

# Knowledge regarding high risk pregnancy among women in the reproductive age group from selected urban areas in a view to develop an information booklet

Ms. Priyanka Kumar Deshmukh<sup>1</sup>, Dr. Mrs. Supriya Pottal Ray<sup>2\*</sup>

<sup>1</sup>M.Sc. Nursing student Bharati Vidyapeeth (Deemed To Be) College of Nursing Pune, Maharashtra.

<sup>2</sup>Associate professor, of Bharati Vidyapeeth (Deemed To Be) college of Nursing, Pune. Maharashtra.

**\*Corresponding Author**  
Dr. Mrs. Supriya Pottal Ray

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## ABSTRACT

**Introduction:** High-risk pregnancy is defined as any gestation that increases the likelihood of adverse health outcomes for the mother, fetus, or both. Globally, maternal complications during pregnancy and labor remain a major cause of mortality, with India recording a high prevalence of high-risk pregnancies at 49.4%. Adequate knowledge regarding risk factors, warning signs, and preventive measures is essential to promote timely medical intervention and improve maternal and fetal outcomes. **Aim:** The study aimed to assess the knowledge regarding high-risk pregnancy among women in the reproductive age group from selected urban areas of Pune city, with the objective of developing a validated information booklet to enhance awareness. **Methodology:** A non-experimental exploratory research design was adopted. The study included 200 women aged 18–45 years selected through non-probability purposive sampling. Women with prior high-risk pregnancies or in the postnatal period were excluded. Data were collected using a self-structured, validated questionnaire consisting of 30 items. Knowledge scores were categorized as Poor (0–8), Average (9–16), Good (17–24), and Excellent (25–30). Demographic variables and prior knowledge were also recorded. **Results:**

Among participants, 71.5% had average knowledge, 20% had poor knowledge, and 8.5% demonstrated good knowledge regarding high-risk pregnancy. Significant associations were observed between knowledge levels and demographic variables including age, education, marital status, gravida, occupation, and prior knowledge. The developed information booklet, covering identification, risk factors, warning signs, prevention, and essential care practices, was validated with a Content Validity Index (CVI) of 0.803, indicating its reliability and relevance. **Conclusion:** The study highlights that while women possess basic awareness of high-risk pregnancy, knowledge gaps persist, particularly regarding specific risk factors and warning signs. Targeted educational interventions, including validated information booklets and community awareness programs, can enhance understanding, promote timely care, and potentially reduce maternal and neonatal morbidity and mortality.

**KEYWORDS:** High-risk pregnancy, reproductive-age women, knowledge assessment, maternal health, information booklet, Pune city.

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**How to Cite:** Ms. Priyanka Kumar Deshmukh, Dr. Mrs. Supriya Pottal Ray, (2025) Knowledge regarding high risk pregnancy among women in the reproductive age group from selected urban areas in a view to develop an information booklet, Vascular and Endovascular Review, Vol.8, No.7s, 73-77.

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## INTRODUCTION

All pregnancies carry inherent risks; however, a high-risk pregnancy is defined as any gestation that poses an increased likelihood of adverse health outcomes for the mother, the fetus, or both. Individuals experiencing high-risk pregnancies often require additional medical monitoring and interventions before, during, and after delivery to mitigate the potential for complications and to minimize their severity.<sup>1</sup>

It is important to note that classification, as a high-risk pregnancy does not necessarily imply that the mother or fetus will experience health problems. Many individuals with high-risk pregnancies achieve favorable outcomes, including healthy gestation, normal labor, and uncomplicated delivery, despite underlying medical conditions or other risk factors present during the prenatal period. Proper prenatal care, timely medical interventions, and close monitoring play a critical role in promoting positive maternal and fetal outcomes in such pregnancies.<sup>2</sup>

According worldwide, 20% of high risk pregnancy prevalence was recorded main cause of maternal mortality is complication arises in pregnancy and labor according to WHO 800 women die daily because of factors related pregnancy. 99% of these deaths occur in developing country.<sup>3</sup>

The prevalence of high-risk pregnancies among Indian women was 49.4%, with 33% of women having a single high-risk, and 16.4% having multiple high-risk pregnancies. Notably, pregnant women from Meghalaya and Manipur states had 67.8% and 66.7% with one or more high-risk factors, respectively. About 31.1% of women had short birth spacing, and 19.5% of women had adverse birth outcomes during the last birth. Logistic regression analysis showed that women with no education (adjusted odds ratio (AOR) = 2.02; 95% confidence interval (CI) = 1.84-2.22) and the poorest wealth quintile (AOR = 1.33; 95% CI = 1.04-

