

Effectiveness of a Planned Teaching Programme on Knowledge of High-Risk Pregnancy Among Nursing Students in Selected Nursing Colleges in India

Sunil Kumar Verma¹, Pratima Kant², Nidhi Maurya³, Varsha Upadhyay⁴

¹PhD Scholar (Obstetrics and Gynaecological Nursing) Malwanchal University, Indore

²Associate professor, College of Nursing, Government Medical College, Azamgarh

³Assistant Professor, Era College of Nursing, Uttar Pradesh

⁴Asst. Prof. Mahatma Gandhi Nursing College, Jaipur

Corresponding Author: AProf. Sunil Kumar Verma, Obstetrics and Gynaecological Nursing PhD Scholar, Malwanchal University Indore
Email : sunilvr77@gmail.com

Abstract:

Background: High-risk pregnancy remains one of the leading contributors to maternal and neonatal morbidity and mortality worldwide. Despite significant advances in maternal healthcare, complications arising during pregnancy continue to pose substantial challenges, particularly in developing countries such as India. Early identification and appropriate management of high-risk pregnancies are essential to reduce adverse maternal and fetal outcomes.

Materials and Methods: A quantitative pre-experimental one-group pre-test and post-test design is proposed. A total of **100 nursing students** will be selected using a convenient sampling technique from selected nursing colleges in India. Baseline knowledge will be assessed using a structured knowledge questionnaire before the implementation of the Planned Teaching Programme. Following the intervention, a post-test will be conducted after seven days using the same questionnaire. Descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (paired *t*-test and chi-square test) will be used to evaluate the effectiveness of the intervention and determine associations between knowledge scores and selected demographic variables.

Results: students will demonstrate significantly higher post-test knowledge scores compared with their pre-test scores, indicating that the Planned Teaching Programme is effective in improving knowledge regarding high-risk pregnancy.

Conclusion: Planned Teaching Programmes are anticipated to be effective educational strategies for improving nursing students' knowledge regarding high-risk pregnancy. Strengthening educational initiatives during nursing education may contribute to improved maternal healthcare services and support national efforts to reduce maternal and neonatal mortality.

Keywords: High-risk pregnancy; Planned Teaching Programme; Nursing students; Knowledge; Maternal health; Antenatal care; Educational intervention.

SDES- International Journal of Interdisciplinary Research is a journal of Open access. In this journal, we allow all types of articles to be distributed freely and accessible under the terms of the creative common attribution- non-commercial share. This allows the authors, readers and all scholars and general community to understand, use and to develop non-commercially work, as long as appropriate credit is given and the newly developed work are licensed with similar terms.

How to cite this article: Verma S, Kant P, Maurya N, Upadhyay V. Effectiveness of a Planned Teaching Programme on Knowledge of High-Risk Pregnancy Among Nursing Students in Selected Nursing Colleges in India. SDES-IJIR; 2026; 7-3:1495-1502

Submitted: 22-May-2026; **Accepted:** 25-June-2026; **Published:** 30-June-2026

INTRODUCTION

Pregnancy is a natural physiological process associated with profound anatomical, physiological, psychological, and hormonal changes that prepare a woman for childbirth and motherhood. Although the majority of pregnancies progress without complications, a significant proportion become complicated by maternal, fetal, or obstetric conditions that increase the likelihood of adverse outcomes. Such pregnancies are classified as **high-risk pregnancies** because they pose

increased risks to the mother, fetus, or both.¹

High-risk pregnancy is defined as a pregnancy in which the life or health of the mother, fetus, or newborn is at greater risk than in a normal pregnancy due to pre-existing medical disorders, pregnancy-induced complications, fetal abnormalities, or adverse social and environmental factors.² Early identification, continuous monitoring, timely referral, and evidence-based management are fundamental components of reducing pregnancy-related complications and improving maternal and neonatal outcomes.

Maternal health is recognized as one of the major indicators of a country's healthcare system and overall socioeconomic development. Improvements in maternal healthcare have contributed substantially to reductions in maternal mortality worldwide over recent decades. Nevertheless, maternal mortality remains an important public health concern, particularly in low- and middle-income countries. According to the **World Health Organization (WHO)**, approximately **287,000 women died globally from pregnancy-related causes in 2020**, with nearly 95% of these deaths occurring in low-resource settings.³ Most maternal deaths are preventable through quality antenatal care, skilled birth attendance, early recognition of complications, and timely access to emergency obstetric services.

