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Impact of Prenatal Education on Maternal Anxiety and Birth Outcomes among Primigravida Mothers in a Selected Primary Health Unit

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ABSTRACT

This study investigated the effects of prenatal education on maternal anxiety and birth outcomes among first-time mothers at a primary health unit. Utilizing Pender's Health Promotion Model, Neuman's Systems Model, and Roy's Adaptation Model, a quantitative descriptive-correlational approach was taken with participants aged 19–35 who met specified criteria. Data were gathered via a validated survey and maternal health records, assessing prenatal education by attendance frequency, content, and delivery mode. Analysis included descriptive statistics, Pearson Product-Moment Correlation, and Chi-Square Test at a 0.05 significance level. Results indicated significant relationships between prenatal education and maternal anxiety, as well as selected birth outcomes, with increased participation linked to reduced anxiety and improved pregnancy outcomes. Consequently, a Prenatal Education Enhancement Plan was devised to enhance maternal health education and optimize outcomes in primary healthcare settings.

Keywords: *Prenatal education; maternal anxiety; birth outcomes; primigravida mothers; maternal health; primary healthcare.*

INTRODUCTION

This study examined the impact of prenatal education on maternal anxiety and birth outcomes among primigravida mothers in a selected primary health unit. Pregnancy-related anxiety is common among first-time mothers and has been associated with adverse maternal and neonatal outcomes, while prenatal education has been shown to improve maternal knowledge, self-efficacy, and childbirth preparedness (World Health Organization [WHO], 2022; American College of Obstetricians and Gynecologists [ACOG], 2024). Guided by Pender's Health Promotion Model, Neuman's Systems Model, and Roy's Adaptation Model, the study determined the relationships among prenatal education, maternal anxiety, and birth outcomes to serve as the basis for a Prenatal Education Enhancement Plan.

Statement of the Problem

This study determined the impact of prenatal education on maternal anxiety and birth outcomes among primigravida mothers in a selected primary health unit. Specifically, it described the respondents' demographic characteristics, assessed the extent of prenatal education, maternal

anxiety, and birth outcomes, and examined the relationships among prenatal education, maternal anxiety, and birth outcomes.

In this context, the study sought to answer the following questions:

1. What is the extent of prenatal education perceived by first-time mothers in terms of:
   1.1Frequency of attendance
   1.2 Content coverage
   1.3Mode of delivery
2. What is the level of maternal anxiety among first-time mothers during pregnancy?
   2.1 Prevalence and Trimester Variations
   2.2 Categories of Severity
   2.3 Impact on Outcomes]
3. What are the birth outcomes of first-time mothers in terms of:
   3.1 Induction of labor
   3.2 Mode of delivery
   3.3. Gestational age of birth
   3.4 Birth weight of the newborn
4. Is there a significant relationship between the extent of prenatal education and maternal anxiety among first-time mothers?
5. Is there a significant relationship between maternal anxiety and birth outcomes among first-mothers?
6. Is there a significant relationship between the extent of prenatal education and birth outcome among first-time mothers?
7. Based on the results, what action plan can be developed?

Scope and Delimitations

This study examined the effects of prenatal education on maternal anxiety and birth outcomes in first-time mothers at a primary health unit. Key aspects evaluated included frequency, content, and delivery mode of prenatal education, alongside measures of maternal anxiety and various birth outcomes such as labor induction, delivery mode, gestational age, and newborn weight. Employing a quantitative descriptive-correlational design, data were gathered via surveys and health records and analyzed using statistical methods, including frequency percentages, weighted means, Pearson correlations, and Chi-Square tests.

Review of Related Literature

Recent studies highlight that prenatal education is crucial for maternal healthcare, especially for first-time mothers. In the Philippines, access to antenatal care and maternal health education enhances pregnancy knowledge and preparedness for childbirth, with socioeconomic and educational factors impacting service participation. (Mendoza & Cruz, 2023; Soerachman et al., 2024).

International research shows that structured prenatal education lowers maternal anxiety, stress, and fear of childbirth while improving self-efficacy, emotional readiness, and satisfaction with childbirth. It is linked to favorable birth outcomes, such as higher rates of normal vaginal delivery and lower cesarean delivery rates. These findings strongly support the need to explore the connection between prenatal education, maternal anxiety, and birth outcomes among first-time mothers in primary healthcare settings. (Bilgic & Akyuz, 2023; Yörük & Acikgoz, 2023; Zaman et al., 2025).

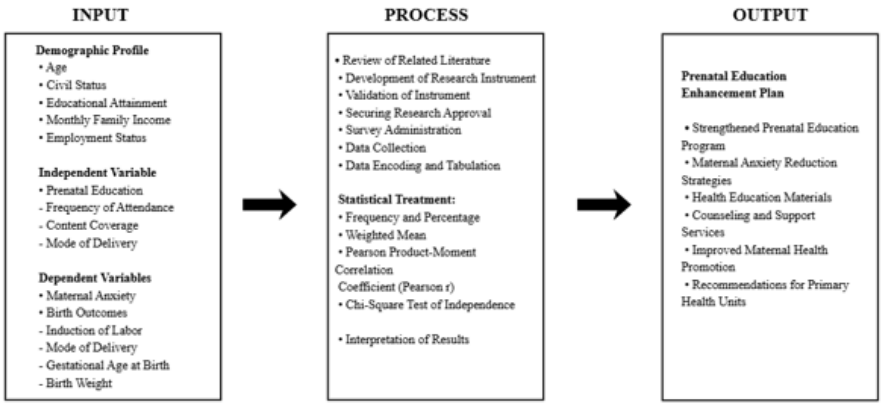
Theoretical Framework

This study explores how prenatal education affects maternal anxiety and birth outcomes for first-time mothers, utilizing three nursing theories. **Pender's Health Promotion Model** suggests that greater health knowledge enhances maternal preparedness**. Neuman's Systems Model** views maternal anxiety as reduced by prenatal education, leading to psychological stability. **Roy's Adaptation Model** emphasizes the continuous adaptation necessary during pregnancy, where prenatal education improves coping skills and contributes to favorable birth outcomes. Collectively, these theories highlight the vital role of prenatal education in mitigating maternal anxiety and enhancing birth outcomes.