1.29) had significantly higher odds of having HRP than those with higher education and the highest wealth quintile, respectively.<sup>4</sup>

## NEED OF THE STUDY

High-risk-pregnancy place women and their children at the highest risk for mortality and morbidity. During pregnancy and childbirth increases pregnancy risk and complication because of maternal and medical risk. Among Indian women, high risk pregnancy, current prevalence, defined through various factors such as maternal lifestyle, medical current health risk and adverse birth outcome.<sup>5</sup>

Worldwide, maternal demise arises complication from pregnancy in 2017 labor were approximate at 211 /100000. Representing worlds maternal death record in the last many years among Indian women approximate 1.3 million maternal death. In India high risk prevalence rate is 49.4%. In Maharashtra high- risk- pregnancy prevalence rate is 47.7%. Based on sample registration system the maternal mortality ratio (MMR) has decreased from 113 death per 100000 live birth between 2016 to 2018 to 103 death per 100000 live birth between 2017 and 2019. The maximum maternal death arising age 2020 to 2029 years.<sup>1</sup> The unfavorable maternal health indicators are directly connected to pregnancy, related morbidities and mortality. Factors such as excessive bleeding (47.0%), maternal health problems(19.6%), pyemia (12.0%) gestational hypertension (7.0%) and termination of pregnancy (5.0%), where the primary reason of maternal death in India.<sup>6,7</sup> This are the main reasons for maternal high risk pregnancy rate in India ,a strategic approach on reproductive, maternal, newborn, child and adolescent health has been initiated to address the primary causes of maternal deaths. However, India distant from achieving the sustainable development goal of decline maternal death below 70 / 1,00,000 live births by 2030.<sup>8,9</sup>

High-risk pregnancies pose significant risks to both mother and fetus, contributing to maternal and neonatal morbidity and mortality. Many women in the reproductive age group, especially in urban areas, may lack adequate knowledge about the signs, risk factors, and preventive measures associated with high-risk pregnancy. Assessing their knowledge is essential to identify gaps and provide targeted education. This study was chosen to explore the awareness level among women, which will help in designing an effective information booklet. Such a tool can empower women with essential knowledge, promote early identification of risks, and support timely medical intervention for better maternal and fetal outcomes.

## AIM OF THE STUDY

This study aim was assess the knowledge regarding high-risk pregnancy among women in the reproductive age group from selected urban areas in a view to develop an information booklet.

## MATERIAL AND METHODS

Non Experimental exploratory research design was adopted for the study. Research variable under study is research variable knowledge regarding high risk pregnancy. Selected Women in the reproductive age group from selected areas of Pune city. Women in the reproductive age groups (18 to 45) years was inclusion criteria, in the exclusion criteria women who have had a high risk pregnancy and women in the postnatal period was excluded. Sample size was 200 women in the reproductive age group. The sample selection method adopted was Non probability Purposive sampling.

Demographic variables consisted of age, education, marital status, gravida, parity, no of abortion, occupation, previous knowledge regarding high risk pregnancy. The self-structured questionnaire was prepared based on knowledge regarding high risk pregnancy among women in the reproductive age group which was validated through various experts and reliability was also conducted for stability and consistency. The questionnaire consisted 30 questions. From each sample consent was taken, Poor score was – 0-8, Average- 9-16, Good- 17-24, Excellent- 25-30.

