International Journal of Nursing and Health Research
www.nursingjournal.in
Online ISSN: 2664-6420, Print ISSN: 2664-6412
Received: 02-12-2025, Accepted: 01-01-2026, Published: 16-01-2026
Volume 8, Issue 1, 2026, Page No. 8-11

# A study to assess the effectiveness of planned teaching on knowledge regarding gestational diabetes among antenatal mothers in selected hospital

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**Abstract**
**Background of the study:** About one-third of all diabetics may go undetected since problems are typically not discovered until after they have developed. No randomized trials are demonstrating the advantages of early diagnosis through screening of asymptomatic individuals, even though the burden of diabetes is well known, the natural history is well understood, and there is good evidence for the benefit of treating cases diagnosed through usual clinical care. However, there is enough indirect evidence to support the opportunistic screening of high-risk patients in a clinical environment.
**Objectives:** To assess the effectiveness of planned teaching about knowledge regarding gestational diabetes among antenatal mothers in the selected hospital. A pre-experimental and quantitative research approach was used with one group pre and post-test design to evaluate the effectiveness of planned teaching. The tool used for data collection was a structured questionnaire which comprised 10 items in demographic data and 35 item on gestational diabetes the reliability of tool was established by split half method.
**Results:** The major finding of the study result showed that among all subjects, in pre- test score was, 0-20% of the antenatal mothers had poor level of knowledge score and 41-60% had good level of knowledge score. Post-test knowledge score was 61-80%of the antenatal mothers had very good level of knowledge score, 81-100% had Excellent level of knowledge score. Mean Pre-test knowledge score of the subjects was 13.40±3.26. And Mean Post-test Knowledge score of the subjects was 25.86+1.95
**Conclusion:** The major finding revealed that planned teaching enhanced the knowledge of antenatal mothers about gestational diabetes.

**Keywords:** Gestational diabetes, planned teaching program, antenatal mothers, selected hospital

## Introduction

Birth is a miracle and each baby is life's perfect creation. Each woman experiences the beauty of creating and giving birth to a child.

Although pregnancy is a natural physiological process and not an illness, there are significant hazards to the health and life of both the mother and the baby she gives birth to. The metabolism of carbohydrates and fats is known to undergo significant modifications during pregnancy.

Before the discovery of insulin in 1921, diabetes in pregnancy was historically seen as a condition that would kill both the mother and the fetus. Hoet *et al*. revealed the neonatal and obstetric effects of pregnancy-related hyperglycemia in 1950.

it is known as gestational diabetes mellitus (GDM) when the first signs of glucose intolerance appear or are first noticed during pregnancy.

## Objectives

The objectives of study are

1. To assess the effectiveness of planned teaching about knowledge regarding gestational diabetes among the antenatal mothers in selected hospital.
2. To assess the existing knowledge regarding gestational diabetes among the antenatal mother in selected hospital.
3. To find the association of knowledge regarding gestational diabetes among antenatal mothers with their selected demographic variables.

## Materials and Methods

A pre-experimental and quantitative research approach was used with one group pre and post-test design to evaluate the effectiveness of planned teaching. The tool used for data collection was a structured questionnaire which comprised 10 items in demographic data and 35 item on gestational diabetes the reliability of tool was established by split half method. The pre- test was administered to 75 primigravida mother followed by the planned teaching, after 7 days, post test was conducted on staff nurses by using the same tool Gathered data was analyzed by using descriptive and inferential statistical in of frequency, percentage, mean, standard deviation, paired 't' test

## Statistical Analysis

The data was analyzed by descriptive and inferential statistics. Demographic data was analyzed using frequency and percentage, data from the questionnaire before and after planned teaching program administered was also analyzed using frequency, percentage and 't' test. The association between knowledge findings and demographic variables was found by using t test and chi square.

This table shows the comparison of pretest and post-test knowledge scores of subjects regarding gestational diabetes. Mean, standard deviation and mean difference values are compared and student's paired 't' test is applied at 5% level of significance. The tabulated value for n=75-1 i.e., 74 degrees of freedom was 1.98. The calculated 't' value i.e., 32.60 are much higher than the tabulated value at 5% level of significance for overall knowledge score of subjects which is statistically acceptable level of significance.

## Results

**Table 1:** n=

| Demographic Variables | No of subjects | Percentage |
|---|---|---|
| Age(yrs.) | | |
| 18-21 yrs. | 9 | 12.0 |
| 22-25 yrs. | 33 | 44.0 |
| 26-29 yrs. | 28 | 37.3 |
| 30-33 yrs. | 5 | 6.7 |
| ≥34 yrs. | 0 | 0 |
| Educational Status | | |
| Illiterate | 1 | 1.3 |
| Primary School | 17 | 22.7 |
| Secondary School | 39 | 52.0 |
| Higher Secondary | 14 | 18.7 |
| Graduate and above | 4 | 5.3 |
| Occupation | | |
| Service | 6 | 8.0 |
| Housewife | 49 | 65.3 |
| Labor | 4 | 5.3 |
| Farmer | 16 | 21.3 |
| Residence | | |
| Urban | 24 | 32.0 |
| Rural | 51 | 68.0 |
| Type of family | | |
| Nuclear | 21 | 28.0 |
| Joint | 54 | 72.0 |
| Monthly Family Income(Rs) | | |
| Below 10000 Rs | 43 | 57.3 |
| 10001-30000 Rs | 25 | 33.3 |
| 30001-50000 Rs | 7 | 9.3 |
| ≥50001 Rs | 0 | 0 |
| Gravida | | |
| Primi | 49 | 65.3 |
| Multi | 26 | 34.7 |
| Previous knowledge of gestational diabetes | | |
| Yes | 12 | 16.0 |
| No | 63 | 84.0 |
| Source of information regarding gestational diabetes | | |
| Mass Media | 1 | 1.3 |
| Family members/ relatives/friends | 4 | 5.3 |
| Health Worker | 7 | 9.3 |
| None | 63 | 84.0 |
| Gestational Age | | |
| <20 Weeks | 6 | 8.0 |
| 24-27 weeks | 21 | 28.0 |
| 28-30 weeks | 30 | 40.0 |
| >30 weeks | 18 | 24.0 |
| | | |

