

A Study to Assess the Effectiveness of Antenatal Education on Pregnancy Outcomes among First-Time Mothers in Selected Maternity Hospitals

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Abstract

Introduction : Antenatal education is an essential component of maternal healthcare aimed at improving pregnancy outcomes. It provides first-time mothers with knowledge and skills necessary for labor, delivery, and postpartum care. Despite its known benefits, antenatal education is not uniformly accessible, leading to disparities in maternal and neonatal health outcomes.

Methodology : A prospective cohort study was conducted in selected maternity hospitals. A total of 100 first-time mothers were recruited, with 50 receiving structured antenatal education and 50 serving as a control group. Data were collected using structured questionnaires and medical records. Pregnancy outcomes, including mode of delivery, labor duration, neonatal birth weight, APGAR scores, and maternal preparedness, were analyzed using SPSS software.

Results : Mothers who received antenatal education had higher rates of vaginal delivery (70% vs. 50%, $p < 0.05$), shorter labor duration (8 vs. 12 hours, $p < 0.05$), and better neonatal health indicators such as higher birth weight (3.2 kg vs. 2.8 kg, $p < 0.05$) and improved APGAR scores. Additionally, antenatal education significantly increased maternal preparedness and awareness of danger signs, leading to better health-seeking behavior.

Conclusions : Antenatal education plays a crucial role in improving pregnancy outcomes. Structured education programs should be widely implemented in maternity hospitals to enhance maternal and neonatal health.

Keywords : Antenatal education, Pregnancy outcomes, Maternal health, Neonatal health, First-time mothers.

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Introduction

Antenatal education plays a vital role in preparing first-time mothers for childbirth and postpartum care. It encompasses a range of topics, including prenatal health, labor and delivery, newborn care, and maternal well-being. The World Health Organization (WHO) emphasizes that comprehensive antenatal education can significantly improve maternal and neonatal health outcomes¹. Despite its benefits, many first-time mothers do not receive adequate education, leading to increased anxiety, complications during delivery, and poor neonatal health².

The transition to motherhood is a critical period that requires adequate support and guidance³. Studies have shown that antenatal education enhances maternal confidence, reduces labor anxiety, and increases knowledge about childbirth procedures⁴. Additionally, it provides an opportunity for healthcare professionals to identify high-risk pregnancies early and implement necessary interventions⁵.

One of the major aspects of antenatal education is birth preparedness. This includes awareness of danger signs, knowledge about facility-based delivery, and readiness with essential items for childbirth⁶. Women who are well-informed about their pregnancy tend to make better healthcare decisions and are more likely to seek skilled birth attendance⁷. Moreover, antenatal education improves partner involvement, leading to better emotional and physical support during labor⁸.

Despite these advantages, several barriers prevent women from accessing antenatal education. These include lack of awareness, socio-economic constraints, and inadequate healthcare infrastructure⁹. In low-resource settings, women may rely on traditional practices that may not always align with evidence-based guidelines¹⁰. Hence, integrating structured antenatal programs into maternal healthcare services is crucial¹¹.

Furthermore, digital platforms are emerging as effective tools for delivering antenatal education¹². Mobile applications and online courses provide flexible learning opportunities, especially for women with limited access to healthcare facilities¹³. These technological advancements complement conventional face-to-face education and improve knowledge retention¹⁴.

Given the significance of antenatal education, this study aims to assess its effectiveness in improving pregnancy outcomes among first-time mothers in selected maternity hospitals. The

findings will contribute to evidence-based recommendations for enhancing maternal healthcare policies¹⁵.

Objectives

1. To evaluate the impact of antenatal education on mode of delivery and labor duration.
2. To assess the influence of antenatal education on neonatal birth weight and APGAR scores.
3. To determine the role of antenatal education in improving maternal knowledge and preparedness for labor and postpartum care.
4. To compare the prevalence of pregnancy complications between educated and non-educated mothers.

Hypothesis

Null Hypothesis (H0) : Antenatal education has no significant effect on pregnancy outcomes among first-time mothers.

