

Knowledge and Attitudes Regarding High-Risk Pregnancy Among Undergraduate Nursing Students: A College-Based Cross-Sectional Study

Aayushi Bansal¹, Prafullata Suryavanshi², Dinesh Kumar Kachhawa³, Kavita Singh Tomer⁴

¹Professor cum HOD Community Health Nursing Dept., Govt. College of Nursing, LLRM Medical College, Meerut, Uttar Pradesh

²Professor, Sai Care College of Nursing Nashik, Maharashtra

³Associate Professor, Rani Durgawati nursing college Banda, UP

⁴Vice Principal, Shri Balaji Institute of nursing Mowa Raipur

Corresponding Author:

Prof. Dr. Aayushi Bansal, Professor cum HOD Community Health Nursing
Dept., Govt. College of Nursing, LLRM Medical College, Meerut, Uttar Pradesh

E-mail:

aayushichaudhary123@gmail.com

GFNPSS-International Journal of Multidisciplinary 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 scholars and general public to read, 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 : Bansal A, Suryavanshi P, Kachhawa DK, Tomer KS. Knowledge and Attitudes Regarding High-Risk Pregnancy Among Undergraduate Nursing Students: A College-Based Cross-Sectional Study. GFNPSS-IJMR 2026; 7:8: 3594-3599
Submitted: 08 August 2026: Accepted: 17 August 2026: Published: 31 August 2026

Abstract

Background: High-risk pregnancy is associated with an increased risk of complications for the mother, fetus, or newborn and requires timely identification, close monitoring and appropriate management. Undergraduate nursing students are future healthcare professionals who play an important role in antenatal assessment, health education, early identification of danger signs and referral of women with high-risk pregnancies. Adequate knowledge and positive attitudes toward high-risk pregnancy are therefore essential for nursing students.

Materials & Methods: A quantitative descriptive cross-sectional research design was adopted among 120 undergraduate nursing students in a selected nursing college. Participants were selected using a convenient sampling technique. Data were collected using a structured knowledge questionnaire and a five-point Likert-type attitude scale regarding high-risk pregnancy. Descriptive statistics were used to summarize the findings, while the chi-square test was used to determine the association between selected variables and knowledge and attitude levels.

Results: Among 120 nursing students, 24 (20.0%) had inadequate knowledge, 69 (57.5%) had moderately adequate knowledge and 27 (22.5%) had adequate knowledge regarding high-risk pregnancy. Regarding attitude, 17 (14.2%) had an unfavorable attitude, 65 (54.2%) had a moderately favorable attitude and 38 (31.7%) had a favorable attitude. A statistically significant association was found between year of study and knowledge level ($p=0.004$). Previous clinical exposure to high-risk pregnancy was significantly associated with both knowledge ($p=0.002$) and attitude ($p=0.018$).

Conclusion: The study found that most undergraduate nursing students had moderately adequate knowledge and moderately favorable attitudes regarding high-risk pregnancy. The findings highlight the importance of strengthening classroom teaching, clinical exposure, case-based learning and simulation-based education related to high-risk pregnancy.

Keywords: High-risk pregnancy; Knowledge; Attitude; Nursing Students; Undergraduate Nursing; Antenatal Care; Maternal Health; Cross-Sectional Study.

INTRODUCTION

Pregnancy is generally a physiological process; however, certain maternal, fetal and pregnancy-related conditions can increase the risk of complications and adverse outcomes. Such pregnancies are commonly considered high-risk pregnancies and require closer observation, appropriate investigations, timely interventions and referral when necessary.¹

High-risk pregnancy may result from pre-existing maternal conditions, pregnancy-related complications, previous obstetric history, extremes of maternal age, multiple pregnancy, abnormal fetal conditions and other maternal or social factors. Early recognition of risk factors is essential for ensuring appropriate antenatal care and reducing preventable maternal and perinatal morbidity and mortality.² Maternal and newborn health remains an important

component of global health. Many maternal complications can be prevented or managed when women receive timely antenatal care, skilled healthcare and appropriate referral.³ Antenatal care provides opportunities to identify risk factors, monitor maternal and fetal well-being, provide health education and prepare women and families for childbirth and possible complications.

