A Study to Evaluate The Effectiveness of Planned Teaching Programme Regarding the knowledge on Prevention of Gestational Diabetes Mellitus Among Antenatal Mothers in Selected Community Area Bangalore.

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Abstract

Birth is a miracle and each baby is life's perfect creation. Pregnancy is often a time of hope for the future. Process of pregnancy and child birth are very much a personal journey. Each woman experiences the beauty of creating and giving birth to a child although pregnancy is not a disease but a normal physiological process it is associated with certain risks of health and survival both for the woman and for the new-born.

Pregnancy is associated with profound changes in the fat and carbohydrate metabolism. Glucose metabolism is characterized by a lower fasting plasma and elevated postprandial values in the early weeks. In later weeks 'carbohydrate metabolism is stressed by the rising levels of human chorionic somatotropin (hCS), prolactin, cortisol, and glucagon 's. These hormones cause decreased glucose tolerance and insulin resistance. A small pregnant population cannot withstand the physiological stresses accompanying pregnancy which result in abnormal glucose tolerance which causes Gestational diabetes mellitus.Prevention of gestational diabetes mellitus is losing weight before pregnancy, setting a goal for pregnancy weight gain, eating high fibre and low fat diets, reducing the size of food portion, exercising.

An Evaluatory Approach with Pre Experimental One Group Pre-test Post-test design was used for the study. The sample consisted of 60 Antenatal mothers selected by Convenient sampling technique. The data was collected through self-administered structured questionnaire. It was prepared to assess knowledge regarding prevention of GDM among antenatal mothers in selected community areas at Bengaluru. Based on the research problem and objective of the study the data collection tool was selected and developed. The collected data was analysed by using descriptive and inferential statistics.

The result showed the significant difference suggesting that the planned teaching programme was effective in increasing the knowledge of the mothers (t =23.55*). The mean post-test knowledge score was (80.4%) higher than the mean pre-test knowledge scores (40.8%). There was an association between the pre-test knowledge scores and the selected demographic variables like Age, Educational Status, Occupational Status, Religion, Residence, Type of family, Family income per month, Number of pregnancies, Gestational Age, Dietary Pattern, Previous History of GDM, source of information regarding GDM.

KEYWORDS : Assess; Effectiveness; Planned Teaching Program; Antenatal Mothers; Gestational Diabetes Mellitus.

INTRODUCTION

Gestational diabetes mellitus [GDM] is defined as any degree of glucose intolerance with onset or first recognition during pregnancy. Definition applies irrespective of the form of treatment or whether the diabetes persists after the pregnancy. It's the most common medical complication and metabolic disorder of pregnancy.[1]

Gestational diabetes is a type of diabetes that is first seen in a pregnant woman who did not have diabetes before she was pregnant. Some women have more than one pregnancy affected by gestational diabetes. Gestational diabetes usually shows up in the middle of pregnancy. It is identified between 24 and 28 weeks of pregnancy.[1]

GDM imposes risks for both mother and foetus, some of which continues throughout the life of mother and child.

Immediate maternal complications include preeclampsia, need for cesarean sections, and poly/oligohydramnios. Complications in the baby include hyperinsulinemia, macrosomia, shoulder dystocia, neonatal hypoglycaemia, and respiratory distress syndrome. Women with GDM are at an increased risk of GDM in future pregnancies and also at a higher risk of developing type 2 diabetes in the future. GDM also increases the risk of obesity and glucose intolerance in the offspring. GDM is therefore an important public health issue that has major repercussions for both mother and offspring. Detection of GDM thus provides a window of opportunity to intervenes and reduces adverse perinatal outcomes.[2]

Gestational diabetes mellitus (GDM) is a global health concern, not only because its prevalence is high and on the increase, but also because of the potential implications for the health of mothers and their offspring.[3]

NEED FOR THE STUDY

The incidence GDM worldwide approximately 4% of mothers every year. as many as 16% mothers exhibit GDM in India, hence it is of paramount importance to identify women at risk of GDM and keep a tight metabolic control in order to avoid immediate and long term consequences for their offspring.[3]

Prevalence of GDM has dramatically increased by 16-27% in the past 20 years among various ethnic groups.

