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Original Research Article

The effectiveness of video assisted childbirth education on intrapartum behavior among primigravida mothers attending tertiary care teaching hospital in south India. a randomized controlled trial

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ABSTRACT

Background: Intrapartum behaviour, or the coping responses exhibited during labor and delivery, plays a crucial role in the well-being of both the mother and the newborn, especially among primigravida women. Providing structured education on the labour process can enhance confidence and reduce behavioural difficulties during childbirth. The study aimed to assess the effect of Video-Assisted Childbirth Education (VACE) on intrapartum behaviour among primigravida mothers.

Methods: A single-blind randomised controlled trial was conducted among 80 primigravida women at 36 weeks of gestation attending a tertiary care antenatal clinic in South India. After confirming participation, a tailored childbirth education video was shown to the experimental group during their antenatal visit and reinforced one week later through WhatsApp or the next clinic visit. Upon admission for delivery, intrapartum behaviour was assessed by an independent observer using a standardised behaviour checklist. The effectiveness of VACE was analysed using an independent t-test.

Results: The mean intrapartum behaviour score before reporting to the labour room was significantly higher in the experimental group (26.50 ± 2.34) compared to the control group (7.50 ± 4.54; $P < 0.001$). Across all four stages of labour, the experimental group also showed significantly better mean scores (65.67 ± 5.91) than the control group (35.0 ± 4.57; $P < 0.001$), indicating substantial improvement in coping behaviour following VACE.

Conclusion: Video-Assisted Childbirth Education is effective in improving intrapartum behaviour and enhancing compliance among primigravida mothers during labour.

Keywords: Video-assisted childbirth education, Primigravida, Intrapartum behaviour

INTRODUCTION

Pregnancy and childbirth are major events in a woman's life, involving significant physiological and psychological changes.[1,2] Inadequate mental or physical preparation may lead to anxiety, fear, and uncertainty about childbirth.[3,4] Fear of pain, perineal damage, low self-efficacy, postpartum sexual dysfunction, and maternal or neonatal death are important contributors to fear of childbirth.[5] This fear has reduced preference for natural birth and may influence women to choose Cesarean delivery without medical necessity.[6-8] Fear of severe labour pain and lack of awareness about C-section side effects are major reasons for this choice.[9] Fear of childbirth is generally higher among primigravida mothers than multiparous women.[10]

When women are well informed about the events of labour, their involvement in the childbirth process results in favourable pregnancy outcomes and positive postnatal

physical and psychological effects.[11] Video-assisted childbirth education is a simple and effective method that can be implemented by healthcare providers to increase awareness among primigravida mothers, as it has been shown to reduce anxiety and pain perception during labour and improve outcomes in normal vaginal delivery.[12]

Therefore, the present study was conducted among primigravid women attending a tertiary care teaching hospital in Puducherry, South India, to assess the effect of video-assisted teaching on intrapartum behaviour. The findings aim to support integrating childbirth education counselling into routine antenatal care to promote expectant behaviour during labour room admission and enhance maternal compliance during childbirth.

Study population

This randomised controlled study was conducted between September 2023 and March 2024 in the Antenatal Clinic of a tertiary care teaching hospital in Pondicherry. The study included 80 registered primigravida mothers with a normal course of pregnancy who had completed 36–37 weeks of gestation. Participants were randomly allocated to experimental and control groups using block randomisation, with allocation concealment ensured through sealed, opaque, serially numbered envelopes.

Data collection tool and procedure

The data collection tools included a socio-demographic proforma capturing age, residence, religion, type of family, educational level, and source of previous knowledge. Intrapartum behaviour was assessed using a four-point Likert-based 27-item observation checklist—seven items for behaviour at labour room reporting and 20 items for behaviour across the four stages of labour. The tool showed strong content validity (CVI=0.99) and acceptable reliability (α=0.70).