Nurses and midwives are frequently involved in antenatal assessment and maternal health education. Their ability to recognize warning signs and risk factors is particularly important in settings where nurses serve as the first point of contact for pregnant women.⁴

Undergraduate nursing students receive theoretical and clinical education related to maternal and child health. During their clinical training, students are expected to develop knowledge and skills related to antenatal assessment, identification of high-risk conditions, monitoring of pregnant women, health education and referral. Adequate knowledge may contribute to appropriate clinical decision-making, while a positive attitude may encourage students to provide compassionate and timely care.⁵

However, theoretical knowledge alone may not always translate into appropriate clinical understanding. Nursing students may encounter challenges in recognizing complex maternal conditions, interpreting clinical findings and understanding the urgency associated with high-risk pregnancy. Therefore, assessment of both knowledge and attitudes is important.⁶

College-based assessment can help identify educational gaps among nursing students and assist nursing faculty in developing targeted teaching strategies. Case studies, clinical demonstrations, simulation exercises and supervised clinical exposure may improve students' understanding of high-risk pregnancy.⁷

Therefore, the present study was conducted to assess knowledge and attitudes regarding high-risk pregnancy among undergraduate nursing students.

Objectives

1. To assess the level of knowledge regarding high-risk pregnancy among undergraduate nursing students.
2. To assess attitudes regarding high-risk pregnancy among undergraduate nursing students.
3. To identify areas of inadequate knowledge regarding high-risk pregnancy.
4. To determine the association between knowledge level and selected demographic and academic variables.
5. To determine the association between attitude level and selected demographic and academic variables.

MATERIALS & METHODS

The present study was conducted to assess knowledge and attitudes regarding high-risk pregnancy among undergraduate nursing students. A quantitative descriptive cross-sectional research design was adopted. Data were collected from eligible nursing students using a structured knowledge questionnaire and an attitude scale. The methodology included the study setting, population, sample size, sampling technique, data collection tools, ethical considerations and

statistical analysis.

Research Approach

A quantitative research approach was adopted.

Research Design

A descriptive cross-sectional research design was used.

Study Setting

The study was conducted in a selected undergraduate nursing college.

Study Population

The study population consisted of undergraduate B.Sc. Nursing students enrolled in the selected nursing college.

Sample Size

The illustrative study included **120 undergraduate nursing students**.

Sampling Technique

A convenient sampling technique was used for selection of participants.

Inclusion Criteria

Students who:

1. were enrolled in the B.Sc. Nursing programme;
2. were present during the period of data collection;
3. had completed the required maternal health nursing teaching relevant to the study;
4. were able to understand the questionnaire; and
5. were willing to participate.

Exclusion Criteria

Students who:

1. were absent during data collection;
2. were unwilling to participate; or
3. had previously participated in the pilot study.

DATA COLLECTION TOOLS

Section I: Demographic and Academic Characteristics

Information was collected regarding:

- age;
- gender;
- year of study;
- residence;
- previous clinical exposure to obstetric patients;
- previous exposure to high-risk pregnancy cases;
- participation in maternal health-related seminars; and
- previous health education or training related to high-risk pregnancy.

Section II: Knowledge Questionnaire

A structured 30-item questionnaire was used to assess knowledge regarding high-risk pregnancy.

The questionnaire covered:

- definition and concept of high-risk pregnancy;
- maternal risk factors;
- obstetric risk factors;
- fetal risk factors;
- medical conditions complicating pregnancy;

- pregnancy-induced hypertension;
- gestational diabetes;
- anemia;
- multiple pregnancy;
- antepartum hemorrhage;
- preterm labor;
- fetal distress;

- danger signs during pregnancy;
- antenatal assessment;
- referral;
- maternal and fetal monitoring; and
- preventive measures. Each correct response received a score of 1 and each incorrect or "don't know" response received a score of 0.

Maximum Score

30

Knowledge Score Interpretation

Score	Knowledge Level
0–10	Inadequate
11–20	Moderately adequate
21–30	Adequate

SECTION III: ATTITUDE SCALE

A structured five-point Likert-type attitude scale was used to assess students' attitudes regarding high-risk pregnancy.

The scale included statements related to:

- importance of early identification;
- need for regular antenatal care;
- importance of referral;
- role of nurses in high-risk pregnancy;
- importance of multidisciplinary care;
- communication with high-risk pregnant women;

- psychological support;
- clinical responsibility; and
- continuing education.

Responses were scored as:

- Strongly agree;
- Agree;
- Undecided;
- Disagree; and
- Strongly disagree.

The total attitude score was categorized as:

Score	Attitude Level
<50%	Unfavorable
50–75%	Moderately favorable
>75%	Favorable

VALIDITY AND RELIABILITY

The knowledge questionnaire and attitude scale were reviewed by experts in obstetric and gynecological nursing, community health nursing, medical-surgical nursing and nursing education to establish content validity.

Reliability testing was performed before the main study to determine the consistency of the instruments.

DATA COLLECTION PROCEDURE

Permission was obtained from the concerned institutional authority before data collection.

The investigator explained the purpose and procedure of the study to the participants. Written informed consent was obtained from all eligible students.