## RESULT

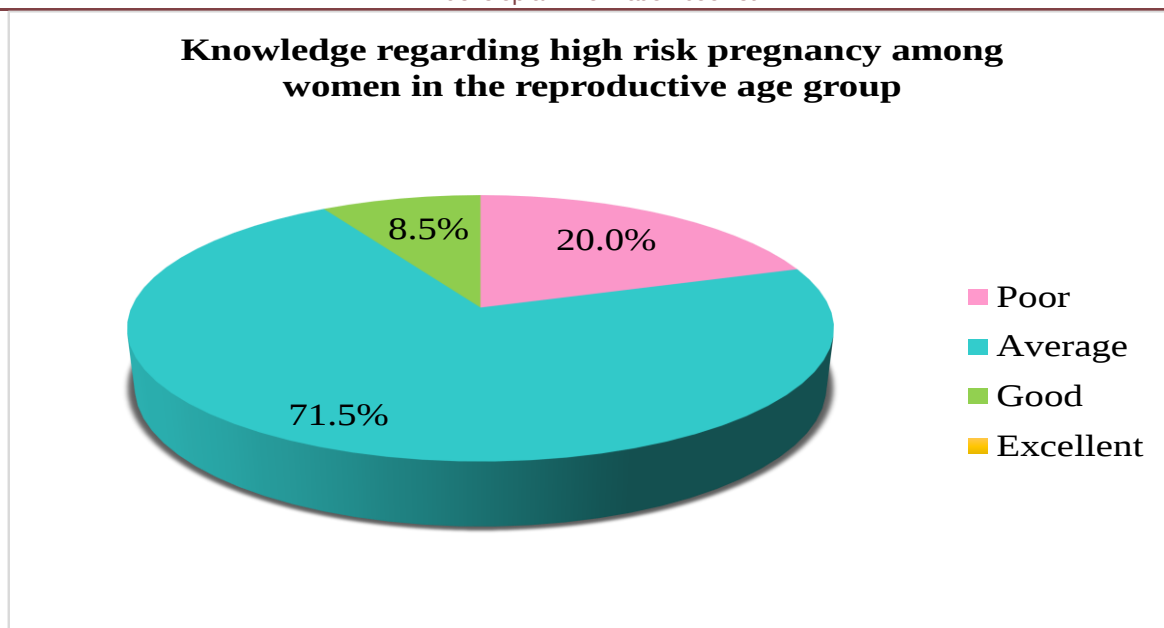
### Section I: Description of reproductive age group women based on their personal characteristics

The majority (40%) were in the 39–45 years age group, indicating that a significant portion of participants were in the later reproductive years. Regarding education, most women (45%) had primary education, suggesting a need for accessible health information. A large proportion (82%) were married, and more than half (52.5%) were multigravida, with the highest parity being two children (38.5%). Most women (84.5%) had no history of abortion. In terms of occupation, nearly half (45%) were homemakers. Over half (53.5%) of women had no prior knowledge of high-risk pregnancy, with family members being the most common information source (28%).

### Section II: Analysis of data related to overall knowledge regarding high risk pregnancy among women in the reproductive age group from selected areas of Pune city.

Table no 1

| Knowledge Level | Frequency (n) | Percentage (%) |
|-----------------|---------------|----------------|
| Poor            | 40            | 20             |
| Average         | 143           | 71.5           |
| Good            | 17            | 8.5            |
| Total           | 200           | 100            |



**Fig no1 : pie chart represent the knowledge regarding high risk pregnancy among women in the reproductive age group**

Fig no. 1 depicted that 20% of the women in reproductive age group had poor knowledge, 71.5% of them had average knowledge and 8.5% of them had good knowledge regarding high-risk pregnancy.

**Section III: Item wise analysis of knowledge regarding high risk pregnancy among women in the reproductive age group from selected areas of Pune city**