The International Diabetes Federation (IDF) estimates that as of 2015, 16.2% of women with live births had some form of hyperglycemia in pregnancy, 85% of which were due to gestational diabetes. There is a notable difference in the prevalence of GDM, with the South East Asia Region having the highest prevalence (87.6%) of all the low- and middle- income countries (LMICs), where access to care is often limited. Asian women are more prone to develop GDM than European women and Indian women have 11-fold increased risk of developing glucose intolerance in pregnancy compared to Caucasian women. Studies shows that the prevalence of GDM in India was 2% in 1980, which subsequently increased to estimates that as of 16.2% in 2015.[4]

Gestational diabetes aetiology is apparently related to the pancreatic beta cell dysfunction or the delays response of the beta cells to the glycemiclevels, the marked insulin resistance secondary to placental hormone release, any significant marker of insulin resistance, past medical history of cardiovascular diseases. Epidemiology that

gestational diabetes affect around 2to 10% of pregnancies in the United States, being overweight and obese. Diagnosis is usually performed using an oral glucose tolerance test (OGTT). Although a non fasting glucose challenge test (GCT) is used in some parts of the worlds to screen women for those requiring a full OGTT.[5]

Prevention of gestational diabetes mellitus is losing weight before pregnancy, setting a goal for pregnancy weight gain, eating high fibre and low fat diets, reducing the size of your food portion, exercising.[6]

A Study was carried out a descriptive cross-sectional household survey involving 2595 women of reproductive age residing in five local government areas in the state. It employed a multi-stage sampling technique to collect data using an interviewer-administered questionnaire built using Open Data Kit (ODK) software uploaded on android mobile phones. The study results show the response rate was 100%. Mean age was 29.25 ±7.11 years. The majority (2,351; 90.6%) had heard about diabetes Mellitus but only 991 (38.2%) knew that diabetes can occur for the first time in pregnancy. Only 681 (26.2%) had good overall knowledge of GDM. The major sources of knowledge of GDM were from friends (49.8%), health workers (34.6%) and mass media (10.4%). These results underscore the need for information, education and communication (IEC) activities on a large scale targeted at women of reproductive age and their partners for prevention and control of GDM.[7]

It is important for women with diabetes in pregnancy or GDM to carefully control and monitor their blood glucose levels to reduce the risk of adverse pregnancy outcomes with the support of their healthcare provider. 1Giving awareness helps the antenatal women to achieve and maintain pregnancy and give birth to healthy infants. With the active participation of well-motivated women in the treatment plan and careful management from a multidisciplinary health care team, positive pregnancy outcomes are often possible.[8]

OBJECTIVES OF THE STUDY

1. To assess the pre-test knowledge on prevention of gestational diabetes mellitus among antenatal mother.

2. To administer of planned teaching programme regarding knowledge on prevention of gestational diabetic mellitus among antenatal mother.

3. To assess the post-test knowledge of the antenatal mothers after planned teaching programme regarding prevention of gestational diabetes mellitus

4. To identify difference between the mean pre-test and post-test knowledge score of antenatal mother regarding knowledge on prevention of gestational diabetes mellitus

5. To determine the association between the pre-test knowledge score antenatal women with selected socio demographic variables such as gestational age, education occupation family monthly income.

Hypothesis

H_1: There is a significant difference between the mean pre test and post test knowledge score of antenatal mother regarding knowledge on prevention of gestational diabetes mellitus.

H_2: There is a significant association between the mean pre test knowledge score regarding the knowledge on prevention of gestational diabetic mellitus with their selected socio demographic variables.

Research Methodology

Research methodology designed to develop or refine procedure for obtaining organizing and analyzing data. Research methods are the steps, procedure and the strategies for gathering and analyzing the data in a research investigation.

Research Design

The Research Design Adopted for This Study Was Pre Experimental One Group Pre-testPost test Design

Variable under Study

- ### Dependent Variable:

  Level of Knowledge about Prevention of Gestational Diabetes Mellitus Among Antenatal Mothers

- ### Independent Variables:

  Planned Teaching Programme Regarding Prevention Of Gestational Diabetes Mellitus Among Antenatal Mothers.

- ### Demographic Variables:

  In This Study it refers to Age, Educational Status, Occupational Status, Religion, Residence, Type of Family, Family Income per Month, Number Of Pregnancies, Gestational Age, Dietary Pattern, Previous History Of GDM, Source Of Information Regarding GDM.

