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Transforming Birth Experiences: Effect of Child Birth Preparedness Programme on Intrapartum Coping Behaviour Among Primigravida Mothers

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Abstract

Background: Childbirth is a significant life event often associated with various physiological and psychological challenges, particularly for primigravida mothers, who undergo the process for the first time. Intrapartum coping behavior, encompassing psychological responses and coping strategies during labor and delivery, profoundly influences maternal well-being and birth outcomes. Child Birth Preparedness Programme (CBPP) aim to equip expectant mothers with essential knowledge and skills to navigate the birthing process effectively.

Objective: The primary objective was to determine the effect of the CBPP on intrapartum coping behavior among primigravida mothers. **Methods:** A quantitative research approach was adopted, utilizing a quasi-experimental design. The study population comprised primigravida mothers at 38 weeks of gestation in the MCH wards of SGT Hospital. Purposive sampling was used to select 60 participants, with 30 in the control and experimental groups each. Data were collected using a standardized labor coping scale and analyzed using descriptive and inferential statistics. **Results:** The CBPP significantly improved coping behavior among primigravida mothers, with the experimental group exhibiting higher coping scores compared to the control group (mean score: 4.07 vs. 2.53, $p < 0.05$). Demographic variables such as education, husband's education, occupation, and knowledge regarding CBPP were associated with coping behavior. **Conclusion:** The study demonstrates the positive impact of CBPP on intrapartum coping behavior among primigravida mothers. Educational interventions and enhancing knowledge about CBPP can further improve coping strategies during childbirth. These findings underscore the importance of tailored childbirth preparation programs in promoting maternal well-being during labor and delivery.

Keywords: Childbirth preparedness; Primigravida mothers; Intrapartum coping behavior; Maternal outcomes; Maternal satisfaction

1 Background

Childbirth represents a profound physiological and emotional event in a woman's life, yet it also poses significant health risks, particularly in regions with limited access to quality maternal care.¹⁻³

Despite global efforts to improve maternal health outcomes, the World Health Organization (WHO) reported an estimated 295,000 maternal deaths worldwide in 2017, with Sub-Saharan Africa and South Asia bearing the highest burden.^{1,2,4} These statistics underscore the urgent need for comprehensive interventions to address the complex factors influencing maternal mortality and morbidity.

Primigravida women, in particular, face unique challenges and uncertainties during childbirth, often compounded by inadequate prenatal education and limited access to healthcare services.^{5,6} Studies have shown that primigravida mothers experience heightened levels of anxiety, fear, and stress during labor, which can adversely affect birth outcomes and maternal well-being.^{5,7} Addressing these psychosocial factors is crucial for promoting positive childbirth experiences and reducing the risk of complications.

In recent years, there has been growing recognition of the importance of childbirth preparedness programs in empowering women and improving birth outcomes.^{8,9} These programs typically encompass a range of educational, psychosocial, and clinical components aimed at equipping women with the knowledge and skills necessary to navigate the childbirth process confidently.^{8,10} By promoting birth planning, enhancing coping strategies, and fostering a supportive environment, these interventions have the potential to mitigate the adverse effects of labor-related stressors.

Research on childbirth preparedness has yielded promising results, demonstrating associations between participation in education programs and

positive intrapartum coping behaviors.^{11,12} However, significant variations exist in the content, delivery, and effectiveness of these programs across different settings, highlighting the need for context-specific interventions tailored to the needs of diverse populations.^{13,14}

Understanding the determinants of intrapartum coping behavior and the barriers to accessing maternal care is essential for designing effective and sustainable interventions.^{15,16} By addressing these gaps in knowledge, researchers and healthcare providers can develop evidence-based strategies to enhance maternal well-being, reduce maternal mortality, and promote positive childbirth experiences for women worldwide.

In addition to the physical and emotional toll, childbirth complications pose a significant economic burden on families and healthcare systems. According to the United Nations Population Fund (UNFPA), the global cost of maternal and newborn healthcare-related complications is estimated to be around \$14.2 billion annually.¹⁶

Despite these challenges, there is a lack of comprehensive research evaluating the effectiveness of childbirth preparedness programs, especially among primigravida mothers. Understanding the factors influencing intrapartum coping behavior and the impact of intervention programs is essential for developing evidence-based strategies to improve maternal and neonatal health outcomes.

By addressing this research gap, our study aims to contribute valuable insights into the effectiveness of childbirth preparedness programs in enhancing intrapartum coping behavior among primigravida mothers. By doing so, we hope to inform policy decisions, healthcare practices, and resource allocation efforts aimed at reducing maternal mortality and morbidity rates and advancing the broader agenda of maternal and child health equity.

