

ANTENATAL MATERNAL HEALTH: KNOWLEDGE OF PIH AND PREVALENCE OF HIGH-RISK PREGNANCIES — A NARRATIVE SYSTEMATIC REVIEW

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Abstract: Background: Antenatal maternal health remains a critical public health concern in developing countries, particularly in India. Two major threats — Pregnancy Induced Hypertension (PIH) and high-risk pregnancies — contribute significantly to maternal and perinatal morbidity and mortality. Understanding the knowledge gaps among antenatal mothers and the prevalence of high-risk factors is essential for designing effective interventions.

Objectives: To synthesize evidence from two primary studies: (1) assessment of knowledge on PIH among antenatal mothers, and

(2) assessment of the prevalence of high-risk pregnancies among antenatal mothers attending OPD settings.

Review Methodology: A narrative systematic review was conducted incorporating two peer-reviewed descriptive studies — Vinoba et al. (2018) from VMMCH Karaikal (n=40) and Rupali & Rana Banita (2019) from Civil Hospital Nurgpur, Kangra (n=100). Data were extracted on study design, sample, tools, findings, and associations.

Key Findings: 36% of antenatal mothers had inadequate knowledge of PIH; only 30% had adequate knowledge, with significant associations found with age, education, and occupation. In the high-risk pregnancy study, 36% of antenatal mothers had anaemia as the most common present pregnancy factor; 100% were in the 18–35 age group, and significant associations were noted with residence, type of family, and expected place of delivery.

Conclusion: Both studies highlight persistent knowledge deficits and high-risk conditions among antenatal mothers in community hospital settings. Structured teaching interventions, IEC packages, and targeted antenatal care programmes are essential to bridge knowledge gaps and reduce the burden of high-risk pregnancies.

Categories: Obstetrics and Gynecology; Maternal Health; Community Nursing

Keywords: Pregnancy Induced Hypertension; High-Risk Pregnancy; Antenatal Mothers; Knowledge Assessment; Prevalence; Maternal Health; OPD

I. INTRODUCTION

Pregnancy is one of the most significant physiological events in a woman's life. While most pregnancies progress normally, a subset of pregnant women face serious complications that threaten their wellbeing and that of their unborn children. Among these, Pregnancy Induced Hypertension (PIH) — encompassing preeclampsia and eclampsia — and a wide spectrum of high-risk pregnancy conditions, represent major contributors to maternal and perinatal morbidity and mortality in developing nations.

In India, hypertensive disorders of pregnancy are among the leading causes of maternal deaths, alongside haemorrhage, sepsis, and anaemia. PIH, formerly known as toxemia, affects an estimated 3–5% of all pregnant women globally (Rove et al., 2005). WHO estimates indicate that India bears the highest absolute burden of maternal deaths of any single country — approximately 36,000 per year, constituting 25.7% of the 529,000 global maternal deaths annually. High-risk pregnancies, defined as those in which pre-existing or emerging conditions threaten the normal course of development or birth, further compound this burden.

Given the high prevalence of both conditions and the documented gap in maternal health literacy in community settings, two primary studies examining antenatal health in hospital outpatient departments were selected for systematic synthesis: Vinoba et al. (2018), which assessed knowledge of PIH among antenatal mothers in Karaikal, Tamil Nadu; and Rupali & Rana Banita (2019), which examined the prevalence of high-risk pregnancies in Nurgpur, Himachal Pradesh. Together, these studies provide a representative picture of the antenatal health landscape in semi-urban and rural Indian hospital settings.

II. OBJECTIVES

- To synthesize current evidence on the level of knowledge regarding PIH among antenatal mothers attending hospital OPD settings.
- To assess and summarize the prevalence of high-risk conditions among antenatal mothers attending antenatal outpatient departments.
- To identify significant associations between knowledge/prevalence and demographic variables.
- To recommend evidence-based interventions for improving maternal health knowledge and antenatal care.

III. REVIEW METHODOLOGY

This narrative systematic review synthesizes data from two peer-reviewed primary studies published in indexed Indian nursing and medical research journals. The studies were selected based on the following inclusion criteria: descriptive research design, study population comprising antenatal mothers attending hospital OPD settings in India, published between 2018 and 2019, and use of validated/structured tools for data collection.

