



A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE OF GESTATIONAL DIABETES MELLITUS AND ITS PREVENTION AMONG PRIMI ANTENATAL MOTHERS IN SELECTED HOSPITALS AT KOLLAM

Grana B. Thomas^{1*}, Angel James¹, Joshna Johnson¹, Sini Y.¹, Sofia Varghese¹ and P. V. Greeshma²

¹BSc. Nursing Students, Bishop Benziger College of Nursing, Kollam, Kerala, India.

²Nursing tutor, Bishop Benziger College of Nursing, Kollam, Kerala, India.

***Corresponding Author: Grana B. Thomas**

BSc. Nursing Students, Bishop Benziger College of Nursing, Kollam, Kerala, India.

Article Received on 28/10/2022

Article Revised on 17/11/2022

Article Accepted on 06/12/2022

ABSTRACT

The research project undertook was “A study to assess the effectiveness of video assisted teaching programme on knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers in selected hospital at kollam”. The objectives of the study were to assess the effectiveness of video assisted teaching programme on gestational diabetes mellitus and its prevention among primi antenatal mothers and to find out the association between pretest knowledge scores on gestational diabetes mellitus and its prevention among primi antenatal mothers with selected demographic variables (age, religion, education, occupation, type of family, family history of gestational diabetes mellitus, dietary pattern, previous knowledge on gestational diabetes mellitus) The study was conducted among 60 primi antenatal mothers. In order to assess the effectiveness of video assisted teaching programme, the study sample was selected using non probability purposive sampling technique. The tool used for data collection is structured knowledge questionnaire. The data analysis of the study were based on the objectives of the study using descriptive and inferential statistics. The findings of the present study revealed that there was significant difference between pre-test and post-test knowledge scores on gestational diabetes mellitus and its prevention among primi antenatal mothers in selected hospitals at Kollam and there was significant association between pre-test knowledge scores on knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers and selected demographic variables such as age, religion, education, occupation, type of family, family history of gestational diabetes mellitus, previous knowledge on gestational diabetes mellitus and dietary pattern. Based on the findings, the researchers had drawn implications which were vital concerns in the field of nursing practice, nursing administration, nursing education and also for the future development.

KEYWORDS: Assess; video assisted teaching programme; Structured knowledge questionnaire; gestational diabetes mellitus; primi antenatal mothers.

INTRODUCTION

Diabetes Mellitus is a condition in which a hormone made by the placenta prevents the body from using effectively. Glucose build up in the blood instead of being absorbed by the cells. Unlike type 1 diabetes Mellitus, Gestational diabetes Mellitus is not caused by insulin, But other hormones produced during pregnancy that can make insulin ineffective, a condition referred to as insulin resistance.^[1]

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. Gestational diabetic symptoms disappear following delivery. Approximately 3 to 8 percent of all pregnant women in

the United States are diagnosed with gestational diabetes.^[1]

The etiology is unknown in this condition but some theories says that, The placenta supplies a growing fetus with nutrients and water and also produces a variety of hormones to maintain pregnancy. Some of these hormones (estrogen, cortisol, human placental lactogen) can have a blocking effect on insulin. Which usually begins about 20 to 24 weeks into the pregnancy.^[3]

Abnormal levels of blood glucose in pregnant women can affect immediate and long term health of both mother and baby. GDM affects two generations both the present and the next generation. GDM is associated with

increased risk of maternal and neonatal complications like preeclampsia, macrosomia, shoulder dystocia, birth injuries, increased risk of caesarean delivery, hypoglycemia, neonatal jaundice respiratory distress syndrome, polycythemia and hypocalcemia in newborn. Both GDM mother and her offspring are at risk of Type 2 Diabetes and obesity in future.^[2]

STATEMENT OF THE PROBLEM

“A study to assess the effectiveness of video assisted teaching programme on knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers in selected hospitals at Kollam”

OBJECTIVES

The objectives of the study were

- To assess the effectiveness of video assisted teaching programme on knowledge of Gestational diabetes mellitus and its prevention among primi antenatal mothers in selected Hospitals at Kollam.
- To find out the association between the pretest knowledge scores on knowledge of Gestational diabetes mellitus and its prevention among primi antenatal mothers with Selected demographic variables. (age, religion, education, occupation, family history of Gestational diabetes mellitus, dietary pattern, previous knowledge on gestational diabetes Mellitus)

OPERATIONAL DEFINITIONS

ASSESS: To evaluate or estimate the nature, ability or quality of something. In this study assess refers to determine the effectiveness of video assisted teaching programme on knowledge of gestational diabetes

mellitus and its prevention among primi antenatal mothers in selected hospitals at Kollam.

