ISSN Print: 2581-8546 ISSN Online: 2582-2934

Original Article

Effectiveness of a Nurse-Led Antenatal Education Programme on Birth Preparedness and Complication Readiness

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Abstract

Introduction : One important tactic to lower maternal and newborn morbidity and mortality is birth preparedness and complication readiness, or BPCR. In order to improve mother knowledge, encourage self-efficacy, and get women ready for a safe delivery, nurse-led prenatal education programs have proven to be successful interventions.

Methodology : A quasi-experimental one-group pre-test and post-test design was adopted. Sixty antenatal women between 20-28 weeks of gestation were selected using purposive sampling. A structured BPCR assessment tool was administered before and after the intervention. Data were analyzed using descriptive and inferential statistics.

Results : The mean pre-test BPCR score was 12.4 ± 3.2, which increased to 21.7 ± 4.1 in the post-test. A paired t-test showed a statistically significant improvement ($t = 12.45$, $p < 0.001$). Sub-domains such as knowledge of danger signs, financial planning, transportation arrangements, and identification of skilled birth attendants showed significant gains.

Conclusions : Pregnant women's readiness for complications and for giving birth was much enhanced by the nurse-led prenatal education program. Regular prenatal care should incorporate these strategies.

Keywords : Nurse-led education antenatal care, Birth preparedness, Complication readiness, Maternal health.

How to cite this article : Kaur B, Vanaja P, Chaudhary P, Patel BB, Divya A, Saini C. Effectiveness of a Nurse-Led Antenatal Education Programme on Birth Preparedness and Complication Readiness. Glob. Nurs. J. India 2025; 8: II: 855-859.

Submitted: 14/08/2025, Accepted: 25/08/2025, Published:07/09/2025

DOI:10.46376/GNJI/8.II.2025.855-859

ISSN Print: 2581-8546 ISSN Online: 2582-2934

Introduction

The prevention of maternal morbidity and mortality is essential to reaching the Sustainable Development Goals (SDGs), making maternal health a global priority. Around 800 women globally lose their lives to avoidable pregnancy and childbirth-related causes every day, with low- and middle-income countries (LMICs) accounting for 94% of these deaths[1]. Despite advancements in institutional delivery rates and access to prenatal care services, maternal health issues persist in India.

One important maternal health tactic that assists women and their families in preparing for a typical birth and anticipating crises is birth preparedness and complication readiness, or BPCR[2]. Finding a trained birth attendant, planning for delivery expenses, scheduling transportation, and being aware of the most important warning flags during pregnancy, delivery, and the postpartum period are all part of BPCR[3]. There is evidence that BPCR dramatically lowers maternal and newborn mortality rates by reducing delays in seeking and receiving care[4].

Nurses play a critical role in antenatal education due to their accessibility, holistic approach, and continuous interaction with pregnant women. Nurse-led interventions have been proven effective in promoting positive health behaviors, increasing knowledge, and improving preparedness for childbirth[5]. Several studies have reported that structured nurse-led education enhances self-efficacy and confidence among women, which translates into better birth outcomes[6].

Despite this, a large number of Indian women in rural and semi-urban areas lack the necessary planning and understanding for birthing. The "three delays model"-delays in choosing to seek care, in getting to medical facilities, and in getting quality care while at the facility-is exacerbated by a lack of prompt decision-making and readiness[7]. This gap can be filled by nurse-led prenatal education programs that offer organized, culturally relevant, and fact-based information.

Prior studies in South Asia and Africa demonstrate the beneficial effects of prenatal education on birth readiness. Women who participated in formal prenatal education were twice as likely to get ready for delivery as those who did not, according to a study conducted in Ethiopia[8]. Likewise, research conducted in India has highlighted that health education delivered by nurses improves maternal outcomes, improves readiness, and raises awareness of warning signs[9].

Given this background, the present study was conducted to evaluate the effectiveness of a nurse-led antenatal education programme on birth preparedness and complication readiness among antenatal women.

Objectives

1. To assess the pre-test knowledge and preparedness scores of antenatal women regarding BPCR.
2. To evaluate the effectiveness of the nurse-led antenatal education programme on BPCR.
3. To compare pre-test and post-test scores of BPCR among antenatal women.

Hypothesis

H_1 : There will be a significant improvement in BPCR scores among antenatal women after the nurse-led antenatal education programme at $p < 0.05$.

Methodology

Research Design : A quasi-experimental research design with a single group pre-test and post-test was adopted.

Setting : The study was conducted at antenatal clinics of a selected tertiary care hospital in Jaipur, Rajasthan.

Sample and Sampling Technique : Sixty antenatal women between 20-28 weeks of gestation were selected using purposive sampling.

Inclusion Criteria

- Pregnant women in 20-28 weeks of gestation
- Willing to participate and provide informed consent
- Attending ANC clinics during the study period

Exclusion Criteria

- Women with high-risk pregnancies
- Women already exposed to similar health education sessions

Tools

A structured Birth Preparedness and Complication Readiness Questionnaire consisting of 25 items was used. It had 5 domains:

1. Knowledge of danger signs (8 items)
2. Financial preparedness (5 items)
3. Transportation planning (4 items)
4. Identification of skilled birth attendant (4 items)
5. Arrangement of blood donor/support (4 items)

Reliability was tested using Cronbach's alpha (0.82).

DOI:10.46376/GNJI/8.II.2025.855-859

Intervention

The nurse-led antenatal education programme was delivered through lecture, demonstration, group discussion, and distribution of IEC materials. Sessions were interactive and conducted in local language (Hindi).

Data Collection

Pre-test was conducted on Day 1, followed by a structured education programme. Post-test was conducted after two weeks.