Study 1: Vinoba J, Sridevi R, Ruba A. (2018). A Descriptive Study to Assess the Knowledge on Pregnancy Induced Hypertension among Antenatal Mothers Attending OG OPD at VMMCH, Karaikal. International Journal of Research and Review. Vol. 5(12):23–25. Sample size: 40 antenatal mothers. Tool: Structured knowledge questionnaire (25 items). Sampling: Simple random sampling.

Study 2: Rupali & Rana Banita. (2019). Descriptive Study to Assess the Prevalence of High Risk Pregnancies among Antenatal Mothers Attending Antenatal OPD of Selected Hospital of Nurpur, Distt. Kangra. International Journal of Scientific Research. Vol. 8(2):66–67. Sample size: 100 antenatal mothers. Tool: Modified High Risk Pregnancy Scale (24 conditions, 4 domains). Sampling: Convenient sampling.

Data were extracted using a structured format covering: study design, setting, population, sample size, sampling technique, data collection tool, scoring criteria, major findings, associations, and recommendations. Descriptive and inferential statistics from the original studies were utilized for synthesis. Ethical standards including confidentiality and informed consent were maintained in both primary studies.

IV. STUDY SUMMARIES

Study 1: Knowledge on PIH among Antenatal Mothers (Vinoba et al., 2018)

This descriptive study was conducted at the Obstetrics and Gynecology OPD of Vinayaka Mission's Medical College and Hospital (VMMCH), Karaikal. Forty antenatal mothers were selected via simple random sampling. A structured knowledge questionnaire comprising 25 closed-ended items was administered. Knowledge was categorized as adequate (76–100%), moderately adequate (51–75%), and inadequate (0–50%).

Demographic profile: The majority (46%) were in the 26–30 age group, followed by 28% in the 21–25 group. Most mothers (46%) had secondary education, while 34% had higher secondary or above. A total of 64% were homemakers, 62% belonged to nuclear families, and 56% had prior exposure to information about PIH.

Knowledge distribution: 36% of mothers had inadequate knowledge of PIH; 34% had moderate knowledge; and only 30% demonstrated adequate knowledge. Significant statistical associations ($p < 0.05$) were found between knowledge levels and demographic variables including age, educational status, and occupational status.

Study 2: Prevalence of High-Risk Pregnancies (Rupali & Rana Banita, 2019)

This non-experimental descriptive study was conducted at the Civil Hospital, Nurpur, District Kangra, Himachal Pradesh. One hundred antenatal mothers attending the antenatal OPD were enrolled through convenient sampling. Data were collected using the Modified High Risk Pregnancy Scale — a validated tool assessing 24 high-risk conditions across four domains: Reproductive Health Factors, Past Obstetrical History, Present Pregnancy Factors, and Associated Medical Conditions. Tool reliability was established at $r = 0.9$ using Karl Pearson's Coefficient Correlation (split-half method).

Demographic profile: All 100% of mothers were in the 18–35 age group. The majority (77%) were from rural areas and 82% belonged to joint families. Most mothers (86%) were homemakers and 55% followed a vegetarian diet. The modal educational category was senior secondary (37%). Maximum family income fell in the Rs. 10,001–15,000 range (42%). Notably, 100% of mothers planned institutional delivery.

Table 1: Summary of High-Risk Pregnancy Findings by Domain (Rupali & Rana Banita, 2019)

V. KEY FINDINGS AND SYNTHESIS

Across both studies, a consistent pattern emerges: a substantial proportion of antenatal mothers in semi-urban and rural Indian hospital settings possess inadequate knowledge of obstetric complications and carry identifiable high-risk conditions that require targeted intervention.

In Study 1, the predominance of inadequate knowledge (36%) over adequate knowledge (30%) is clinically significant. Given that PIH — encompassing preeclampsia and eclampsia — is one of the leading causes of maternal death, insufficient maternal awareness of its warning signs, self-care measures, and the need for timely medical attention directly translates to delayed care-seeking and worse outcomes. The significant association between knowledge levels and educational status underscores the pivotal role of maternal literacy in health awareness.

In Study 2, anaemia emerged as the single most prevalent high-risk condition in the present pregnancy domain (36%), consistent with national trends and the high burden of iron deficiency in rural India. The fact that 52% of participants were nulliparous, and 20% had a history of previous caesarean sections, highlights the obstetric vulnerability of the study population. The significant associations between high-risk prevalence and residence (rural vs. urban), family type, and expected place of delivery point to the critical influence of social determinants of health on obstetric outcomes.

Together, these findings demonstrate the urgent need for structured health education interventions, strengthened antenatal care, and targeted IEC (Information, Education, Communication) programmes in community hospital settings.

