



## EFFECTIVENESS OF SELECTED NURSING STRATEGIES FOR GESTATIONAL DIABETES MELLITUS

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### ABSTRACT

Gestational diabetes mellitus (GDM) was a perfect window of opportunity for the prevention of DM in two generations, and its incidence is increasing in our country. Awareness of the condition among antenatal women will translate into prevention and early diagnosis of the disease. This study was done to determine the awareness of GDM among all the antenatal women who attend a Primary Health Center (PHC) for antenatal care. One hundred and twenty antenatal women participated in the study. Mean age of the women was 23.8 years (SD: 2.94). Overall, 17.5% women had good knowledge, 56.7% had fair knowledge, and 25.8% women had poor knowledge about GDM. The major sources of awareness of GDM were reported to be television/radio, neighbors/friends, and family members. Only a small proportion of rural antenatal women had good knowledge about GDM. The awareness that untreated GDM may pose a risk to the unborn child was high among the study women. Health care workers have to play a greater role in bringing about awareness about GDM among antenatal women. Educating the primi antenatal mothers with GDM regarding the management of gestational diabetes mellitus will prevent the complications associated with GDM, also to reduce the neonatal & maternal mortality, morbidity rates.

**KEY WORDS:** Gestational diabetes mellitus, selected nursing strategies, maternal and fetal outcomes



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## INTRODUCTION

Pregnancy is a period in which lot of metabolic and hormonal changes takes place. Individual women will vary in their expectations and needs during the child bearing process. Pregnancy and child birth are special events in women's lives and indeed in the lives of their families. This can be a time of great hope and joyful anticipation. Although pregnancy is not a disease, but a normal physiological, it is associated with certain risks to health and survival both for the women and for the fetus. Gestational Diabetes Mellitus is commonly defined as "degree of glucose intolerance with onset or first recognition during pregnancy". In recent decades, more women of a reproductive age have diabetes, and more pregnancies are complicated by pre-existing diabetes especially in low- and middle-income countries (LMICs). Also of concern was gestational diabetes mellitus (GDM) - the type of diabetes that is first recognized during pregnancy and affects up to 15% of women worldwide.

### ***GDM in India – a country with a heavy diabetes burden***

India has the second largest number of people with diabetes in the world – currently estimated at 63 million. Not surprisingly therefore, the prevalence of GDM in India is also alarmingly high. Indian women are more likely to develop GDM. Estimates of the prevalence for GDM in India vary greatly; from the low figures in the northern region of Jammu, to higher figures reported in the southern state of Tamil Nadu. Classic risks factors for GDM Include obesity, family history previous obstetric history. Thus a mother with any of these risk factors to be identified and treated well. GDM can be controlled by lifestyle changes which include diet and exercises, usually disappears after pregnancy.

## OBJECTIVES

- To evaluate the effectiveness of Selected Nursing strategies for Gestational Diabetes Mellitus on Maternal outcomes.
- To determine the effectiveness of Selected Nursing strategies for Gestational Diabetes Mellitus on Foetal outcomes
- To find out the relationship between maternal and fetal outcomes among mother's with GDM.
- To associate Maternal and Foetal outcomes with selected background variables among mothers with GDM.

## HYPOTHESIS

- ❖ There will be a significant increase in knowledge on GDM among mothers who receive Selected Nursing Strategies on GDM than those who do not.
- ❖ There will be a significant difference in self-care practices among mothers who receive Selected Nursing Strategies on GDM than those who do not.
- ❖ There will be a significant difference in blood sugar levels among mothers who receive Selected Nursing Strategies on GDM than those who do not.
- ❖ There will be a significant difference in occurrence of maternal complications among mothers who receive Selected Nursing Strategies on GDM than those who do not.
- ❖ There will be a significant difference in fetal birth weight among mothers who receive Selected Nursing Strategies on GDM than those who do not.
- ❖ There will be a significant difference in occurrence of fetal complications among mothers who receive Selected Nursing Strategies on GDM than those who do not.

## RESERCH METHODOLOGY

### Research Design

Experimental Design, Pretest – posttest control group design

**Schematic representation of the research design**

Gps	Base line Pre-test	Intervention (Immediately after pretest)	Reinforcement1 (15 days after intervention)	Post test-1(1 month after intervention)	Reinforcement 2 (after posttest 1)	Posttest 2 (36-37 wks of gestation)	Posttest 3 (During labour)
SG	O <sub>1</sub>	*X	*X <sub>1</sub>	O <sub>2</sub>	*X <sub>1</sub>	O <sub>3</sub>	O <sub>4</sub>
CGG	O <sub>1</sub>	*	* <sub>1</sub>	O <sub>2</sub>	* <sub>1</sub>	O <sub>3</sub>	O <sub>4</sub>

\* Routine Care

\* X- Intervention

O1 -Pretest (Assessing knowledge, self care practices & monitoring PPBS,HbA1C)

O2 - Posttest1 (Assessing knowledge, self care practices & PPBS level (every 15 days interval)

O3 - Posttest 2 (Assessing knowledge, self care practices & monitoring PPBS,HbA1C level)

O4 - Posttest3 (Assessing maternal, foetal complications during labour)

**SETTING OF THE STUDY**

The study was conducted in selected Speciality Hospital, Madurai.

**POPULATION**

Antenatal mothers diagnosed to have gestational diabetes mellitus

**SAMPLE SIZE**

Primi gravida mothers with gestational diabetes mellitus. Among 30 samples 15 antenatal mothers in experimental group and 15 control groups.

**SAMPLE TECHNIQUES**

Consecutive sampling technique was used.