Data Analysis

Data were analyzed using SPSS v25. Descriptive statistics (mean, SD, frequency, percentage) and inferential statistics (paired t-test) were applied.

Results

Table 01 : Socio-demographic Characteristics of Antenatal Women (N = 60)

Variables	Categories	Frequency (n)	Percentage (%)
Age (years)	20-24	18	30.0
	25-29	24	40.0
	30-34	12	20.0
	?35	6	10.0
Education level	Illiterate	8	13.3
	Primary	14	23.3
	Secondary	20	33.3
	Graduate & above	18	30.0
Occupation	Housewife	42	70.0
	Working (Private/Govt)	18	30.0
Parity	Primigravida	28	46.7
	Multigravida	32	53.3
Family type	Nuclear	34	56.7
	Joint	26	43.3
Monthly family income	< ?10,000	16	26.7
	?10,001-20,000	24	40.0
	?20,001-30,000	12	20.0
	> ?30,000	8	13.3
Residence	Urban	36	60.0
	Rural	24	40.0

Tables 02: Objective 1: Pre-test BPCR scores

Domain	Mean ± SD	% Preparedness
Knowledge of danger signs	3.4 ± 1.1	42.5%
Financial preparedness	2.1 ± 0.9	41.0%
Transportation planning	2.3 ± 0.8	45.8%
Skilled birth attendant	2.4 ± 0.9	50.0%
Blood donor/support	2.2 ± 1.0	44.0%
Total	12.4 ± 3.2	45.0%

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Figure 01: Pre-test BPCR scores

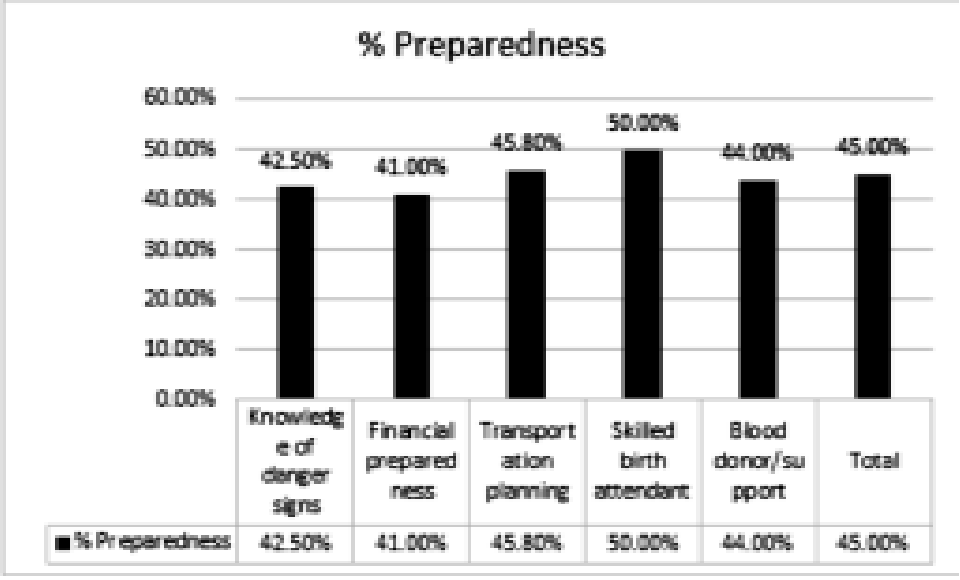

Table 3 : Comparison of Pre-test and Post-test Scores on Birth Preparedness and Complication Readiness (N = 60)

Domain	Pre-test Mean ± SD	Pre-test % Preparedness	Post-test Mean ± SD	Post-test % Preparedness
Knowledge of danger signs	3.4 ± 1.1	42.5%	6.5 ± 1.2	81.3%
Financial preparedness	2.1 ± 0.9	41.0%	4.1 ± 1.0	82.0%
Transportation planning	2.3 ± 0.8	45.8%	3.7 ± 0.9	92.5%
Skilled birth attendant	2.4 ± 0.9	50.0%	4.2 ± 0.8	87.5%
Blood donor/support	2.2 ± 1.0	44.0%	3.2 ± 1.1	80.0%
Total	**12.4 ± 3.2**	**45.0%**	**21.7 ± 4.1**	**79.6%**

Table 04 : Objective 2 & 3: Effectiveness of programme (Pre vs. Post)

Test	Mean ± SD	t-value	p-value
Pre-test	12.4 ± 3.2		
Post-test	21.7 ± 4.1	12.45	<0.001*

*Significant at $p < 0.05$

The results indicate a significant improvement in overall BPCR scores after the nurse-led intervention.

Discussion

The current study showed that pregnant women's readiness for complications and for childbirth was much enhanced by a nurse-led prenatal education program. Studies conducted in Ethiopia and Nepal revealed similar results, showing that organized prenatal education raised readiness levels[8,10].

Because of their intimate relationship with women, nurses are essential to health education. The intervention's overall benefit is demonstrated by the rise in awareness and readiness in every area, including risk indicators, financial planning, transportation, competent attendant, and blood donor identification. These results are consistent with previous Indian research demonstrating that focused teaching improves safe delivery techniques and decreases delays in seeking care[9].

Conclusions

The nurse-led antenatal education programme was effective in improving BPCR among antenatal women. Integration of such structured programmes into routine antenatal care can help reduce maternal morbidity and mortality.

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Recommendations

1. Nurse-led antenatal education programmes should be institutionalized in all ANC clinics.
2. Regular refresher training for nurses on updated BPCR guidelines should be implemented.
3. Larger studies with randomized controlled designs are recommended for generalizability.
4. Community-based awareness programmes involving husbands and family members should be promoted.

Financial support and sponsorship : Nil

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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DOI:10.46376/GNJI/8.II.2025.855-859