The demographic questionnaire, knowledge questionnaire and attitude scale were administered in a classroom setting. Adequate time was provided to complete the tools.

Completed questionnaires were collected, checked for completeness, coded and prepared for statistical analysis.

STATISTICAL ANALYSIS

The collected data were coded and analyzed using appropriate statistical software.

Descriptive statistics including frequency, percentage, mean and standard deviation were used.

The chi-square test was used to determine the association between knowledge/attitude levels and selected demographic and academic variables.

A p-value of <0.05 was considered statistically significant.

RESULTS

Table 1: Distribution of Undergraduate Nursing Students According to Selected Demographic and Academic Characteristics (N=120)

Variable	Category	Frequency (n)	Percentage (%)
Age	18–20 years	51	42.5
	21–23 years	58	48.3
	≥24 years	11	9.2
Gender	Female	101	84.2
	Male	19	15.8
Year of study	First year	30	25.0
	Second year	31	25.8
	Third year	30	25.0
	Fourth year	29	24.2
Previous clinical exposure	Yes	84	70.0
	No	36	30.0
Exposure to high-risk pregnancy cases	Yes	73	60.8
	No	47	39.2
Attended maternal health seminar/training	Yes	49	40.8

The majority of students were aged 21–23 years (48.3%) and female (84.2%). Seventy percent had previous clinical exposure to obstetric patients, while 60.8% had previous exposure to high-risk pregnancy cases.

Table 2: Distribution of Students According to Knowledge Level Regarding High-Risk Pregnancy (N=120)

Knowledge Level	Frequency (n)	Percentage (%)
Inadequate	24	20.0
Moderately adequate	69	57.5
Adequate	27	22.5
Total	120	100.0

The findings indicate that 57.5% of students had moderately adequate knowledge, while 22.5% had adequate knowledge and 20.0% had inadequate knowledge.

Table 3: Item-Wise Distribution of Students According to Knowledge Regarding High-Risk Pregnancy (N=120)

Knowledge Area	Correct Response n (%)	Incorrect Response n (%)
Concept of high-risk pregnancy	94 (78.3)	26 (21.7)
Maternal risk factors	87 (72.5)	33 (27.5)
Importance of antenatal care	105 (87.5)	15 (12.5)
Pregnancy-induced hypertension	82 (68.3)	38 (31.7)
Gestational diabetes	74 (61.7)	46 (38.3)
Anemia during pregnancy	91 (75.8)	29 (24.2)
Multiple pregnancy	78 (65.0)	42 (35.0)
Antepartum hemorrhage	69 (57.5)	51 (42.5)
Preterm labor	76 (63.3)	44 (36.7)
Danger signs during pregnancy	84 (70.0)	36 (30.0)
Need for timely referral	98 (81.7)	22 (18.3)
Maternal and fetal monitoring	88 (73.3)	32 (26.7)

Students demonstrated better knowledge regarding the importance of antenatal care and timely referral. Knowledge was comparatively lower regarding antepartum hemorrhage and gestational diabetes.

Table 4: Distribution of Students According to Attitude Towards High-Risk Pregnancy (N=120)

Attitude Level	Frequency (n)	Percentage (%)
Unfavorable	17	14.2
Moderately favorable	65	54.2
Favorable	38	31.7
Total	120	100.0

More than half of the students (54.2%) demonstrated a moderately favorable attitude, while 31.7% had a favorable attitude towards high-risk pregnancy.

Table 5: Association Between Year of Study and Knowledge Level (N=120)

Year of Study	Inadequate n (%)	Moderate n (%)	Adequate n (%)	χ^2	p-value
First year	11 (36.7)	16 (53.3)	3 (10.0)	13.28	0.004
Second year	7 (22.6)	19 (61.3)	5 (16.1)		
Third year	4 (13.3)	18 (60.0)	8 (26.7)		
Fourth year	2 (6.9)	16 (55.2)	11 (37.9)		

A statistically significant association was observed between year of study and knowledge level ($p=0.004$). Students in higher years demonstrated comparatively better knowledge.

Table 6: Association Between Previous Exposure to High-Risk Pregnancy Cases and Knowledge Level (N=120)

Previous Exposure	Inadequate n (%)	Moderate n (%)	Adequate n (%)	χ^2	p-value
Yes	10 (13.7)	42 (57.5)	21 (28.8)	12.24	0.002
No	14 (29.8)	27 (57.4)	6 (12.8)		

A statistically significant association was found between previous clinical exposure to high-risk pregnancy cases and knowledge level ($p=0.002$).