EFFECTIVENESS: It is the capability to make desired result, In this study it refers to significant change in knowledge on gestational Diabetes mellitus and its prevention among primi antenatal mothers using video assisted Teaching programme as determined by significant difference in pretest and posttest Knowledge scores.

KNOWLEDGE: knowledge refers to the understanding of or gaining of skills through experience. In this study knowledge refers to the significant difference between pretest and posttest score, after giving video assisted teaching programme.

VIDEO ASSISTED TEACHING PROGRAMME: It refers to a multimedia teaching in a systematically organized way with the help of video to provide information to primi Antenatal mothers on gestational diabetes mellitus and its prevention.

GESTATIONAL DIABETES MELLITUS: It is defined as the carbohydrate intolerance of variable severity with onset or first recognition during the present pregnancy.

PRIMI ANTENATAL MOTHER: It refers to a woman who is pregnant for the first time.

PREVENTION: In this study prevention refers to the primary preventive measures like lifestyle modification, diet and exercise by educating primi antenatal mother's using video assisted teaching programme.

RESEARCH METHODOLOGY

Research approach	: Quantitative research
Research design	: Pre Experimental One Group Pretest Posttest Research Design
Variables	Dependent variable: knowledge of primi antenatal mothers. Demographic variables: In this study demographic variables are age, religion, education, occupation, Family history of Gestational Diabetes mellitus, dietary pattern, previous knowledge on gestational diabetes mellitus.
Setting of the study	: the setting area was Upasana Hospital Kollam, Valiyath Institute of medical science Karunagappally, Sankers Hospital Kollam.
Population	: In this study the population were primi antenatal mothers in selected hospitals at Kollam.
Sample	: In this study the samples were primi antenatal mothers who fulfilled the inclusion criteria.
Sample Size	: In this study the sample size were 60 primi antenatal mothers in selected hospitals at Kollam.
Sampling Technique	: Non Probability Purposive Sampling Technique.

RESULTS AND DISCUSSION

Table 1: Frequency and percentage distribution of pretest score on knowledge of gestational diabetes mellitus and its prevention.

Score	Score Range	Frequency	Percentage
0 - 10	Poor knowledge	28	46.6%
11 - 20	Average knowledge	32	53.4 %
21 - 30	Good knowledge	0	0%

The data presented in the table 1 shows that 46.6 % of mother had poor knowledge, 53.4 % had average knowledge and 0% had good knowledge.

Table 2: Frequency and percentage distribution of posttest score on knowledge of gestational diabetes mellitus and its prevention.

Score	Score Range	Frequency	Percentage
0 - 10	Poor knowledge	6	10 %
11 - 20	Average knowledge	48	80 %
21 - 30	Good knowledge	6	10 %

The data presented in the table 2 shows that, only 10% of mothers had poor knowledge, 80% of mothers had average knowledge and 10% had good knowledge.

Section 3: Evaluating the Video Assisted Teaching Programme on knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers in the selected hospitals at Kollam.

Table 3 Mean, 't' value of pretest and posttest on knowledge of gestational diabetes mellitus and its prevention.

	N	Mean	SD	t
Pretest	60	10.71	11.04	13.15
Posttest	60	15.48	17.74	

t. = 2.00, significant at 0.05 level.

The data presented in the table 3 shows that the mean posttest score (15.48) greater than mean pretest score (10.71) on knowledge of gestational diabetes mellitus and its prevention. The 't' value is greater than the table value (13.15) That is, the Video Assisted Teaching Programme was effective. Hence the research hypothesis was accepted. It shows that Video Assisted Teaching Programme was effective in increasing the knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers.

Section 4: Association between knowledge of gestational diabetes mellitus and selected demographic variables.

Association between knowledge and selected demographic variables.