**CRITERIA FOR SAMPLE**

**1. INCLUSION CRITERIA**

- \* Primi mothers with GDM
- \* With singleton pregnancy
- \* Between gestational age of 24-34 weeks
- \* On medical treatment for GDM
- \* Who can understand read and write Tamil
- \* Who are willing for follow-up and for intranatal care in the same hospital

**2.EXCLUSION CRITERIA**

- \* Mothers with pre-existing diabetes mellitus
- \* Women with pre existing co-morbid conditions such as hypertension, liver or GI disorders

\* Mothers who are mentally ill

\* Mothers who had previous exposure to classes on GDM

**DATA COLLECTION METHOD**

Informed consent taken from the subject after explaining the study. Pretest was measured by using a questionnaire for assessing the knowledge and check list for assessing the self-care practices regarding GDM also blood test analysis done(PPBS,HbA1C).Selected Nursing Strategies on GDM were administered for 30 minutes. Reinforcement 1 given 15 days after intervention. Post test-1 was conducted 1month after intervention by using questionnaire for assessing the knowledge and check list for assessing the self care practices regarding GDM. Glucometer used to detect blood glucose level. Reinforcement – 2 given after post test -1.post test -2 was conducted 36-37 weeks of gestation by using questionnaire for assessing the knowledge and check list for assessing the self care practices regarding GDM. Glucometer used to detect blood glucose level. Post test 3 was conducted during labour by used check list for assessing the maternal and foetal complications.

## RESULTS&DISCUSSION

**Table 1**  
**Mann-Whitney U test for experimental and control group for knowledge regarding GDM among primi mothers with GDM**

Knowledge	Experimental		Control group		Z-test	P-value
	Median	IQR (Q <sub>3</sub> -Q <sub>1</sub> )	Median	IQR (Q <sub>3</sub> -Q <sub>1</sub> )		
Pre test	6	6-7	6	5-6	0.299	0.764
Post test -1	16	15-16	6	5-7	4.75	P<0.001***
Post test -2	24	23-25	6	5-7	4.712	P<0.001***

*The finding shows that there is a significant statistical difference between pre-test and post-test knowledge regarding GDM among experimental and control group of primi mothers with GDM at the level of p<0.001. The difference is due to the selected nursing strategies received by the experimental group.*

**Table 2**  
**Mann-Whitney U test for experimental and control group for self care practices among primi mothers with GDM**

Practice	Experimental		Control group		Z-test	P-value
	Median	IQR (Q <sub>3</sub> -Q <sub>1</sub> )	Median	IQR (Q <sub>3</sub> -Q <sub>1</sub> )		
Pre test	14	13-14	14	13-15	1.01	0.314
Post test -1	19	19-20	14	13-15	4.74	P<0.001***
Post test -2	31	30-32	14	13-16	4.73	P<0.001***

*Knowledge increases, there was a changes in self care practices on GDM. This table shows that there is a significant statistical difference between pre-test and post-test self care practices regarding GDM among experimental and control group of primi mothers with GDM at the level of p<0.001. The difference is due to the selected nursing strategies received by the experimental group.*

**Table 3**  
**Mann-Whitney U test for experimental and control group For outcome of GDM among primi mothers with GDM**

	Experimental		Control group		Z-test	P-value
	Median	IQR (Q <sub>3</sub> -Q <sub>1</sub> )	Median	IQR (Q <sub>3</sub> -Q <sub>1</sub> )		
Outcome	3	2-3	5	4-5	4.495	P<0.001***

*Table 3 compares the maternal& foetal outcome between experimental and control group. LSCS delivery, prolonged labour, and hypoglycaemic newborns were statistically significant (reduced complications) in the experimental group of primi mothers with GDM at the level of p<0.001. Statistical significance was calculated by using z- test. This significant difference is due to the intervention received by the experimental group.*

## DISCUSSION

Spearman correlation was used to find the relationship between knowledge and self care practices among experimental and control group of primi mothers with GDM. There was a positive correlation between knowledge and

self care practices in experimental group of primi mothers with GDM due to the selected nursing strategies. Due to small sample size no significant association was found between knowledge, self care practices and selected demographic variables of experimental and control group of primi mothers with GDM.

## REFERENCES

1. D. C. Dutta's, "Text Book of Obstetrics", 7<sup>th</sup> Edn, New Central BookAgency [P] Ltd; 281-287,(2011)
2. Mrs. A. Rama Devi et al, "Midwifery and Obstetrical Nursing"2<sup>nd</sup> Edn, Elsevier publisher;(135-143),2005
3. Dr. G. K. Sandhu, "Obstetric and Midwifery" Lotus Publishers, P.No 315-317(2013)
4. V.Ruth Bennett, "Myles Text Book for Midwives",12<sup>th</sup> Edn, Churchill Livingstone publisher; 357-362(1993)
5. Polit, D.F & Beck, C.T, Nursing Research,7<sup>th</sup> Edn,Lippincott Williams&Wilkins publisher,New York,275-312,(2008)
6. J.Homoko,"Diabetes and Pregnancy,Current Diabetes Reports, Selected Papers from volume 13, Issue 1, 1-5, February,( 2013)
7. Wolters K. Luwer,"Journal of Diabetes Nursing" 1<sup>st</sup> Edn, Dietary Health publisher New Delhi,220-221(2010)
8. Can J. Canadian Diabetes Association & Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada Diabetes 37 (Suppl),12-16(2013)
9. Kaiser, B., annnd Kazurel, C. Determinants of postpartum physical activity, dietary habits and weight loss after gestational diabetes mellitus, Lippincott publisher,58-59(2013)
10. Management of Diabetes in Pregnancy, The Journal of Clinical and Applied Research and Education, Volume 38, Supplement 1, s77-s80, January, (2015)