

## Awareness of Warning Signs During Pregnancy Among Medical Students and Hospital Staff: A Cross-Sectional Questionnaire-Based Study

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### ABSTRACT

**Background:** Early recognition of obstetric danger signs is critical to reducing maternal morbidity and mortality. Healthcare students and hospital staff play a pivotal role in identifying and educating patients about these warning signs.

**Objective:** To assess awareness of warning signs during pregnancy among medical students and hospital staff in India.

**Methods:** A cross-sectional questionnaire-based study was conducted among 250 participants, including 100 MBBS students and interns, 50 BDS dental students, and 100 hospital staff (nurses and technicians). The study was carried out across two medical college hospitals, two dental colleges, two nursing colleges, and one private hospital. A structured 15-item Likert-scale questionnaire was used. Data were analyzed using descriptive and inferential statistics.

**Results:** Overall awareness was adequate in 68% of participants. MBBS students demonstrated the highest awareness (78%), followed by nurses (72%), while technicians (60%) and dental students (55%) showed comparatively lower awareness. Knowledge gaps were noted in recognizing symptoms such as blurred vision, reduced fetal movements, and severe abdominal pain.

**Conclusion:** Although general awareness is satisfactory, targeted educational interventions are required, especially for dental students and non-clinical staff, to improve early detection of obstetric complications.

**Keywords:** Pregnancy warning signs, maternal health, awareness, healthcare students, hospital staff, India

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### 1. INTRODUCTION

Maternal health remains a major public health concern, particularly in developing countries like India. According to the World Health Organization (WHO), a significant proportion of maternal deaths can be prevented through early recognition of obstetric danger signs.

Warning signs during pregnancy include:

- Severe vaginal bleeding
- Persistent headache
- Blurred vision
- Swelling of face and hands
- Reduced fetal movements
- Severe abdominal pain
- High fever

Healthcare providers, including students and hospital staff, are often the first point of contact for pregnant women. Their awareness and knowledge significantly influence early diagnosis and referral. This study aims to evaluate awareness levels among medical and paramedical personnel.

## **2. SPECIFIC OBJECTIVES**

### **Primary Objective**

- To assess awareness of warning signs during pregnancy among medical students and hospital staff.

### **Secondary Objectives**

- To compare awareness levels between different participant groups
- To identify specific knowledge gaps
- To recommend educational interventions

## **3. METHODOLOGY**

### **Study Design**

- Cross-sectional, questionnaire-based study

### **15-Item Validated Likert Scale Questionnaire**

**Response Options:** Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree

1. Vaginal bleeding during pregnancy is a danger sign.
2. Severe abdominal pain requires immediate medical attention.
3. Persistent headache may indicate complications in pregnancy.
4. Blurred vision is a warning sign of pregnancy complications.
5. Swelling of face and hands is abnormal in pregnancy.
6. Reduced fetal movement is a serious concern.
7. High fever during pregnancy is dangerous.
8. Convulsions during pregnancy are an emergency.
9. Severe vomiting can lead to complications.
10. Early detection of warning signs can prevent maternal deaths.
11. All healthcare staff should be trained in obstetric warning signs.
12. Dental professionals should be aware of pregnancy complications.

13. Nurses play a key role in identifying warning signs.
14. Technicians should recognize basic obstetric emergencies.
15. Awareness programs improve maternal health outcomes.

**Study Setting**

- 2 medical college hospitals
- 2 dental colleges
- 2 nursing colleges
- 1 private hospital in India

**Study Population**

- Total sample size: **250 participants**
  - 100 MBBS students and interns
  - 50 BDS dental students
  - 100 hospital staff (nurses and technicians)

**Inclusion Criteria**

- Students and staff willing to participate
- Individuals aged  $\geq 18$  years

**Exclusion Criteria**

- Incomplete questionnaire responses

**Ethical Considerations:** Not deemed to be necessary.

**Study Tool**

- Pre-validated **15-item Likert scale questionnaire**
- Response options: Strongly Agree to Strongly Disagree

**Data Collection Procedure**

- Institutional permissions obtained
- Informed consent taken
- Anonymous self-administered questionnaires distributed

**Statistical Analysis**

- Data analyzed using SPSS
- Descriptive statistics: percentages, mean scores
- Inferential statistics: Chi-square test
- Significance level:  $p < 0.05$

#### 4. RESULTS

##### Demographic Distribution

Group	Number	Percentage
MBBS Students & Interns	100	40%
BDS Students	50	20%
Hospital Staff	100	40%