Variables	Knowledge			df	Chi square value	Table value	Significance
	Poor	Average	Good				
1. Age in years							
21 -24 years	11	8	2	4	4.706	9.49	N S
25 -28 years	13	15	0				
29 - 32 years	3	7	1				
2. Religion							
Christian	9	14	3	4	5.672	9.49	N S
Hindu	7	15	2				
Muslim	7	3	0				
3. Family Type							
Nuclear	15	16	4	4	1.076	9.49	N S
Joint	10	12	1				
Extended	1	1	0				
4. Education							
Primary	1	1	0	6	4.851	12.59	N S
High school	6	3	0				
Higher secondary	8	12	3				
Graduated	13	11	2				
5. Occupation							
Private	6	5	1	6	2.742	12.59	N S
Housewife	16	17	3				
Government	3	5	0				
Business	2	2	0				
6. Source of information							
Family	5	10	0	2	10.771	5.99	S
Friends	2	2	2				
Social media	8	7	2				
Health workers	6	12	0				

7. Family history of Gestational Diabetes Mellitus							
Yes	8	10	2	2	4.18	5.99	N S
No	18	22	0				
8. Diet							
Vegetarian	2	5	0	2	10.002	5.99	S
Non vegetarian	26	25	2				

Table 4: The association was computed by using chi square test. It was inferred that the present study showed significant association between knowledge and demographic variables like source of information and diet and no significant association between knowledge and demographic variables like age, religion, family, education, occupation and family history of gestational diabetes mellitus (calculated value lesser than the tabulated value at 0.05 level of significance). Regarding source of information, the calculated value 10.771 is greater than table value 5.99 at 0.05 level of significance. Regarding diet, the calculated value 10.002 is greater than table value 5.99 at 0.05 level of significance. Regarding age, the calculated value 4.706 is lesser than table value 9.49 at 0.05 level of significance. Regarding religion, the calculated value 5.672 is lesser than table value 9.49 at 0.05 level of significance. Regarding family type, the calculated value 1.076 is lesser than 9.49 at 0.05 level of significance. Regarding education, the calculated value 4.851 is lesser than table value 12.59 at 0.05 level of significance. Regarding occupation, the calculated value 2.742 is lesser than table value 12.59 at 0.05 level of significance. Regarding family history of gestational diabetes mellitus, the calculated value 4.18 is lesser than table value 5.99 at 0.05 level of significance. Hence the research hypothesis is accepted. So there was no significant association between demographic variables and knowledge at 0.05 level of significance.

DISCUSSION

The present study was conducted to evaluate the effectiveness of video assisted teaching programme regarding the knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers. In order to achieve the objectives of the study, pre experimental one group pre-test post-test research design was adopted. The sample was selected by non-probability purposive sampling technique. The samples comprised of 60 primi antenatal mothers in selected hospitals at Kollam.

OBJECTIVES

The objectives of the study were

1. To assess the effectiveness of video assisted teaching programme on knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers in selected hospitals at Kollam.
2. To find out the association between the pre-test knowledge scores on knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers with selected demographic variables such as age, type of family, education, occupation, family history of gestational diabetes

mellitus, dietary pattern, previous knowledge on gestational diabetes mellitus and source of infection.

Discussion of findings with other studies based on objectives

- To assess the effectiveness of video assisted teaching programme on knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers in selected hospitals at Kollam.

The findings of the present study revealed that there was significant difference between the mean pre-test knowledge score which is 10.71 and the mean post-test knowledge scores which is 15.48, before and after video assisted teaching programme and were statistically significant at 0.05 level. It shows that video assisted teaching programme regarding the knowledge of gestational diabetes mellitus and its prevention was effective in improving the knowledge among primi antenatal mothers.

The findings of the study were supported by a study to evaluate the effectiveness of video assisted teaching programme on gestational diabetes mellitus among primi gravida mothers attending antenatal outpatient department at Institute of Obstetrics and Gynaecology and government hospital for women and children, Egmore, Chennai.