2 Material and Methods

A quantitative research approach was adopted to gather numerical data and make generalizations about the effect of CBPP on intrapartum coping behaviour among primigravida mothers. A quasi-experimental Non-Equivalent Post-Test Only Control Group Design was utilized, allowing for the comparison of outcomes between an intervention group exposed to CBPP and a control group without the intervention. The study was conducted in the MCH wards of SGT Hospital in Gurugram, Haryana, India. Ethical Permission was taken for the study from the institutional ethical committee (Letter No. FON/SGTU/22/1590-IV). A total of 60 Primigravida mothers were enrolled in the study, 30 in each group, using a purposive sampling technique. The sample size was calculated using G* Power software with 80% power and a 5% significance level. Primigravida mothers without any antenatal complications with POG of >37 weeks were included in the study, whereas Multigravida mothers with elective cesarean sections were excluded from the study.

The data was collected in the month of April- May 2023 using following tools: 1. Socio-demographical Profile consisting of Age, education, religious, occupation, income, type of family and area of residence, information related to intrapartum coping behavior (training, counseling or any source of information) and obstetric history etc. 2. The Labour Coping Scale to assess the intrapartum coping. It is a standardized assessment tool with total score of 10 indicating 0-3- not coping well, 4-5 – coping and 6-10- coping well.¹⁷ the tools were validated by the experts in the field of obstetrics and Gynecological Nursing and CVI score was calculated to be 0.95 for Sociodemographic profile and 0.98 for Labour coping scale. The reliability of the labour coping scale was assessed by the test-retest method which was found to be reliable. ($r=0.95$)

The subjects were explained about the purpose of the study. Informed consent was taken from subjects and confidentiality of information was assured. 3 sessions of 20 min. childbirth birth preparedness programme were given to Primigravida mothers of experimental group in their subsequent antenatal visits. They were trained about various strategies to cope with Labour. Whereas Primigravida mothers in the Control group were given Routine care. The intrapartum coping was assessed using Labour coping scale during labour. The data collected by the investigators were transferred to a master sheet. Descriptive statistics was used to explain the socio-demographical profile of study subjects and inferential statistics like t test were used to analyze difference in coping behaviors between two groups.

Results

The study included total 60 subjects 30 in each group. Most participants were aged 20-25 years (63.3% control, 46.66% experimental), In the control group, 53.33% had secondary

education, while 56.66% of the experimental group had graduate or higher education. Most participants were Hindu (90% control, 86.66% experimental), 73.33% of participants in both groups were housewives, with 26.66% engaged in private or government jobs. 80% of the control group and 83.33% of the experimental group had monthly income over Rs. 15,000. 43.33% of the experimental group and 56.66% of the control group lived in rural areas. 77% of the control group and 80% of the experimental group were from nuclear families. 100% of participants had no past gynecological issues. 93% of participants in both groups were unaware of CBPP, while 6.66% had some knowledge (Table 1).

Intrapartum coping behaviour results revealed that 87% of the control group were not coping, compared to 40% in the experimental group. Conversely, 53% of the experimental group were coping, in contrast to only 13% in the control group. Additionally, 7% of the experimental group is coping well, while no participants in the control group fall into this category. These findings suggest that the experimental group demonstrates better coping abilities than the control group, indicating a positive impact from the intervention or conditions specific to the experimental group (Figure 1).

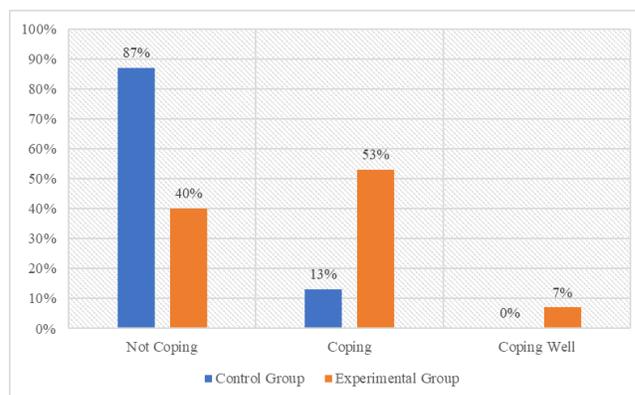


Fig 1. Distribution of subjects according to Intrapartum Coping Behaviour

The comparison between the intrapartum coping behaviours between experimental and control group (Table 2) revealed that experimental group has a higher average coping score (4.07 ± 1.14) compared to the control group (2.53 ± 0.73). Independent t test was used to compare the means of intrapartum coping behaviour between two groups and the results showed a significant difference in the intrapartum coping behaviour between two groups ($t\text{-value}=6.19$ and $p\text{-value}=0.001$, which is statistically significant at the 0.05 level). This suggests that the difference in coping behaviour between the two groups is significant, with the experimental group demonstrating significantly better coping abilities than the control group.