##### Overall Awareness Levels

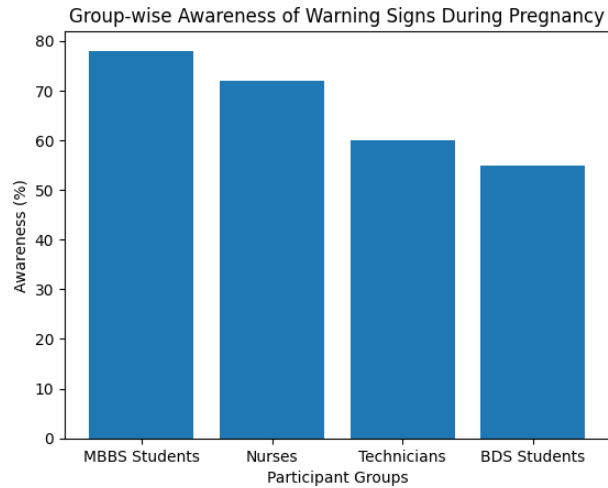
Category	Awareness (%)
High Awareness	68%
Moderate Awareness	22%
Low Awareness	10%

##### Group-wise Awareness

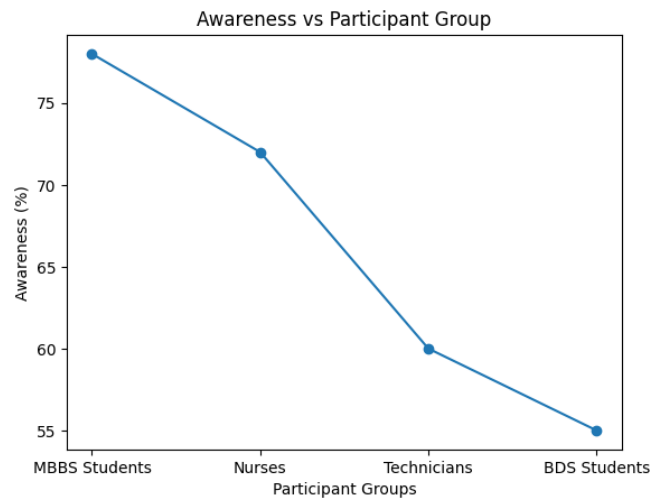
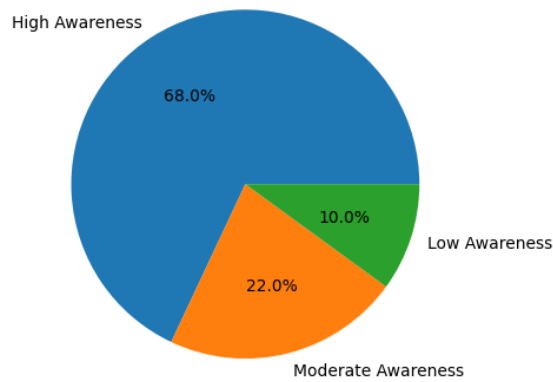
Group	High Awareness (%)
MBBS Students	78%
Nurses	72%
Technicians	60%
BDS Students	55%

##### Knowledge of Specific Warning Signs

Warning Sign	Correct Awareness (%)
Vaginal bleeding	90%
Severe headache	82%
Blurred vision	65%
Reduced fetal movement	62%
Severe abdominal pain	70%
Swelling of face/hands	68%



Overall Awareness of Warning Signs During Pregnancy



**Statistical Findings**

- Significant difference in awareness between MBBS students and BDS students ( $p < 0.05$ )
- Nurses performed significantly better than technicians

**5. DISCUSSION**

This study demonstrates that while overall awareness is acceptable, disparities exist among different groups. MBBS students showed higher awareness, likely due to clinical exposure. Nurses also performed well due to their involvement in patient care. However, dental students and technicians exhibited lower awareness, highlighting the need for interdisciplinary training. Similar findings have been reported in studies conducted in developing countries, where non-obstetric healthcare workers often lack adequate knowledge of maternal danger signs.

**6. STRENGTHS OF THE STUDY**

- Multi-institutional study design
- Inclusion of diverse healthcare groups
- Standardized questionnaire

**7. LIMITATIONS**

- Self-reported data may introduce bias
- Cross-sectional design limits causal inference
- Limited generalizability beyond study settings

**8. CONCLUSION**

Awareness of pregnancy warning signs among healthcare students and staff is moderately high but unevenly distributed. Focused training programs, especially for dental students and technicians, are essential to improve early detection and referral.

**9. RECOMMENDATIONS**

- Regular CME programs on maternal health
- Inclusion of obstetric emergency training in dental and paramedical curricula
- Simulation-based learning
- Awareness campaigns within hospitals

10. **CONFLICT OF INTEREST:** None declared.

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