Alternative Hypothesis (H1) : Antenatal education significantly improves pregnancy outcomes among first-time mothers.

Methodology

Study Design : A prospective cohort study was conducted in selected maternity hospitals.

Sample : first-time mothers

Sample size : 100

Study Population : The study included 100 first-time mothers, with 50 receiving structured antenatal education and 50 not receiving formal education.

Sampling techniques : A stratified random sampling method was used to select participants. First-time mothers attending antenatal clinics were screened for eligibility, and those meeting the inclusion criteria were enrolled. Participants were divided into two groups: those receiving structured antenatal education and those who did not.

Setting of the study : SVBP Hospital, Meerut

Inclusion Criteria

1. First-time mothers aged 18-35 years.
2. Singleton pregnancies.
3. Mothers attending antenatal visits at selected hospitals.

Exclusion Criteria

1. Mothers with pre-existing medical conditions affecting pregnancy.
2. High-risk pregnancies requiring specialized care.

Data Collection

Structured questionnaires were used to assess maternal knowledge and preparedness. Pregnancy outcomes, including mode of delivery, labor duration, neonatal birth weight, and APGAR scores, were recorded from medical records.

Statistical Analysis

Data were analyzed using SPSS software. Chi-square tests and logistic regression were used to assess associations between antenatal education and pregnancy outcomes.

Results

Table 1: Impact of Antenatal Education on Pregnancy Outcomes

Pregnancy Outcome	Educated Mothers (n=50)	Non-Educated Mothers (n=50)	p-value
Vaginal Delivery (%)	70%	50%	<0.05
Cesarean Section (%)	30%	50%	<0.05
Labor Duration (Mean Hours)	8	12	<0.05

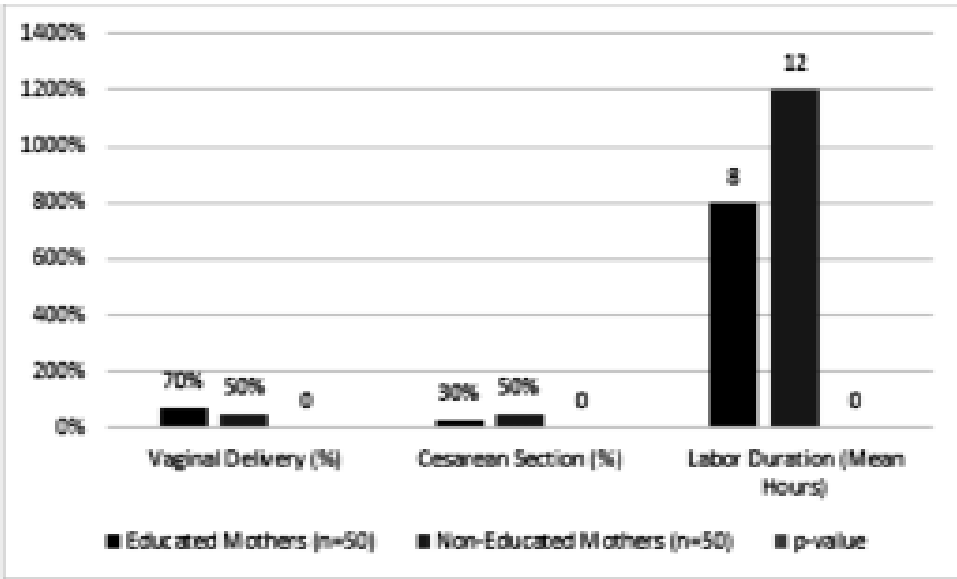


Figure 01: Impact of Antenatal Education on Pregnancy Outcomes

Table 2: Neonatal Outcomes

Neonatal Outcome	Educated Mothers (n=50)	Non-Educated Mothers (n=50)	p-value
Neonatal Birth Weight (Mean kg)	3.2	2.8	<0.05
APGAR Score at 1 min (Mean)	8	6	<0.05
APGAR Score at 5 min (Mean)	9	7	<0.05