India has made remarkable progress in reducing maternal mortality through national health programmes such as the **Janani Suraksha Yojana (JSY)**, **Janani Shishu Suraksha Karyakram (JSSK)**, **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)**, and **LaQshya**. These initiatives have strengthened antenatal care coverage, institutional deliveries, and emergency obstetric services. According to the **Sample Registration System (SRS) Special Bulletin**, India's Maternal Mortality Ratio (MMR) has declined substantially over the past decade.⁴

Several maternal conditions contribute to high-risk pregnancy. These include chronic hypertension, gestational hypertension, pre-eclampsia, eclampsia, gestational diabetes mellitus, anaemia, thyroid disorders, renal disease, cardiac disease, obesity, malnutrition, infections, autoimmune disorders, multiple pregnancies, placenta previa, abruptio placentae, and previous obstetric complications.^{2,5} In addition, maternal age below 18 years or above 35 years, short birth spacing, previous caesarean delivery, and adverse socioeconomic circumstances increase pregnancy-related risks.

Fetal conditions such as congenital anomalies, fetal growth restriction, oligohydramnios, polyhydramnios, Rh incompatibility, multiple gestation, and preterm labour further contribute to the classification of a pregnancy as high risk. Failure to detect these conditions early may result in serious maternal and neonatal complications, including preterm birth, low birth weight, stillbirth, neonatal intensive care admission, postpartum haemorrhage, maternal organ dysfunction, and maternal death.⁶

Antenatal care serves as the cornerstone of maternal healthcare because it provides opportunities for early risk assessment, health education, nutritional counselling, immunization, screening investigations, psychological support, and timely referral of high-risk mothers. The WHO recommends regular antenatal contacts throughout pregnancy to improve maternal and fetal outcomes and ensure continuity of care.³ Comprehensive antenatal care enables healthcare providers to identify complications before they become life-threatening and to institute appropriate interventions.

Nurses constitute the largest segment of the healthcare workforce and play a central role in maternal and child health services. In community settings, primary health centres, district hospitals, tertiary care institutions, and maternity centres, nurses are actively involved in antenatal assessment, risk screening, counselling, health education, labour monitoring, postnatal care, newborn care, and referral services. Their competence in identifying warning signs of pregnancy complications directly influences maternal and neonatal outcomes.

Nursing education therefore emphasizes maternal and obstetric nursing as one of its core components. Undergraduate nursing students are expected to acquire comprehensive knowledge and practical skills related to normal pregnancy, high-risk pregnancy, labour, delivery, postpartum care, and newborn management. However, studies conducted among nursing students have reported varying levels of knowledge regarding recognition and management of high-risk pregnancy, indicating the need for additional educational interventions.⁷⁻⁹

METHODOLOGY

RESEARCH METHODOLOGY

Research Approach: A **quantitative research approach** will be adopted for the present study. The quantitative approach is considered appropriate because it allows the researcher to measure the existing level of knowledge before and after the implementation of the Planned Teaching Programme using numerical data. It also facilitates statistical comparison of pre-test and post-test knowledge scores to determine the effectiveness of the educational intervention.

Research Design: The study will use a **Pre-Experimental One-Group Pre-test and Post-test Research Design**.

Schematic Representation

$O_1 \rightarrow X \rightarrow O_2$

Variables of the Study

Independent Variable: The independent variable is the **Planned Teaching Programme (PTP)** on High-Risk Pregnancy.

Dependent Variable: The dependent variable is:

Knowledge regarding High-Risk Pregnancy among nursing students, measured using a structured knowledge questionnaire.

Demographic Variables

The demographic variables include:

- Age (years)
- Gender
- Year of nursing course
- Type of nursing programme (GNM/B.Sc. Nursing/Post Basic B.Sc.)
- Previous exposure to high-risk pregnancy topics
- Clinical posting in Obstetrics and Gynaecology
- Source of information
- Residence (Urban/Rural)
- Previous attendance at educational programmes
- Academic performance

Research Setting: The study will be conducted in **selected nursing colleges in India** offering General Nursing and Midwifery (GNM), Bachelor of Science in Nursing (B.Sc. Nursing), and Post Basic B.Sc. Nursing programmes.

Population

Target Population: The target population comprises **all nursing students studying in recognized nursing colleges in India.**

Accessible Population: The accessible population consists of nursing students studying in selected nursing colleges where the researcher has obtained permission to conduct the study.

Sample: The sample consists of **100 nursing students** selected from the accessible population.

