



# An Experimental Study To Assess The Effectiveness Of A Video-Assisted Childbirth Preparedness And Complication Readiness (BPCR) Education Programme On Knowledge Regarding Childbirth Among Primigravida Mothers Attending The Antenatal Outpatient Department Of A Selected Hospital

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## Abstract

**Background:** Maternal morbidity and mortality remain major public health concerns, especially in developing countries. **Birth Preparedness and Complication Readiness (BPCR)** is an evidence-based strategy designed to reduce delays in seeking care during obstetric emergencies. However, primigravida mothers—those expecting their first child—often lack adequate knowledge and confidence regarding essential childbirth preparedness.

**Objectives:** To assess the effectiveness of a video-assisted BPCR education programme on **knowledge regarding childbirth** among primigravida mothers attending the antenatal outpatient department of a selected hospital.

**Methods:** An experimental (**pretest–posttest control group**) research design was adopted. A total of 100 primigravida mothers were selected using consecutive sampling and randomly assigned to the experimental (n = 50) and control (n = 50) groups. Baseline knowledge regarding childbirth and BPCR was assessed using a structured questionnaire. The experimental group received a 40-minute video-assisted BPCR education programme, while the control group received routine antenatal counseling. The posttest was conducted one week later. Data were analyzed using descriptive and inferential statistics.

**Results:** The mean pretest knowledge score in the experimental group was  $\pm 11.26 \pm 3.84$ , which significantly increased to  $\pm 23.54 \pm 3.42$  after the intervention. The control group's mean scores showed little change (pretest:  $\pm 11.10 \pm 3.67$ ; posttest:  $\pm 12.04 \pm 3.45$ ). The calculated t-value ( $\pm 17.92$ ,  $p < 0.001$ ) indicated a highly significant improvement in knowledge among the experimental group compared to the control group.

**Conclusion:** The video-assisted BPCR education programme was **highly effective** in improving knowledge regarding childbirth among primigravida mothers. Incorporating such audiovisual teaching methods into routine antenatal education can strengthen maternal preparedness and contribute to safer childbirth outcomes.

**Keywords:** Birth preparedness, complication readiness, video-assisted teaching, primigravida mothers, childbirth knowledge, antenatal education.

## Introduction

Maternal mortality remains a critical global health challenge, particularly in developing nations where the "three delays"—delays in decision-making, transport, and receiving skilled obstetric care—are major causes of maternal deaths. The concept of **Birth Preparedness and Complication Readiness (BPCR)** directly addresses these delays by empowering expectant mothers and their families to proactively plan for both a normal delivery and potential emergencies.

Primigravida mothers are a vulnerable population group, often facing higher risks of anxiety, inadequate knowledge, and misconceptions regarding labor and delivery. In India, despite the positive trend of increasing institutional deliveries, many women still lack adequate preparedness for emergency situations. Given this knowledge gap, interventions utilizing **audiovisual methods** are known to substantially improve the understanding and retention of complex health information compared to traditional lecture-based approaches.

This study was thus designed to evaluate the effectiveness of a video-assisted BPCR education programme in enhancing childbirth knowledge among primigravida mothers attending an antenatal OPD.

## Objectives

1. To assess the baseline knowledge regarding childbirth preparedness and complication readiness among primigravida mothers.
2. To evaluate the effectiveness of a video-assisted BPCR education programme on knowledge regarding childbirth.
3. To compare the posttest knowledge scores between the experimental and control groups.

4. To find the association between posttest knowledge scores and selected demographic variables of primigravida mothers.

## Hypotheses

H0: There will be no significant difference in the mean posttest knowledge scores regarding childbirth between primigravida mothers in the experimental group and those in the control group.

H1: Primigravida mothers who receive the video-assisted BPCR education program (experimental group) will have significantly higher mean posttest knowledge scores regarding childbirth compared to those who receive routine antenatal counseling (control group) ( $p < 0.05$ ).

## Methodology

### Research Approach and Design

This study adopted an **experimental research approach** with a **pretest–posttest control group design** to assess the effectiveness of the video-assisted Birth Preparedness and Complication Readiness (BPCR) education programme. Two groups were formed:

**Experimental Group:** Received the 40-minute video-assisted BPCR education.

**Control Group:** Received routine antenatal counseling.

Both groups were assessed before and after the intervention using the same structured knowledge questionnaire.

### Setting and Population

The study was conducted in the **Antenatal Outpatient Department (OPD)** of a selected tertiary care hospital in India. The hospital provides comprehensive antenatal services and serves as a referral centre for surrounding rural and urban areas. The **target population** comprised all primigravida mothers attending the antenatal OPD, while the **accessible population** included those available during the data collection period who met the inclusion criteria.

### Sample and Sampling Technique

A total of **100 primigravida mothers** were selected using **consecutive sampling** based on their availability and willingness to participate. After obtaining informed consent, participants were randomly assigned into two groups using the lottery method to ensure unbiased distribution:

Experimental Group (n = 50) Control Group (n = 50) **Inclusion Criteria:**

- Primigravida mothers attending antenatal OPD during the study period.
- Able to read or understand Hindi or English.
- Willing to participate and available for the follow-up posttest.