**Table 2: Frequency and percentage of knowledge item analysis  
n-200**

| Knowledge item                                                                               | Yes  |       | No   |       | Don't know |       |
|----------------------------------------------------------------------------------------------|------|-------|------|-------|------------|-------|
|                                                                                              | Freq | %     | Freq | %     | Freq       | %     |
| All pregnancies can turn into high risk if proper antenatal care is not taken                | 175  | 87.5% | 25   | 12.5% | 0          | 0.0%  |
| Complications during pregnancy can be detected before the onset                              | 167  | 83.5% | 33   | 16.5% | 0          | 0.0%  |
| Height of women measuring below 150 cms is classified as high risk                           | 120  | 60.0% | 80   | 40.0% | 0          | 0.0%  |
| Obesity can be classified in the category of high-risk pregnancy                             | 111  | 55.5% | 89   | 44.5% | 0          | 0.0%  |
| Weight gain of above 1 kg per month from the first month of pregnancy is normal              | 78   | 39.0% | 72   | 36.0% | 50         | 25.0% |
| It is fine if the previous medical history of antenatal women is not known                   | 75   | 37.5% | 65   | 32.5% | 60         | 30.0% |
| Family history is of importance to rule out high risk pregnancy                              | 92   | 46.0% | 108  | 54.0% | 0          | 0.0%  |
| Excessive vomiting in the first trimester is a sign of normal growth & development of fetus. | 118  | 59.0% | 46   | 23.0% | 36         | 18.0% |
| Daily fetal movement count in a one day 8 to 10 is considered to be normal                   | 77   | 38.5% | 123  | 61.5% | 0          | 0.0%  |
| If the mother has history of smoking it is considered as high-risk pregnancy                 | 77   | 38.5% | 123  | 61.5% | 0          | 0.0%  |
| Swelling over the ankle & feet is a danger sign which can complicate pregnancy               | 78   | 39.0% | 122  | 61.0% | 0          | 0.0%  |
| Severe abdominal pain in the second trimester is a normal sign of pregnancy                  | 123  | 61.5% | 47   | 23.5% | 30         | 15.0% |
| Burning micturition anytime during pregnancy should be reported as early as possible         | 55   | 27.5% | 145  | 72.5% | 0          | 0.0%  |
| Bleeding during the first three months is considered as normal sign in pregnancy             | 130  | 65.0% | 50   | 25.0% | 20         | 10.0% |
| Sudden fainting is a sign of high-risk pregnancy                                             | 66   | 33.0% | 134  | 67.0% | 0          | 0.0%  |

|                                                                                |    |       |     |       |   |      |
|--------------------------------------------------------------------------------|----|-------|-----|-------|---|------|
| Breathing with effort is normal during third trimester                         | 73 | 36.5% | 121 | 60.5% | 6 | 3.0% |
| High blood pressure if detected in antenatal period is classified as high risk | 72 | 36.0% | 128 | 64.0% | 0 | 0.0% |

| Knowledge item                                                                              | Yes  |       | No   |       | Don't know |       |
|---------------------------------------------------------------------------------------------|------|-------|------|-------|------------|-------|
|                                                                                             | Freq | %     | Freq | %     | Freq       | %     |
| Labour pain or leaking from vagina before 9 months of pregnancy is considered as high risk. | 65   | 32.5% | 135  | 67.5% | 0          | 0.0%  |
| Fever during pregnancy can be treated at home                                               | 142  | 71.0% | 48   | 24.0% | 10         | 5.0%  |
| Conception below 18 years and above 35 years is classified as high risk                     | 73   | 36.5% | 127  | 63.5% | 0          | 0.0%  |
| Women can deliver above 5 babies throughout her lifetime without any risk                   | 111  | 55.5% | 39   | 19.5% | 50         | 25.0% |
| It is normal for the blood sugar to rise above normal during pregnancy                      | 112  | 56.0% | 58   | 29.0% | 30         | 15.0% |
| Preexisting Cardiac diseases & renal diseases is a risk factor during pregnancy             | 77   | 38.5% | 123  | 61.5% | 0          | 0.0%  |
| Under nutrition is not a cause of worry during pregnancy                                    | 128  | 64.0% | 36   | 18.0% | 36         | 18.0% |
| Anemia during pregnancy is classified as high risk.                                         | 83   | 41.5% | 117  | 58.5% | 0          | 0.0%  |
| Twin pregnancy is not a risk during pregnancy                                               | 72   | 36.0% | 128  | 64.0% | 0          | 0.0%  |
| Previous history of IUD is considered as high risk                                          | 74   | 37.0% | 126  | 63.0% | 0          | 0.0%  |
| If the baby's weight is less as compared to the during pregnancy it is not a cause of worry | 75   | 37.5% | 125  | 62.5% | 0          | 0.0%  |
| Previous Caesarean Section is not a risk for the present pregnancy                          | 162  | 81.0% | 38   | 19.0% | 0          | 0.0%  |
| If parents have different blood groups it will be risk factor for present pregnancy         | 100  | 50.0% | 96   | 48.0% | 4          | 2.0%  |

The assessment of knowledge regarding high-risk pregnancy among women indicated that most participants were aware of common risk factors and warning signs. The majority correctly recognized that all pregnancies can become high-risk without proper antenatal care (87.5%), complications can be detected early (83.5%), and previous Caesarean section is a risk factor (81%). They also understood that fever during pregnancy requires medical attention (71%). However, gaps were observed in knowledge related to weight gain, maternal age, multiple deliveries, and certain warning signs such as fainting, smoking, or breathing difficulties, with correct responses ranging between 33% and 55%