**Table 2:** Significance of difference between knowledge score in relation to pre-test and post-test

| Test | Mean | SD | Mean Difference | t-value | p-value |
|---|---|---|---|---|---|
| Pre-Test | 13.40 | 3.26 | 12.46±3.30 | 32.60 | 0.0001 S,p<0.05 |
| Post-Test | 25.86 | 1.95 | | | |

n=

**Table 3:** The association of knowledge score in relation to demographic variables: post test

| Variables | Groups | Knowledge score | | $X^2$ | df | P value | significance |
|---|---|---|---|---|---|---|---|
| | | Below Md | Above Md | | | | |
| Age in years | 18-21 yrs. | 0 | 1 | 0.01 | 3 | 0.79 | Not significant |
| | 22-25 yrs. | 0 | 4 | | | | |
| | 26-29 yrs. | 0 | 2 | | | | |
| | 30-33 yrs. | 0 | 0 | | | | |
| | ≥34 yrs. | 0 | 0 | | | | |
| Educational status | Illiterate | 0 | 0 | 1.16 | 4 | 0.88 | Not significant |
| | Primary School | 0 | 2 | | | | |
| | Secondary School | 0 | 3 | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Higher Secondary | 0 | 2 | | | | |
| | Graduate and above | 0 | 0 | | | | |
| Occupational status | Service | 0 | 0 | 4.05 | 3 | 0.25 | Not significant |
| | Housewife | 0 | 3 | | | | |
| | Labor | 0 | 1 | | | | |
| | Farmer | 0 | 3 | | | | |
| Residence | Urban | 0 | 1 | 1.11 | 1 | 0.29 | Not significant |
| | Rural | 0 | 6 | | | | |
| Type of family | Nuclear | 0 | 2 | 0.001 | 1 | 0.97 | Not significant |
| | Joint | 0 | 5 | | | | |
| Monthly Family Income(Rs) | Below 10000 Rs | 0 | 5 | 1.04 | 2 | 0.59 | Not significant |
| | 10001-30000 Rs | 0 | 2 | | | | |
| | 30001-50000 Rs | 0 | 0 | | | | |
| | ≥50001 Rs | 0 | 0 | | | | |
| Gravida | Primi | 0 | 3 | 1.72 | 1 | 0.18 | Not significant |
| | Multi | 0 | 4 | | | | |
| Previous knowledge of gestational diabetes | Yes | 0 | 2 | 0.90 | 1 | 0.34 | Not significant |
| | No | 0 | 5 | | | | |
| Source of information regarding gestational diabetes | Mass Media | 0 | 1 | 11.74 | 3 | 0.008 | Significant Association |
| | Family members/ relatives/friends | 0 | 1 | | | | |
| | Health Worker | 0 | 0 | | | | |
| | None | 0 | 5 | | | | |
| Gestational Age | <20 Weeks | 0 | 1 | 0.70 | 3 | 0.87 | Not significant |
| | 24-27 weeks | 0 | 2 | | | | |
| | 28-30 weeks | 0 | 2 | | | | |
| | >30 weeks | 0 | 2 | | | | |

There was no significant association of knowledge score of subjects with their demographic variable (age, educational status, occupation, types of family, residence, income, parity, previous information regarding gestational diabetes source of information, gestational age).Association found with previous information regarding gestational diabetes source of information.

## Discussion

The major finding of the study result showed that among all subjects, in pre- test score was, 0-20% of the antenatal mothers had poor level of knowledge score and 41-60% had good level of knowledge score. Post-test knowledge score was 61-80%of the antenatal mothers had very good level of knowledge score, 81-100% had Excellent level of knowledge score. Mean Pre-test knowledge score of the subjects was 13.40±3.26. And Mean Post-test Knowledge score of the subjects was 25.86+1.95 The study reported that the result regarding level of knowledge regarding gestational diabetes the subjects in pre-test were poor and after the implementation of the planned teaching post test score increased. With regard to second objective of the study result showed that in pre-test mean score was 30.40 and standard deviation were 3.26. Post-test mean score was 25.86 and standard deviation 1.95. The calculated 't' value i.e., 32.60.was much higher than the tabulated value at 5% level of significance for overall knowledge score of subjects which was statistically acceptable level of significance. Hence it is statistically interpreted that the Planned Teaching on knowledge regarding gestational diabetes among antenatal mothers was effective.

## Conclusion

The study concludes that the Structured Teaching Programme was found to be effective in increasing the knowledge level of study subjects, there was a critical need to educate them about Gestational Diabetes

**Acknowledgement**

At the beginning I express my deep gratitude and praise to God Almighty whose grace and continuous blessing have given me strength and courage to complete this study. It is my pleasure and privilege to express my sincere thanks to Principal, Ms, Arti Wasnik HOD of OBGY Department, statistician, my deep respect and homage to my dearest loving Parent**,** for their kind support and prayer to complete my study successfully. I render my deep sense of gratitude to all my husband Mr. Nilesh S. Manwar, friends and colleagues for their constant help throughout the study. Last but not the least I would like to extend my appreciation towards my mother, my loving and caring parents, brothers and all my family members for their constant support and love throughout the study.

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