Table 1. Distribution of Subjects according to Socio-demographical Profile

	Control Group	Experimental Group
Age	f (%)	f (%)
20-25	19 (63.33%)	14 (46.66%)
26-30	11(36.66%)	16 (53.33%)
31-35	0 (0%)	0 (0%)
Educational level		
Primary	3 (5.33%)	0 (0%)
Secondary	16 (53.33%)	13(43.33%)
Graduate and above	11 (36.66%)	17(56.66%)
Husband educational level		
Primary	0 (0%)	0 (0%)
Secondary	16 (53.33%)	9(30%)
Graduate \$ above	14(46.66%)	21(70%)
Religion		
Hindu	27(90%)	26(86.66%)
Muslim	2(6.66%)	4(13.33%)
Sikh	1(3.33%)	0 (0%)
Christian	0 (0%)	0 (0%)
Occupation		
Housewife	22(73.33%)	22(73.33%)
Business Women	0 (0%)	0 (0%)
Private/government job	8(26.66%)	8(26.66%)
Average monthly family income		
<5000	0 (0%)	0 (0%)
5001-10000	0 (0%)	0 (0%)
10001-15000	6 (20%)	5 (16.66%)
>15000	24 (80%)	25 (83.33%)
Area of residence		
Urban	13 (43.33%)	17(56.66%)
Rural	17 (56.66%)	13 (43.33%)
Type of family		
Joint family	7 (23.33%)	6 (20%)
Nuclear family	23 (76.66%)	24 (80%)
Extended family	0 (0%)	0 (0%)
Any past Gynecological history		
Present	0 (0%)	0 (0%)
Absent	30 (100%)	30 (100%)
Knowledge regarding CBPP		
Yes	2 (6.66%)	2 (6.66%)
No	28 (93.33%)	28 (93.33%)

Table 2. Comparison of mean intrapartum coping behaviour between experimental and control group

Groups	Mean	t-value	p-value
Control	2.53±0.73	6.19	0.001*
Experimental	4.07±1.14		

*Significant as p Value < 0.05

The chi-square test was used to find the association of intrapartum coping behavior with selected socio-demographical variables. Significant association (at 0.05 level) was found between intrapartum coping behaviour and mother’s education ($X^2=7.97$, p value=0.019 for control group and $X^2=8.02$, p value=0.018 for the experimental group), husband’s education ($X^2=5.27$, p value=0.022 for control group and $X^2=7.78$, p value=0.020 for experimental group) and occupation ($X^2=12.69$, p value=0.001 for control group and $X^2=7.64$, p value=0.022 for experimental group).

Discussion

Intrapartum coping is crucial for improving the overall child-birth experience and outcomes for both the mother and the newborn. Effective coping strategies during labour can significantly reduce maternal anxiety, pain perception, and the need for pharmacological interventions. The present study provides compelling evidence of the efficacy of childbirth preparedness programme in enhancing intrapartum coping behaviours among pregnant women. The observed significant difference in intrapartum coping behaviour between the experimental and control groups underscores the potential benefits of such interventions. In the present study experimental group’s significantly higher mean intrapartum coping score (4.07 ± 1.14) compared to the control group (2.53 ± 0.73), with a p-value of 0.001, indicates that the intervention was effective in improving coping behaviours. This aligns with findings from Sharma N. et al., who demonstrated that a childbirth education program markedly improved knowledge, intrapartum behaviour, and pregnancy outcomes among primigravida mothers.¹⁸ Their study found that structured education programs significantly enhanced women’s ability to manage labour, which supports our findings that similar interventions can improve coping strategies during childbirth. Similarly, Mueller et al. found that childbirth education programs significantly improved maternity outcomes and maternal satisfaction.¹⁹ This study emphasized that women who participated in such programs were better prepared for labour and reported higher satisfaction with their childbirth experience, which underscores the importance of integrating educational interventions into prenatal care to support women in managing labour more effectively²⁰.

The study reported significant associations between intrapartum coping behaviour and various socio-demographic

factors, particularly maternal education, and occupation. The importance of maternal education is supported by Ketema *et al.*, who conducted a systematic review and meta-analysis on the effects of maternal education on birth preparedness and complication readiness among Ethiopian women. They found that higher maternal education levels were positively correlated with better birth preparedness and coping strategies. This supports our observation that women with higher educational levels exhibited improved coping behaviours, likely due to better knowledge and preparedness for childbirth.

The role of occupation also emerged as significant in the present study. This aligns with broader literature indicating that women's work status and associated stress levels can impact their coping strategies. Women in different occupational roles may experience varying levels of support and stress, influencing their coping abilities during childbirth.

While this study provides valuable insights, it is not without limitations. The relatively small sample size and specific socio-economic context of the participants may limit the generalizability of the findings. Future research should involve larger and more diverse populations to validate these results and explore the effectiveness of various types of educational interventions across different settings. Additionally, longitudinal studies could provide insights into the long-term impact of educational interventions on intrapartum coping behaviours and overall maternal and neonatal outcomes.

Conclusion

The study underscores the significant impact of Child birth preparedness programme on improving intrapartum coping behaviours. The Significant association between maternal education and coping strategies, supported by existing literature, highlights the need for customized educational programs in prenatal care. Comprehensive education on coping strategies, labour management, and childbirth preparedness can bridge the gap in coping abilities, thereby improving overall intrapartum experiences.

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Author's Contribution

All authors contributed equally to the study design, data collection and analysis, data interpretation, manuscript drafting, and critical revision.

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