowledge on Gestational Diabetes Mellitus who were between the age group of 23-26 years, had completed their High School and Higher Secondary School Education, lived in Joint family, belonged to Muslim Religion, under non vegetarian dietary habit and primi-parous. The null hypothesis was rejected and proved that there was difference in the level of knowledge and statistical significant association was found between the levels of knowledge and the selected background variables at p=0.001 and p=0.05 levels. The research result of Monir .N., et al., also stated that majority 24% of the pregnant women were unaware of GDM, their mean age group was 26.54±5.85, had their High School And Higher Secondary School Education, as well as obtained the statistical significant association at p=0.05 for education and had logistic regression for the variables enhancing awareness on GDM. In addition to this Hussaineet., al also added that women with higher education had good knowledge on GDM [9]. **Limitation:** The generalization of this results is restricted as the sample size was lesser than 100.

IV.CONCLUSION:

This study report highlights to focus in improving the knowledge on Gestational Diabetes Mellitus among pregnant

women as more were in the category of inadequate knowledge level. Conveying the needed information at right time to concern person can prevent the adverse effect of the disease condition. This further provoked the investigator to take a step forward for provide Information education and communication regarding GDM which enhances a healthy lifestyle to reproduce health young leader for the future. Even more researches are expected for progress of this aspect with different domains.

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