The samples were 60 in both the present study and the referent study. The sampling technique used in present study is non-probability purposive sampling and in referent study, it is purposive sampling technique. The data was collected from primi antenatal mothers with gestational diabetes mellitus using structured knowledge questionnaire whereas in referent study the data collected from primi gravid mothers with gestational diabetes mellitus using semi-structured interview schedule. In both studies, researchers found that video assisted teaching programme was an effective strategy in improving knowledge regarding gestational diabetes mellitus. The findings of the present study are consistent with the above mentioned study. It shows that video assisted teaching programme is effective in improving knowledge among primi antenatal mothers regarding gestational diabetes mellitus.^[24]

- To find out the association between the pre-test knowledge scores on knowledge of gestational diabetes mellitus and its prevention among primi antenatal mothers with selected demographic variables {age, type of family, education, occupation, religion, family history of gestational diabetes

mellitus, dietary pattern, previous knowledge on gestational diabetes mellitus, source of information.

The association between pre-test knowledge scores with selected demographic variables such as age, type of family, education, occupation, dietary pattern, religion, previous knowledge on gestational diabetes mellitus and source of information were computed by chi-square test. The chi-square value is 10.77 for source of information and 10.00 for dietary pattern which were greater than the chi-square tabulated value. This shows there is significant association between knowledge with selected variables like source of information and dietary pattern except demographic variables such as age, type of family, education, occupation and religion, family history gestational diabetes mellitus.

The finding of the present study was supported by another study on knowledge about gestational diabetes mellitus and its risk factors among antenatal mothers attending care, urban Chidambaram.

The sample size in referent study was 191 pregnant women who attended the antenatal clinic during the study period at Maternity Health centre attached to Rajah Muthiah Medical College, Chidambaram and Government Taluk Hospital, Chidambaram whereas the sample size in present study was 60 primi antenatal mothers. The research design of the referent study was descriptive cross-sectional design whereas the research design of the present study was one group pre-test post-test experimental design. The data was collected from the sample using a pretested questionnaire in referent study and a structured knowledge questionnaire is used for data collection in present study. In the referent study, education of the mother was found to have statistically significant association with their knowledge on gestational diabetes mellitus whereas in the present study the source of information and the dietary pattern were found to have significant association with pre-test knowledge scores on gestational diabetes mellitus.³⁵

REFERENCES

1. Geneva; Johns Hopkins medicine defining gestational diabetes mellitus [google scholar].
2. Vellingra A., Zawiejska A., Harreiter J., Simmons. Gestational diabetes mellitus and life style intervention of gestational diabetes mellitus prevention, 2012; 19: 1-7.
3. Wang Y, Lin Y, Risk for gestational diabetes mellitus in antenatal mothers, 2019; 19: 1-7.
4. K.Shankya.s, Zhang H., gestational diabetes mellitus, 2015; 66: 14-20.
5. Leek.w, Ching s.m, Ramachandran v,sulaiman.w.a.w,prevalence and risk factors of gestational diabetes mellitus, 2018; 18: 494.
6. Moses R.G, Brand – miller J. dietary risk factors for gestational diabetes mellitus, 2009; 32: 2314.[google scholar].
7. Shin D, Lee K.W, dietary pattern during pregnancy associated with risk of gestational diabetes mellitus, 2015; 7: 9369-9382.
8. Athukarala C, Crowther C A, Willson K, Women with gestational diabetes mellitus in the ACHOIS trial, 2007; 47: 37-41.
9. Kalra p, Kachhawaha c p, prevalence of gestational diabetes mellitus and its outcome Ind. J. Endocrinol. Metabol, 2013; 17: 677-680.
10. Rajput R, Yadavy, Namda s., prevalence of gestational diabetes mellitus and associated risk Indian J med res, 2013; 137: 728-733.
11. Zhang C. Ning Y. Effect of dietary and life style factors in the risk of gestational diabetes, 2011; 99: 19755-19795.
12. <https://doi.org/10.3945/ajcn.110.001032>.
13. <https://WWW.Sciencedirect.com/science/article/pii/S2213338421001627>.knowledge of gestational diabetes mellitus among pregnant women.
14. V.Shriraam, S.Mahadevan, S.Rani Awareness of gestational diabetes mellitus among antenatal mothers Indian. J. endocrinol metab, 2013; 17(1).
15. Balayi Bhwadhorni, Mohan deepa, sivagangan mallapeimal .knowledge about gestational diabetes mellitus among pregnancy women in south, 2017; 8(1): 22-26.
16. Ben-Haroush A, Yogev Y., Hod M. Epidemiology of gestational diabetes mellitus and its association with type 2 diabetes. Diabet Med, 2010; 21(2): 103–113.
17. Kim C, Berger DK, Chamany S. Recurrence of gestational diabetes mellitus: a systematic review. Diabetes World, 2008; 30(5): 1314–9.
18. Billionnet C, Mitanchez D, Weill A, et al. Gestational diabetes and adverse perinatal outcomes from 716,152 births in France in 2012. Diabetologia, 2017; 60(4): 636–44.
19. McIntyre HD, Catalano P, Zhang C, et al. Gestational diabetes mellitus. Nat Rev Dis Primers, 2019; 5(1): 47.
20. Wang YY, Liu Y, Li C, et al. Frequency and risk factors for recurrent gestational diabetes mellitus in primiparous women: a case control study. BMC Endocr Disord, 2019; 19(1): 22.
21. Moosazadeh M, Asemi Z, Lankarani KB, et al. Family history of diabetes and the risk of gestational diabetes mellitus in Iran: a systematic review and meta-analysis. Diabetes Metab Syndr, 2017; 11(Suppl 1): S99–S104.
22. zgu-Erdinc AS, Sert UY, Kansu-Celik H, et al. Prediction of gestational diabetes mellitus in the first trimester by fasting plasma glucose which cutoff is better? Arch Physiol Biochem, 2019; 1–5. <https://doi.org/10.1080/13813455.2019.1671457>.
23. Aliya Jiwani, Elliot Marseille, Nicolai Lohse, Peter Damm, Moshe Hod, G. Kahn James Gestational diabetes mellitus: results from a survey of country prevalence and practices J Matern Fetal Neonatal Med, 2012; 25(6): 600-610.