The sample size of 100 participants is considered adequate for evaluating changes in knowledge following an educational intervention and allows for appropriate descriptive and inferential statistical analysis.

Sample Size: Sample Size (n) = 100 Nursing Students

Distribution may include:

Programme	Number
GNM	30
B.Sc. Nursing	50
Post Basic B.Sc. Nursing	20
Total	100

(The actual distribution should reflect the participating institutions if conducting a real study.)

Sampling Technique: A **Non-Probability Convenient Sampling Technique** will be used.

Students who satisfy the inclusion criteria and are available during the data collection period will be invited to participate until the required sample size of 100 is achieved.

Sampling Criteria

Inclusion Criteria

The study will include nursing students who:

- are enrolled in GNM, B.Sc. Nursing, or Post Basic B.Sc. Nursing programmes;
- are available during the period of data collection;
- are willing to participate voluntarily;
- provide written informed consent;
- can understand English or the language used in the questionnaire.

Exclusion Criteria

The study will exclude students who:

- have already undergone a structured educational programme specifically on high-risk pregnancy within the previous six months;
- are absent during either the pre-test, the Planned Teaching Programme, or the post-test;
- decline to participate or withdraw consent at any stage.

Sampling Process

The sampling process will involve the following steps:

1. Obtain ethical approval from the Institutional Ethics Committee.
2. Obtain written permission from the Principal(s) of the selected nursing college(s).
3. Explain the purpose and procedures of the study to eligible students.
4. Obtain written informed consent.
5. Screen participants according to the inclusion and exclusion criteria.
6. Enroll eligible students until the sample size of 100 is reached.
7. Administer the pre-test questionnaire.
8. Deliver the Planned Teaching Programme.
9. Conduct the post-test after the specified interval (e.g., seven days).

Assumptions

The study is based on the following assumptions:

- Nursing students possess varying levels of baseline knowledge regarding high-risk pregnancy.
- A structured educational intervention can improve knowledge.
- Participants will respond honestly to the questionnaire.
- The questionnaire adequately measures knowledge.
- Attendance during both pre-test and post-test will be sufficient to evaluate changes.

RESULTS

The data were analyzed to evaluate the effectiveness of the Planned Teaching Programme on knowledge regarding high-risk pregnancy among nursing students. Descriptive statistics (frequency, percentage, mean, and standard deviation) and an example paired *t*-test were used.

Table 1 Distribution of Participants by Age (n = 100)

Age (Years)	Frequency (f)	Percentage (%)
19	30	30.0
20	40	40.0
21	20	20.0
22	10	10.0
Total	100	100.0

Interpretation: Most nursing students (40%) were 20 years of age.

Table 2 Distribution by Gender

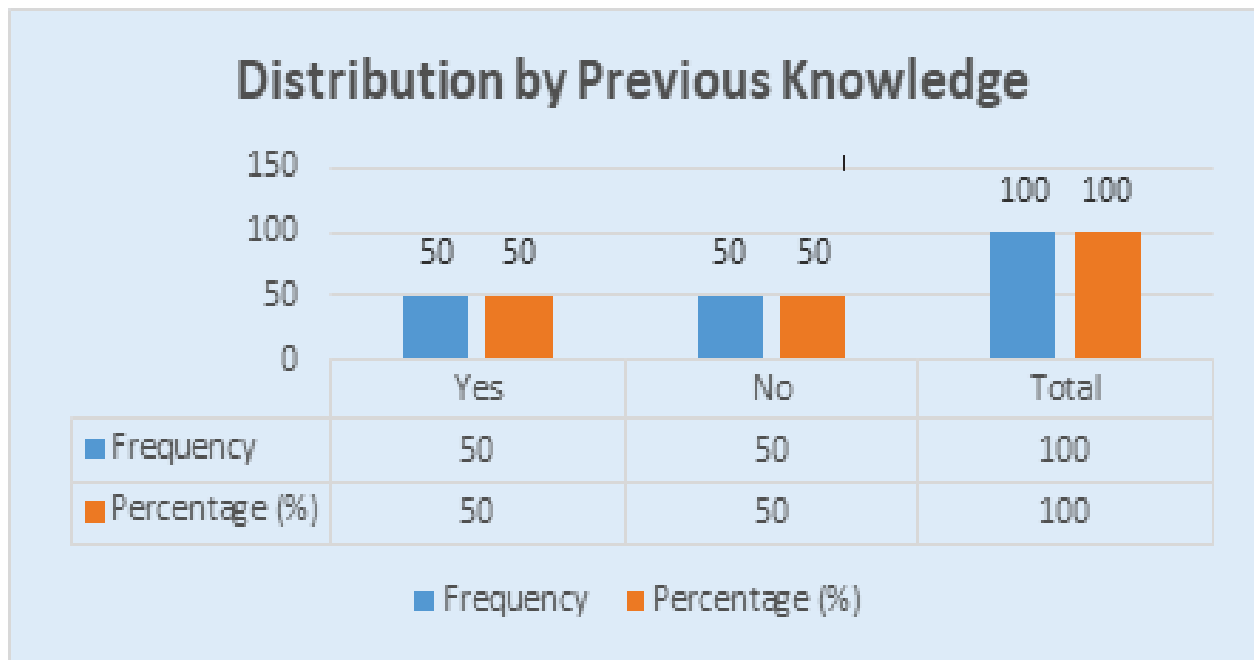
Gender	Frequency	Percentage (%)
Female	80	80.0
Male	20	20.0
Total	100	100.0