Sample

Sample for the study will be 60 antenatal mothers who are fulfilling the inclusion criteria

Sampling Technique:

Convenient sampling technique is adopted to select the samples.

Data Collection Tool

Selection and Development of the Tool

The data was collected through self-administered structured questionnaire. It was prepared to assess knowledge regarding prevention of GDM among antenatal mothers in selected community areas at Bengaluru. Based on the research problem and objective of the study the data collection tool was selected and developed.

Description of the Tool

Data collection is the gathering of information needed to research problem. The tool was constructed after an extensive review of literature, discussion with the experts and investigator's personal experience.

The tool consists of 2 sections:

Sections -1

It consisted of 8 Socio demographic variables which includes Age, Educational Status, Occupational Status, Religion, Residence, Type of family, Family income per month, Number of pregnancies, Gestational Age, Dietary Pattern, Previous History of GDM, if yes source of information regarding GDM

Sections -2

A structured questionnaire was prepared regarding prevention of GDM. It consists of 30 items.

Procedure for Data Collection:

Data collection is the gathering of information needed to address a research problem. The main study data collection was done in 2022.The total sample of main study consisted of 60 antenatal mothers in Bangalore rural area, Bidadi. Data was collected from the sample by administering structured questionnaire after obtaining consent from the participants. Each session of data collection last for about 40-50 minutes.

RESULTS

The data was organized, tabulated, analysed and interpreted using descriptive and inferential statistics. Analysis was based on the objective and hypothesis of the study. The level of significant was at 0.05. The major findings are included below.

Effectiveness of Planned Teaching Programme

A. Comparison of Respondents on Knowledge level between Pre-test and Post test

N=60

Sl. No	Level of Knowledge	Pre Test		Post Test	
		NO	%	NO	%
1	Inadequate Knowledge (<50%)	40	66.6%	0	0
2	Moderate Knowledge (50-75%)	20	33.3%	09	15%
3	Adequate Knowledge (>75%)	0	0	51	85%
	Total	60	100%	60	100%

The above table depicts the comparison of pre-test and post test knowledge score on gestational diabetes among antenatal mothers. In pre- test 40(66.6%) respondents were belongs to inadequate level of knowledge, 20(33.3%) respondents were belongs to moderate level of knowledge and none of them have adequate level of knowledge. Where as in post test 51(85%) respondents were belongs to adequate level of knowledge, 9(15%) respondents were belongs to moderate level of knowledge and none of the belongs to inadequate level of knowledge.

B. Difference Between Pre Test And Post Test Scores & Paired "t"Test

N=60

Aspect	Max Score	Range Score	Respondents Knowledge			Paired "t" test
			Mean	Mean%	SD	
Pre Test	30	5-21	12.24	40.8%	3.77	23.55*
Post Test	30	17-29	24.12	80.4 %	2.76	
Enhancement	**30**	**12-8**	**11.88**	**39.6%**	**1.01**	

Above table represents the mean knowledge score of the antenatal mothers in pretest and post test. Post test mean knowledge score was found to be 24.12(80.4%)and SD 2.76. Moreover, the pre-test knowledge score was12.24 (40.8%) and SD 3.77. It reveals that the post test mean knowledge score were found higher than the pre-test knowledge score.

The statistical paired "t" test value is 23.55. Therefore there exists a statistical significance in the enhancement score indicating the effectiveness of structured teaching programme among antenatal mothers regarding gestational diabetes.

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Chi-square analysis which was used to bring out the association between the pre test knowledge score and the selected socio demographic variables. There was no statistically significant association found with the demographic variables of age, educational status, occupational status, religion, residence, type of family, family income per month, mode of delivery and source of information regarding GDM. The analysis revealed that there was significant associated with educational status, dietary pattern, gestation age, and number of pregnancies. Hence H2 is accepted.

CONCLUSION

The findings of the study showed that the knowledge of the antenatal Mothers was not satisfactory before the introduction of planned teaching program and it helped them to learn more. The post-test knowledge scores showed significant gain in knowledge. Hence the planned teaching program was an effective strategy for providing information and improving the knowledge of subjects. Educating the antenatal mothers will help them to improve the knowledge about the prevention of GDM.

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