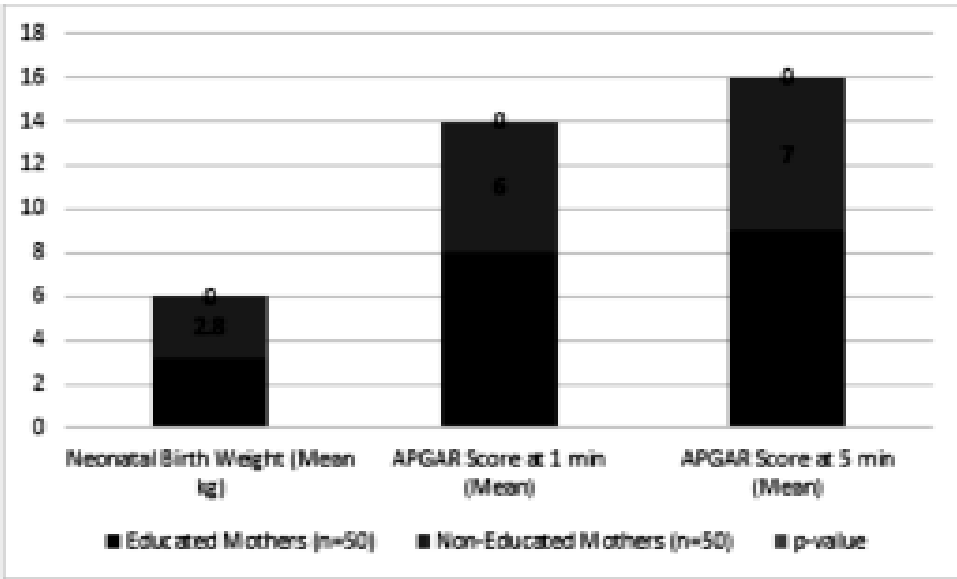


Figure 02: Neonatal Outcomes

Table 3: Maternal Knowledge and Preparedness

Preparedness Factor	Educated Mothers (n=50)	Non-Educated Mothers (n=50)	p-value
Awareness of Danger Signs (%)	90%	60%	<0.05
Facility-Based Delivery Knowledge (%)	85%	55%	<0.05
Maternal Preparedness Score (Mean)	85%	60%	<0.05