Table 7: Association Between Previous Exposure to High-Risk Pregnancy Cases and Attitude Level (N=120)

Previous Exposure	Unfavorable n (%)	Moderate n (%)	Favorable n (%)	χ^2	p-value
Yes	7 (9.6)	38 (52.1)	28 (38.4)	8.02	0.018
No	10 (21.3)	27 (57.4)	10 (21.3)		

A statistically significant association was observed between previous clinical exposure to high-risk pregnancy cases and attitude level ($p=0.018$).

DISCUSSION

The present study assessed knowledge and attitudes regarding high-risk pregnancy among undergraduate nursing students. The findings revealed that 57.5% of students had moderately adequate knowledge, while 20.0% had inadequate knowledge. The finding suggests that although students possess basic knowledge regarding high-risk pregnancy, some important clinical areas require further strengthening. In particular, knowledge regarding antepartum hemorrhage and gestational

diabetes was comparatively lower.

Nursing faculty should also encourage students to participate in antenatal clinics, labor wards and high-risk obstetric units under appropriate supervision. Structured reflection following clinical exposure may further improve students' understanding and attitudes.^{8,9,10}

CONCLUSION

The study concluded that the majority of undergraduate nursing students had moderately adequate knowledge and moderately favorable attitudes regarding high-risk pregnancy. Year of study was significantly associated with knowledge level, while previous clinical exposure to high-risk pregnancy

cases was significantly associated with both knowledge and attitude.

The findings indicate the need for strengthening maternal health nursing education through structured classroom teaching, clinical exposure, case-based learning and simulation-based training.

RECOMMENDATIONS

1. Similar studies should be conducted among nursing students using larger samples.
2. Multicentric studies may be conducted to improve generalizability.
3. Structured teaching programmes may be developed to improve knowledge regarding high-risk pregnancy.
4. Simulation-based learning may be incorporated into maternal health nursing education.
5. Nursing students should receive adequate supervised exposure to high-risk obstetric cases.
6. Further studies may assess the effectiveness of clinical teaching strategies on knowledge, attitude and clinical competency.
7. Longitudinal studies may be conducted to assess changes in students' knowledge and attitudes throughout the nursing programme.

NURSING IMPLICATIONS

Nursing Education

Maternal health nursing curricula should emphasize early identification of high-risk pregnancies, danger signs, appropriate referral and evidence-based nursing care.

Nursing Practice

Nursing students should be trained to recognize high-risk conditions and provide appropriate supportive care under supervision.

Nursing Administration

Nursing institutions should facilitate adequate clinical exposure to antenatal clinics, labor rooms and high-risk obstetric units.

Nursing Research

Further research should evaluate innovative teaching strategies such as simulation, case-based learning and problem-based learning for improving students' competency in high-risk pregnancy care.

LIMITATIONS

1. The study was conducted in a single nursing college.
2. Convenient sampling was used.
3. The study included a relatively small sample.
4. Knowledge and attitude were assessed using self-reported instruments.
5. The cross-sectional design does not establish a causal

relationship between clinical exposure and knowledge or attitude.

DECLARATIONS

Informed Consent

Written informed consent should be obtained from all participants.

Conflict of Interest

The authors declare no conflict of interest.

Funding

No external funding was received for the study.

Authors' Contribution

All authors should contribute appropriately to the conception, methodology, data collection, analysis, interpretation and preparation of the manuscript.

REFERENCES

1. World Health Organization. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: World Health Organization; 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. Antenatal care [Internet]. Geneva: World Health Organization; 2024 [cited 2026 Sep 1]. Available from: <https://www.who.int/health-topics/antenatal-care>
4. World Health Organization. WHO recommendations: intrapartum care for a positive childbirth experience. Geneva: World Health Organization; 2018.
5. Say L, Raine R. A systematic review of inequalities in the use of maternal health care in developing countries. Bull World Health Organ. 2007;85(10):812-819.
6. Kassebaum NJ, Barber RM, Bhutta ZA, Dandona L, Gething PW, Hay SI, et al. Global, regional, and national levels and causes of maternal mortality during 1990-2015. Lancet. 2016;388(10053):1775-1812.
7. Geller SE, Koch AR, Garland CE, MacDonald EJ, Storey F, Lawton B. A global view of severe maternal morbidity: moving beyond maternal mortality. Reprod Health. 2018;15(Suppl 1):98.
8. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller AB, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. Lancet Glob Health. 2014;2(6):e323-e333.
9. Tunçalp Ö, Pena-Rosas JP, Lawrie T, Bucagu M, Oladapo OT, Portela A, et al. WHO recommendations for routine antenatal care: a review of evidence and clinical guidelines. BMJ. 2017;356:i752.
10. World Health Organization. Trends in maternal mortality 2000 to 2020. Geneva: World Health Organization; 2023.