Eligible mothers were approached, informed about the study, and written consent was obtained. Baseline data were collected from both groups. The experimental group received a video-assisted childbirth education session during their antenatal clinic visit; the control group received routine antenatal care. The 22-minute 5-second Tamil video covered physiological and psychological changes in late pregnancy, the labour process, relaxation and bearing-down techniques, breastfeeding, and pregnant women's rights. The video was validated by four experts, pretested among three pregnant women, and reviewed by a technical expert.

Mobile numbers were collected, and separate WhatsApp groups were created for both groups. On day 7, the second video session was shared with the experimental group via WhatsApp or provided during their next antenatal visit if WhatsApp access was unavailable. Participants informed the researcher upon hospital admission, after which intrapartum behaviour was observed by an independent assessor using the validated checklist. Figure 1 illustrates the study design flowchart.

Sample size

The sample size of 80 was calculated using OpenEpi software 3.0, based on a previous study with a baseline mean (SD) knowledge score of 11.1 (5). A minimum expected improvement to 15.1 (4.8), with a 95% confidence interval, 80% power, and 10% anticipated loss to follow-up, was used to determine the required sample.

Ethical clearance

Ethical approval was obtained from the Institutional Human Ethical Committee (Ref No: JIP/CON/IEC/M.Sc/2022/OBG/3 dated 15/05/2023). The study was registered with the Clinical Trials Registry of India (CTRI/2023/09/057243 dated 04/09/2023).

RESULTS

The socio-demographic characteristics of the experimental and control groups are presented in Table 1. The groups were comparable with respect to age, religion, family type, and source of information, with no statistically significant differences observed ($p>0.05$). However, a significant difference was observed in educational status between the two groups ($\chi^2=7.29$, $p=0.023$), with a higher proportion of graduates in the control group (82.5%) than in the experimental group (57.5%).

Table 2 shows the intrapartum behaviour of primigravida mothers. Before reporting to the labour room, 95.5% of mothers in the experimental group demonstrated good compliance compared with none in the control group, while 45% of mothers in the control group showed non-compliance. The difference was statistically significant ($\chi^2=74.66$, $p<0.001$). Across all four stages of labour, 90% of mothers in the experimental group demonstrated good compliance compared with none in the control group, while 87.5% of the control group had poor compliance ($\chi^2=71.11$, $p<0.001$).

Table 3 demonstrates a significant difference in behaviour scores between the experimental and control groups. Before reporting to the labour room, the experimental group had a higher mean behaviour score than the control group (26.50±2.34 vs. 7.50±4.54), with a mean difference of 19.0 ($t=23.497$, $p=0.0001$). Similarly, across all four stages of labour, the experimental group had a significantly higher mean behaviour score than the control group (65.67±5.91 vs. 34.85±4.57), with a mean difference of 30.82 ($t=26.077$, $p=0.0001$).