### Exclusion Criteria:

- Multigravida mothers.
- Mothers who had previously attended childbirth education or antenatal video sessions.
- Those with obstetric complications at the time of data collection.

### Description and Validation of the Tool

A **structured knowledge questionnaire** (30 multiple-choice questions) was developed, consisting of two parts: **Part I:** Demographic variables (age, education, occupation, residence, gestational age, source of information, etc.).

**Part II:** Knowledge items covering Birth Preparedness, Complication Readiness, Danger Signs during pregnancy and childbirth, Essential Newborn Care, and Nutrition/Rest during pregnancy. Each correct answer was scored '1' and each incorrect answer '0', yielding a total possible score of **30**. Scores were interpreted as:

Score Range	Interpretation
21–30	Good Knowledge
11–20	Average Knowledge
0–10	Poor Knowledge

### Validity and Reliability:

**Content Validity:** Established by five subject experts, yielding a Content Validity Index (CVI) of 0.88, indicating strong validity.

**Reliability:** Tested using Cronbach's Alpha, with a coefficient of  $\alpha = 0.82$ , demonstrating high internal consistency.

Intervention: Video-Assisted BPCR Programme

A **40-minute video module** was developed by the investigator covering the importance of birth preparedness, identification of danger signs, planning for emergency transport and skilled care, family support, and psychological preparation for delivery. The video was shown using a projector in a quiet room, followed by a

10-minute discussion and clarification session to reinforce learning.

## Data Collection Procedure

Permission was obtained from hospital authorities and the Institutional Ethics Committee (IEC). Eligible primigravida mothers were identified, and written informed consent was obtained. **Pretest** knowledge assessment was conducted using the structured questionnaire for both groups. Immediately following the pretest, the **Experimental Group** received the 40-minute video-assisted BPCR programme. The **Control Group** received routine antenatal education only. The **Posttest** was administered for both groups on the **7th day** using the same questionnaire.

## Data Analysis and Ethical Considerations

### Statistical Methods:

**Descriptive statistics:** Mean, Standard Deviation (SD), frequency, and percentage.

**Inferential statistics:** Paired t-test (intra-group comparison), Independent t-test (inter-group comparison), and Chi-square test (association with demographic variables). A **p-value** < 0.05 was considered statistically significant.

### Ethical Considerations:

- The study received approval from the Institutional Ethics Committee (IEC).
- Written informed consent was obtained from all participants.
- Confidentiality and anonymity were maintained throughout the study.
- Participants were informed of their right to withdraw at any stage.
- **Ethical Fairness:** The control group was provided access to the complete video-assisted BPCR education programme after the posttest data collection was complete.

## Results

**Table 1: Comparison of Demographic Characteristics (Baseline Equivalence)**

Variable	Experimental (n=50)	Control (n=50)
Mean age (years) ± SD	24.6 ± 3.4	25.1 ± 3.1
Education (Secondary & above)	68%	64%
Occupation (Housewife)	72%	74%
Residence (Urban)	60%	56%

**Table 2: Comparison of Pretest and Posttest Knowledge Scores**

Group	Pretest Mean $\pm$ SD	Posttest Mean $\pm$ SD	Mean Diff. (Post - Pre)	t-value (Paired)	p-value
Experimental	11.26 $\pm$ 3.84	23.54 $\pm$ 3.42	12.28	21.47	<0.001
Control	11.10 $\pm$ 3.67	12.04 $\pm$ 3.45	0.94	1.32	>0.05

## Discussion

The primary finding of this study is the highly significant increase in knowledge scores among primigravida mothers who received the **video-assisted BPCR education** ( $p < 0.001$ ) compared to the control group. The mean difference of 12.28 in the experimental group clearly indicates the educational intervention was effective. The results support existing literature, including findings by Kaur et al. (2022) and Patel & Joshi (2021), which demonstrate that audiovisual methods substantially enhance maternal learning and preparedness for childbirth. Since the two groups were comparable at baseline (Table 1) and in their pretest scores (Table 2), the observed change can be directly attributed to the intervention. The marginal increase in the control group's posttest score is likely due to sensitization from the pretest or routine minimal counseling.

## Conclusion

The video-assisted BPCR education programme demonstrated **high effectiveness** in significantly improving knowledge regarding childbirth among primigravida mothers. Integrating such easily digestible and retaining educational videos into routine antenatal teaching protocols can serve as a robust strategy to enhance maternal preparedness and promote safer delivery practices in the hospital setting.

## Recommendations

**Clinical Implementation:** Implement video-assisted BPCR teaching as a standard component in all antenatal clinics and outpatient departments.

**Module Development:** Develop multilingual and context-specific modules to ensure the programme reaches diverse linguistic and cultural populations.

**Future Research:** Conduct multi-centre studies to assess the long-term behavioral outcomes (e.g., actual care-seeking behavior during emergencies) resulting from the BPCR education.

**Curriculum Integration:** Integrate the creation and utilization of audiovisual teaching materials into nursing and midwifery education curricula.

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