Conceptual Framework

This study adopted the **Input–Process–Output (IPO) Model** as its conceptual framework. The **Input** included the respondents' demographic characteristics and the study variables: prenatal education (independent variable), maternal anxiety, and birth outcomes (dependent variables). Prenatal education was assessed by frequency, content, and mode of delivery, while birth outcomes included induction of labor, mode of delivery, gestational age, and newborn weight.

The **Process** included instrument validation, data collection, and statistical analysis using frequency and percentage, weighted mean, Pearson Product-Moment Correlation, and Chi-Square Test of Independence to explore relationships among study variables. The **Output** was the Prenatal Education Enhancement Plan, which aims to enhance maternal health education, alleviate maternal anxiety, and improve birth outcomes for first-time mothers in primary healthcare settings.



METHODOLOGY

This study employed a **quantitative descriptive-correlational, cross-sectional research design** to examine the relationship between prenatal education, maternal anxiety, and birth outcomes among primigravida mothers in a selected primary health unit. A cross-sectional approach was adopted because data were collected at a single point in time and analyzed using appropriate statistical techniques (Creswell & Creswell, 2023; Polit & Beck, 2022; Setia, 2023).

Research Design

This study employed a **quantitative descriptive-correlational, cross-sectional design** to examine the relationship between prenatal education, maternal anxiety, and birth outcomes among primigravida mothers in a selected primary health unit. The descriptive component described the respondents and the study variables, while the correlational component determined the relationships among prenatal education, maternal anxiety, and birth outcomes using appropriate statistical analyses (Creswell & Creswell, 2023; Polit & Beck, 2022).

Research Steps

Ethical approval was obtained for the study involving primigravida mothers, identified through purposive sampling. Informed consent was obtained, and data were collected using a validated survey in conjunction with maternal health records. Analysis employed descriptive and inferential statistics to explore connections between prenatal education, maternal anxiety, and birth outcomes.

Data Collection and Sample Selection

The study employed purposive sampling to recruit eligible primigravida mothers aged 19–35 years who received prenatal care at a selected primary health unit and met the inclusion criteria. Data were collected using a validated survey questionnaire and maternal health records after obtaining informed consent and the necessary ethical and institutional approvals.

Data Analysis Methods

Data were analyzed using descriptive and inferential statistics. Frequency, percentage, and weighted mean were used to summarize the respondents' characteristics and study variables, while Pearson Product-Moment Correlation and Chi-Square Test of Independence were employed to determine the relationships among prenatal education, maternal anxiety, and birth outcomes at a 0.05 level of significance.

Research Hypotheses and Validation

The study tested the null hypotheses that no significant relationships existed among prenatal education, maternal anxiety, and birth outcomes. The research instrument underwent expert content validation and pilot testing to establish its validity and reliability before data collection.

Study Limitations and Ethical Considerations

The study was limited to primigravida mothers from a single primary health unit, which may affect the generalizability of the findings. Ethical approval was obtained prior to data collection, and informed consent, voluntary participation, confidentiality, and data privacy were ensured throughout the study.

RESULTS AND DISCUSSION

Most respondents were young adults (19–24 years), in common-law relationships, educated at the college level, and of lower income. They rated prenatal education as comprehensive, covering various aspects, but reported high maternal anxiety regarding labor pain and infant health. Birth outcomes were generally positive, indicating no significant correlation between prenatal education, maternal anxiety, and birth outcomes. The findings highlight the need for psychosocial support in prenatal education, leading to the proposal of a Prenatal Education Enhancement Plan to improve health services for first-time mothers.

SUMMARY

The study found that young primigravida mothers engaged in comprehensive prenatal education experienced high maternal anxiety, although birth outcomes were favorable. No significant links were identified between prenatal education, maternal anxiety, and birth outcomes, indicating that these factors are shaped by a variety of biological, psychological, and socioeconomic influences beyond education alone.

CONCLUSIONS

Prenatal education is well-received by first-time mothers, yet maternal anxiety persists despite participation in these sessions. While birth outcomes are mostly positive, there is no significant link between prenatal education, maternal anxiety, and birth outcomes. This suggests that various biological, psychological, and socioeconomic factors affect maternal anxiety and birth outcomes, underscoring the importance of a comprehensive prenatal care approach that combines health education with mental health and psychosocial support.

RECOMMENDATIONS

Primary health units should improve prenatal education by integrating maternal mental health, stress management, and anxiety screening in antenatal care. Community health nurses are encouraged to provide personalized counseling and to involve families to enhance psychosocial support. Nursing education needs to emphasize perinatal mental health skills, while policymakers should support comprehensive maternal health programs. Future research should focus on diverse samples and psychosocial factors influencing maternal anxiety and birth outcomes through longitudinal or mixed-methods studies.

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AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

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