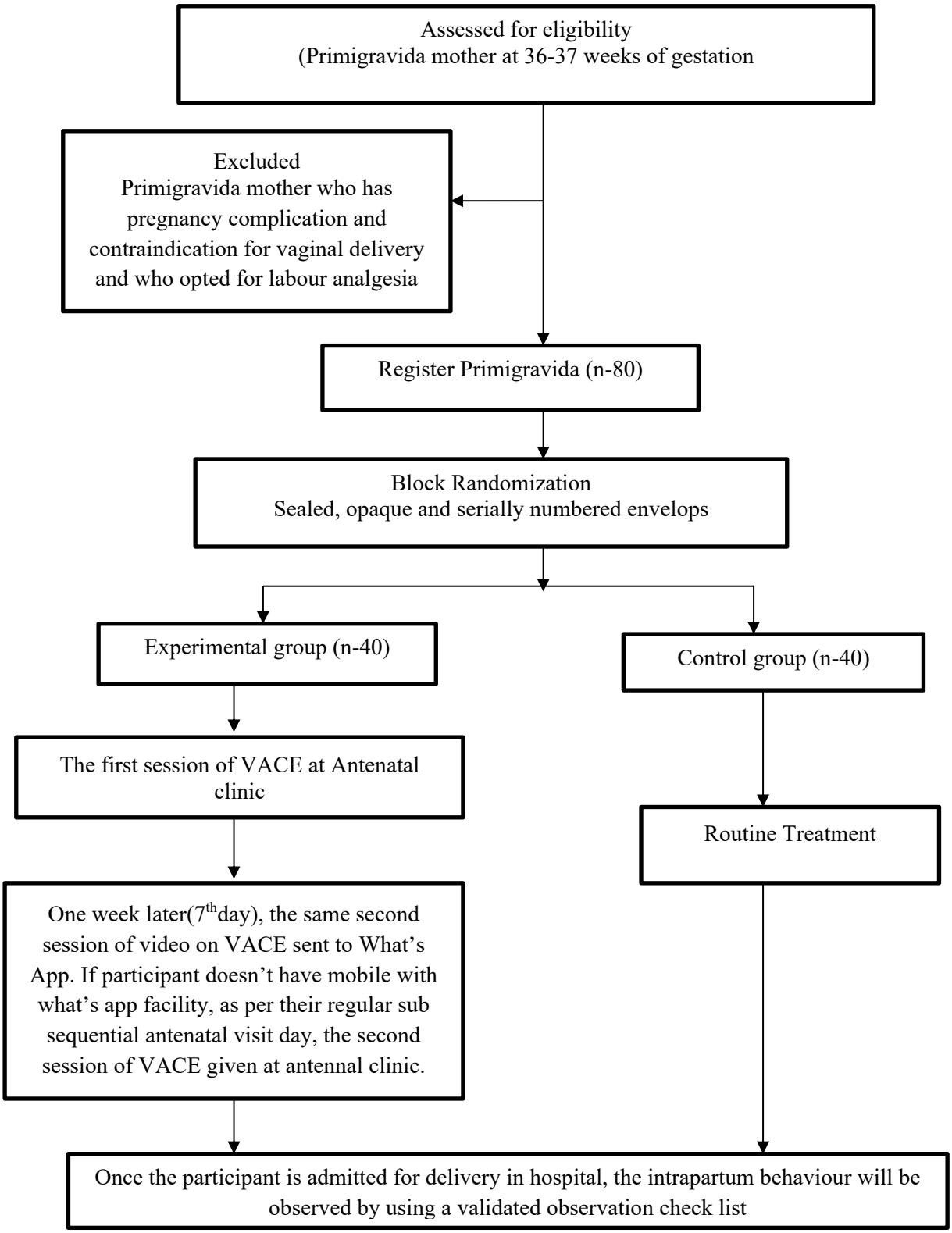


Figure 1: Diagrammatic flow chart for study design.

Table 1: Relative risk of abnormal Doppler indices with adverse perinatal outcome.

Variables	Experimental group (n=40)	Control group (n=40)	Chi-square value (df)	P Value
	F (%)	F (%)		
Age in years				
18 – 22	18 – 22	18 – 22	4.602 (3)	0.203
23 – 26	23 – 26	23 – 26		
27 – 30	27 – 30	27 – 30		
≥31	3 (7.5)	1 (2.5)		
Religion				
Hindu	35 (87.5)	39 (97.5)	3.55 (2)	0.170
Christian	2 (5.0)	1 (2.5)		
Muslim	3 (7.5)	0		
Education				
Primary /Secondary	12 (30.0)	3 (7.5)	7.29 (2)	0.023*
Higher Secondary	5 (12.5)	4 (10.0)		
Graduate	23 (57.5)	33 (82.5)		
Family type				
Nuclear	12 (30.0)	14 (35.0)	0.22 (1)	0.633
Joint	28 (70.0)	26 (65.0)		
Received information				
Health personnel	1 (2.4)	0	2.46 (2)	0.291
Other personal / Media	4 (9.8)	8 (20.0)		

Table 2: Intrapartum behavior among primigravida mothers in the experimental and control group.