24. Sangeetha Thomas, Ruopfuvinuo Pienyu, Santhosh Kareepadath Rajan Awareness and knowledge about gestational diabetes mellitus among antenatal women Psychol Community Health, 2019; 8(1): 237-248.
25. L.A. Price, L.J. Lock, L.E. Archer, Z. Ahmed Awareness of gestational diabetes and its risk factors among pregnant women in Samoa Hawai'i J Med Public Health, 2017; 76(2): 48-54.
26. World Health Organization Prevention of Diabetes Mellitus. Report of a WHO Study Group. World Health Organization, 1994. - PubMed.
27. Lambrinou I, Vlachou SA, Creatsas G. Genetics in gestational diabetes mellitus: association with incidence, severity, pregnancy outcome and response to treatment. Curr Diabetes Rev, 2010; 6(6): 393-399. doi:10.2174/157339910793499155 - DOI - PubMed.
28. Lao TT, Ho LF, Chan BC, Leung WC. Maternal age and prevalence of gestational diabetes mellitus. Diabetes Care, 2006; 29(4): 948-949. doi:10.2337/diacare.29.04.06.dc05-2568 - DOI - PubMed.
29. Dabelea D, Snell-Bergeon JK, Hartsfield CL, Bischoff KJ, Hamman RF, McDuffie RS; Kaiser Permanente of Colorado GDM Screening Program. Increasing prevalence of gestational diabetes mellitus (GDM) over time and by birth cohort: Kaiser Permanente of Colorado GDM Screening Program. Diabetes Care, 2005; 28(3): 579-584. doi:10.2337/diacare.28.3.579 - DOI - PubMed.
30. Seshiah V, Balaji V, Balaji MS, Sanjeevi CB, Green A. Gestational diabetes mellitus in India. J Assoc Physicians India, 2004; 52: 707-711. - PubMed.
31. Suresh Sharma, nursing research and statistics, 2nd edition Elsevier publications, page number, 163.
32. Suresh Sharma, nursing research and statistics, 2nd edition Elsevier publications, page number, 71.
33. Suresh Sharma, nursing research and statistics, 2nd edition Elsevier publications, page number, 44
34. Suresh Sharma, nursing research and statistics, 2nd edition Elsevier publications, page number, 40.
35. <https://ijneronline.com/HTMLPaper.aspx?Journal=International%20Journal%20of%20Nursing%20Education%20and%20Research;PID=2017-5-1-5>.