Table 2: Summary of Key Included Studies

VI. RECOMMENDATIONS

- Structured teaching interventions and IEC packages should be routinely administered to antenatal mothers after assessing their baseline knowledge of PIH and high-risk conditions.
- Health literacy campaigns targeting rural women with secondary education or below should be prioritized, as these groups demonstrated the highest rates of inadequate knowledge.
- Anaemia prevention and management must be integrated as a frontline antenatal care priority, given its prevalence as the leading high-risk factor in present pregnancies.
- Follow-up studies should assess the effectiveness of educational interventions on self-care practices of PIH and high-risk mothers in their home environments.
- Comparative studies between primipara and multipara mothers, and between rural and urban settings, are warranted to tailor interventions more precisely.
- The high rate of nulliparity (52%) and prior caesarean section (20%) necessitates individualized birth planning and timely obstetric counselling.
- Studies on larger samples across multiple OPD settings are recommended to improve generalizability of findings.

VII. LIMITATIONS

This review carries inherent limitations arising from its primary sources. Both studies utilized convenient or simple random sampling from single hospital settings, limiting generalizability to the broader antenatal population. Study 1 (n=40) had a small sample size that restricts statistical power. The cross-sectional descriptive design of both studies precludes causal inference. Recall bias in self-reported demographic and obstetric history data may have influenced findings in Study 2. Additionally, the knowledge questionnaire in Study 1 was self-administered, which may introduce response bias. Geographic restriction to single districts (Karaikal and Nulpur) limits applicability to other regions of India with different sociodemographic profiles.

VIII. DISCLOSURES

The authors confirm that there are no financial relationships, affiliations, or conflicts of interest that could have influenced the conduct or conclusions of this review. This narrative systematic review was prepared solely for academic and clinical educational purposes. All data presented are drawn from publicly available peer-reviewed primary sources, and full attribution has been provided. The findings are presented impartially based on the evidence available in the included studies.

IX. CONCLUSIONS

This narrative systematic review synthesizing two primary descriptive studies conducted in Indian antenatal outpatient settings arrives at the following key conclusions:

- A majority of antenatal mothers lack adequate knowledge of Pregnancy Induced Hypertension — the most serious hypertensive complication of pregnancy — creating a critical vulnerability in maternal health literacy.
- Anaemia is the most prevalent high-risk condition in the present pregnancy domain, affecting over one-third of antenatal mothers sampled, consistent with national epidemiological data.
- Demographic variables — particularly educational status, age, occupation, residence, and family type — significantly moderate both knowledge levels and high-risk prevalence, confirming the role of social determinants in obstetric outcomes.
- Structured teaching, IEC packages, partograph use, and targeted antenatal screening must be institutionalized as standard practice in hospital OPD settings.
- Addressing knowledge deficits and identifying high-risk pregnancies early remain the most cost-effective and impactful strategies to reduce preventable maternal and perinatal morbidity and mortality in resource-limited settings.

The burden of PIH-related deaths and high-risk pregnancy complications in India is substantially preventable through timely education, early screening, and evidence-based antenatal care — provided these interventions reach the most vulnerable antenatal populations in community hospital settings.

REFERENCES

- [1] Vinoba J, Sridevi R, Ruba A. A descriptive study to assess the knowledge on pregnancy induced hypertension among antenatal mothers attending OG OPD at VMMCH, Karaikal. *International Journal of Research and Review*. 2018;5(12):23-25.
- [2] Rupali, Rana Banita. Descriptive study to assess the prevalence of high risk pregnancies among antenatal mothers attending antenatal outpatient department of selected hospital of Nurpur, Distt. Kangra. *International Journal of Scientific Research*. 2019;8(2):66-67.
- [3] World Health Organization. Maternal Mortality. WHO Fact Sheet; 2023. [4] Rove S et al. Pre-eclampsia: epidemiology and clinical features. 2005.
- [5] Soya L et al. Hypertensive disorders of pregnancy: maternal and fetal consequences. 2005.
- [6] Annamma Jacob. A Comprehensive Textbook of Midwifery and Gynaecological Nursing. 4th ed. Jaypee Brothers; pp. 331-340.
- [7] Myles. A Textbook for Midwives. 15th ed. Elsevier; pp. 398-406.
- [8] Mudaliar and Menon. A Textbook of Clinical Obstetrics. 10th ed. Orient Longman; pp. 151-158.

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