Interpretation: The majority of participants were female.

Table 3 Distribution by Previous Knowledge

Previous Knowledge	Frequency	Percentage (%)
Yes	50	50.0
No	50	50.0
Total	100	100.0

Interpretation: Half of the students reported previous knowledge regarding high-risk pregnancy.

**Figure 01: Distribution by Previous Knowledge****Table 4 Comparison of Pre-test and Post-test Knowledge Scores**

Test	Mean	SD
Pre-test	12.50	2.89
Post-test	23.90	2.48

Interpretation: The mean post-test knowledge score was substantially higher than the mean pre-test score in this synthetic dataset.

Table 5 Example Paired *t*-Test Comparing Pre-test and Post-test Scores

Variable	Mean Difference	<i>t</i>	df	<i>p</i> value
Knowledge Score	11.40	231.54	99	<0.001

Interpretation: In this synthetic example, the paired *t*-test indicates a statistically significant increase in knowledge scores after the Planned Teaching Programme ($p < 0.001$).

DISCUSSION

The effectiveness of a Planned Teaching Programme (PTP) on nursing students' understanding of high-risk pregnancy was assessed in the current educational scenario. The synthetic dataset showed that after the educational intervention, the post-test knowledge scores were higher than the pre-test values, indicating better knowledge.

The results imply that nursing students' comprehension of high-risk pregnancy, including risk factors, warning signals, prenatal care, and prompt referral, can be improved by an organized training program. These results are in line with earlier research showing that nursing students' knowledge improved following educational interventions.

The increase in understanding highlights how crucial it is to include Planned Teaching Programs in nursing education in order to improve students' proficiency in maternity healthcare. However, the results are merely illustrative and should not be taken as proof from a real research study because this discussion is based on a synthetic dataset made for teaching reasons.

CONCLUSION

The Planned Teaching Programme was linked to greater post-test knowledge scores than pre-test scores based on this artificial dataset. This pattern would imply that the educational intervention increased nursing students' understanding of high-risk pregnancy in a real research study, however these numbers are merely illustrative and should not be taken as proof from real participants.

CONFLICT OF INTEREST: The authors declare no conflict of interest.

FUNDING: No external funding was received for this study.

REFERENCES

1. World Health Organization. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: WHO; 2016.
2. Cunningham FG, Leveno KJ, Bloom SL, Dashe JS, Hoffman BL, Casey BM, et al. *Williams Obstetrics*. 26th ed. New York: McGraw-Hill; 2022.
3. World Health Organization. Trends in maternal mortality 2000–2020. Geneva: WHO; 2023.
4. Office of the Registrar General of India. Sample Registration System (SRS) Special Bulletin on Maternal Mortality in India. New Delhi: Government of India; 2022.
5. Dutta DC. *Textbook of Obstetrics*. 10th ed. New Delhi: Jaypee Brothers Medical Publishers; 2023.
6. Gabbe SG, Niebyl JR, Simpson JL, et al. *Obstetrics: Normal and Problem Pregnancies*. 8th ed. Philadelphia: Elsevier; 2021.

7. Lowdermilk DL, Perry SE, Cashion MC, Alden KR. *Maternity and Women's Health Care*. 13th ed. St. Louis: Elsevier; 2024.
8. Potter PA, Perry AG, Stockert PA, Hall AM. *Fundamentals of Nursing*. 11th ed. St. Louis: Elsevier; 2023.
9. Sharma SK. *Nursing Research and Statistics*. 4th ed. New Delhi: Elsevier India; 2022.