#### **Section IV: Analysis of data related to the association of knowledge among women in reproductive age regarding high-risk pregnancy with selected demographic variables**

Since p-values corresponding to demographic variables age, education, marital status, gravida, occupation and previous knowledge regarding high-risk pregnancy were small (less than 0.05), the demographic variables age, education, marital status, gravida, occupation and previous knowledge regarding high risk pregnancy were found to have significant association with the knowledge of women in reproductive age group regarding high-risk pregnancy.

#### **Section V: validation of information booklet**

Information booklet is made on identification and care of high risk pregnancy in that included introduction, what is high risk pregnancy, factor , warning signs , prevention of high risk pregnancy and things one should know.

The expert CVI was 0.803 that indicates the information booklet was valid.

## **DISCUSSION**

The assessment of knowledge regarding high-risk pregnancy among women in the reproductive age group from selected areas of Pune city revealed that the majority of participants possessed average knowledge, with 71.5% demonstrating this level of understanding. Only 8.5% of the women had good knowledge, while 20% showed poor knowledge, indicating that there is room for improvement in educating women about the factors, warning signs, and preventive measures related to high-risk pregnancies. This finding is consistent with a study conducted by Borude et al. (2025), which assessed the knowledge regarding early identification of high-risk pregnancy among women residing in selected areas of Pune city. That study emphasized the importance of early detection and proper antenatal care in reducing maternal and fetal complications, highlighting that adequate knowledge among women plays a key role in preventing adverse pregnancy outcomes.<sup>10</sup>

In the present study, an information booklet was developed to provide structured education on high-risk pregnancies. The booklet included comprehensive sections such as an introduction to high-risk pregnancy, associated factors, warning signs, preventive

measures, and essential care practices. The content of the booklet was evaluated by experts, and the Content Validity Index (CVI) was found to be 0.803, indicating that the booklet is a valid and reliable tool for improving knowledge among women. The use of such educational materials can be instrumental in bridging knowledge gaps, especially in areas where awareness regarding maternal health is limited.

Overall, the findings suggest that while women have basic knowledge about high-risk pregnancy, targeted educational interventions such as validated information booklets, awareness programs, and counseling sessions are essential to enhance their understanding further. Improving knowledge not only empowers women to seek timely medical care but also contributes to reducing maternal and neonatal morbidity and mortality. Hence, integrating such educational strategies into community health programs can play a significant role in promoting maternal and child health in Pune city and similar settings.

## CONCLUSION

The present study was carried out to assess the knowledge regarding high risk pregnancy among women in the reproductive age group from selected areas of Pune city. The findings showed majority (71.5%) having average knowledge regarding high risk pregnancy among reproductive age group of women, (8.5%) having good knowledge and (20.0%) having poor knowledge.

Association between level of knowledge and demographic characteristics result shows there were significant association age, education, marital status, gravida, occupation and previous knowledge regarding high risk pregnancy were found to have significant association with the knowledge of women in reproductive age group regarding high-risk pregnancy.

Hence after that researcher has developed information booklet to update their knowledge regarding high risk pregnancy. Information booklet is made on identification and care of high risk pregnancy in that included introduction, what is high risk pregnancy, factor, warning signs, prevention of high risk pregnancy and things one should know.

These findings are supported by a similar study conducted on 150 women using simple random sampling technique. In that study, 42.0% half of sample had a average knowledge about high risk pregnancy, 22.7% had good knowledge regarding high risk pregnancy and 35.3% had poor knowledge regarding high risk pregnancy. Association between level of knowledge and demographic characteristics result shows there were significant association education, occupation and level of knowledge toward high risk pregnancy.

**Authors Contribution:** - The complete study was carried by Ms. Priyanka Kumar Deshmukh under the guidance of Mrs. Dr. Mrs. Supriya Pottal Ray The corresponding author for this study is Ms. Priyanka Deshmukh.

**Conflict of Interest:** - None to declare

**Statement on human right:** - This study is approved by Institutional Ethics committee, Bharati Vidyapeeth (Deemed To Be University), College Of Nursing, Informed consent was taken from each participant's voluntary participation was the key to sample selection.

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