Level of Behaviour	Experimental Group	Control Group	X^2 /t	P value
	F (%)	F (%)		
Before reporting to the labour room				
Non-compliance	0	18 (45.0)	74.66	<0.001*
Poor compliance	0	18 (45.0)		
Average compliance	2 (5.0)	4 (10.0)		
Good compliance	38 (95.5)	0		
Mean /SD#	26.50 (2.34)	7.50 (4.54)	23.49	<0.001*
All four stages of labour				
Non-compliance	0	0	71.11	<0.001*
Poor compliance	0	35 (87.5)		
Average compliance	4 (10.0)	5 (12.5)		
Good compliance	36 (90.0)	0		
Mean /SD#	65.67 (5.91)	34.85 (4.57)	26.07	<0.001*

*p<0.001 statistically Significant.

Table 3: Comparison of behaviour scores between the experimental and control group.

Behaviour	Median	Mean	S.D	Mean Difference	Student Independent "t" & p value
Before reporting to the labour room					
Experimental Group	28.0	26.50	2.34	19.0	t=23.497 p=0.0001, S***
Control Group	8.0	7.50	4.54		
All four stages of labour					
Experimental Group	66.50	65.67	5.91	30.82	t=26.077 p=0.0001, S***
Control Group	35.0	34.85	4.57		

***p<0.001, S – Significant

DISCUSSION

Principal findings

The findings of the present study demonstrated significantly better expectant intrapartum behaviour and compliance among primigravida mothers in the experimental group, both at the time of reporting to the labour room and throughout all four stages of labour. These findings are consistent with previous evidence showing that structured childbirth education can improve knowledge and intrapartum behaviour among primigravida mothers.[13] Similarly, video-assisted childbirth education has been shown to significantly enhance knowledge regarding labour and childbirth, improve intrapartum behaviour at the time of admission and throughout the four stages of labour, and contribute to favourable labour outcomes.[12,14]

Traditionally, maternity services have mainly focused on reducing perinatal and infant mortality rates, while women's feelings and experiences of childbirth have often been neglected. Over the last ten years, the focus on supporting pregnant women's mental health has increased due to growing awareness of the importance of woman-centred maternity care.[15] Recent research highlights that feelings of control during labour significantly influence maternal childbirth satisfaction, and that women benefit from accurate information that prepares them for the birth process.

The current study was conducted to investigate the concept of Video-Assisted Childbirth Education and its effect on behavioural outcomes during labour. The observed improvement in intrapartum behaviour among mothers in the experimental group suggests that providing structured, visual childbirth education enhances preparedness, empowerment, and behaviour during labour, consistent with previously published evidence.

Strengths and limitations

The study had several advantages, including the use of a structured and validated observational checklist that ensured systematic and reliable data collection. In addition, observations were carried out from the time of admission through all four stages of labour among primigravida mothers, providing a comprehensive understanding of the labour process and strengthening the reliability of the findings. However, the study also had limitations. It was conducted in a single-centre tertiary care hospital in Southern India, which may limit the generalizability of the results to other healthcare settings. Furthermore, as the study was undertaken as part of a postgraduate program, the sample size, scope, and duration of data collection were constrained by academic timelines and available resources.

Clinical implication

The findings of this study show that video-assisted childbirth education significantly improves the intrapartum behaviour of primigravida mothers, both when they report to the labour room and throughout all stages of labour. This indicates a strong potential for incorporating such educational interventions into routine antenatal care. By providing structured, visual, and easy-to-understand information, video-based education enhances maternal preparedness, reduces anxiety, and promotes effective coping during labour. Implementing this approach in antenatal clinics, especially in resource-limited settings, can be a cost-effective strategy to support woman-centred maternity care and improve labour outcomes. Nurses, midwives, and family physicians at peripheral health centers can easily adopt this method, thereby strengthening maternal empowerment, participation, and the overall childbirth experience.

CONCLUSION

The primigravida mothers who were exposed to video-assisted childbirth education demonstrated good compliance at the time of reporting to the labour room for delivery and throughout all four stages of labour, compared to those who were not exposed to the intervention. Therefore, video-assisted childbirth education can be used as a simple and cost-effective strategy to enhance good compliance among pregnant primigravida women in India and can be effectively implemented by nurses, midwives, and family physicians at peripheral health centres

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