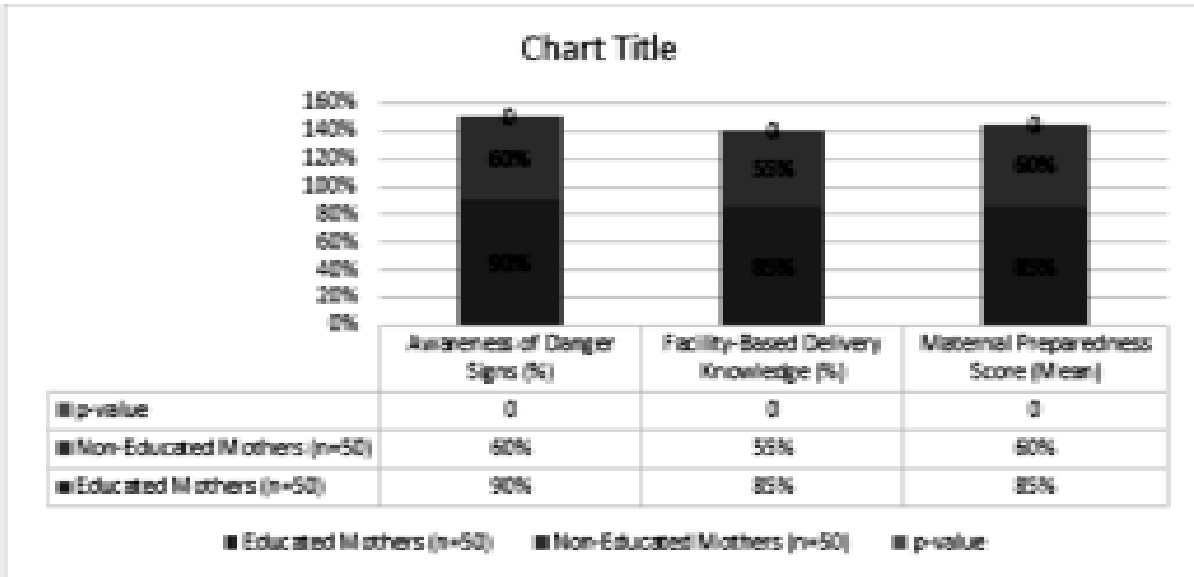
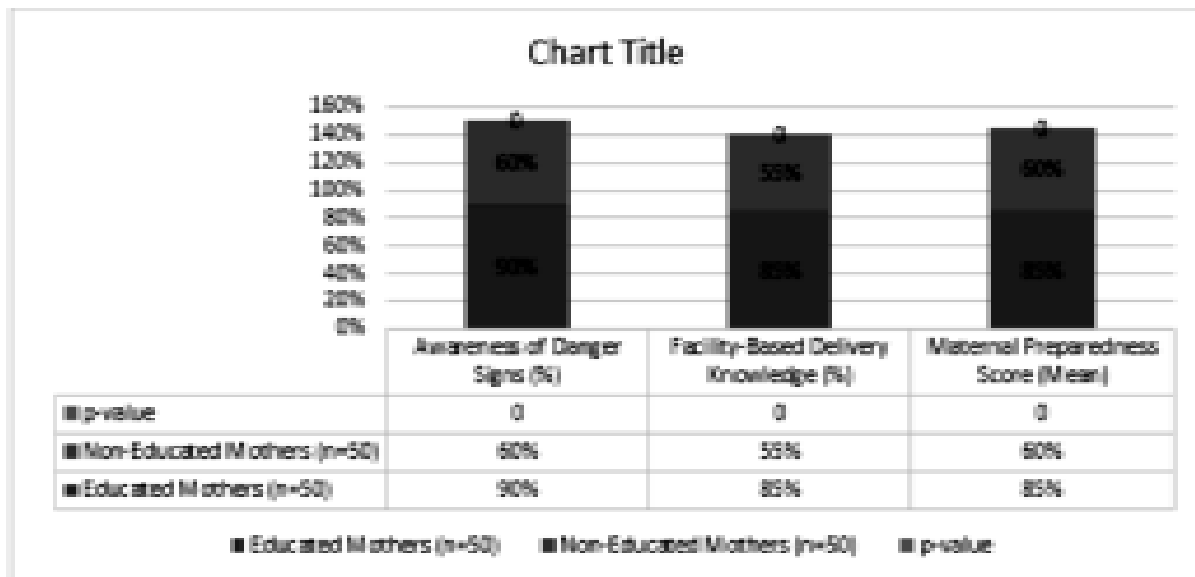


Figure 03: Maternal Knowledge and Preparedness

Table 4: Pregnancy Complications

Complication Type	Educated Mothers (n=50)	Non-Educated Mothers (n=50)	p-value
Preterm Labor (%)	5%	15%	<0.05
Gestational Hypertension (%)	10%	25%	<0.05
Postpartum Hemorrhage (%)	8%	18%	<0.05

**Figure 04: Pregnancy Complications**

The results indicate that mothers who received antenatal education had significantly better pregnancy outcomes. Educated mothers had higher rates of vaginal delivery, shorter labor duration, and better neonatal health indicators.

Conclusions

Antenatal education significantly improves pregnancy outcomes, reducing labor complications and improving neonatal health. It enhances maternal preparedness, leading to better childbirth experiences. The findings suggest the integration of structured antenatal education programs in maternity care.

Further Recommendations

1. Expansion of antenatal education programs in all maternity hospitals.
2. Development of digital platforms to enhance maternal knowledge.
3. Further research on long-term benefits of antenatal education on maternal and child health.

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Conflicts of interest : The author declare that they have no conflict of interest with regard to the content of the report.

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