International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622
Indexing: Embase
Impact Factor (RJIF): 6.71

www.gynaecologyjournal.com
2025; 9(6): 1091-1093
Received: 19-10-2025
Accepted: 23-11-2025

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Impact of continuous counselling onmaternal decision regarding mode of delivery

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DOI: https://www.doi.org/10.33545/gynae.2025.v9.i6e.1771

Abstract
Aims and Background: The study aims to assess the impact of continuous counselling on maternal decision-making regarding the mode of delivery, with a focus on informed choices between vaginal delivery and caesarean section without medical indication. The increase in caesarean delivery on maternal request (CDMR) has raised concerns regarding maternal and neonatal health and healthcare resources.
Methods: A pseudo-randomized design was employed involving 580 pregnant women attending antenatal care at Kalinga Institute of Medical Sciences, Bhubaneswar. Participants were divided into two groups: an intervention group receiving continuous counselling and a control group receiving standard care. Data were collected on maternal preferences, delivery mode, and reasons for elective caesarean requests through questionnaires and medical records.
Results: The intervention group showed a significant reduction in the preference for CDMR, with 71.9% opting for vaginal delivery. Key factors influencing maternal decisions included socioeconomic status, educational level, and occupation. Statistical analysis indicated that counselling significantly impacted delivery mode and reduced hospital stay.
Conclusion: Continuous counselling positively influenced maternal decision-making, leading to a preference for vaginal delivery and reduced CDMR rates. These findings underscore the importance of counselling in promoting informed choices, potentially reducing unnecessary caesarean sections and improving maternal and neonatal outcomes.

Keywords: CDMR, LSCS, VD

Introduction
Caesarean delivery is among the most common surgeries worldwide, intended to reduce maternal and perinatal morbidity and mortality when medically indicated. However, recent years have seen a rise in caesarean deliveries performed without medical indications, often upon maternal request (CDMR). This trend, while facilitating maternal choice, raises ethical and clinical concerns due to the risks associated with caesarean delivery, including infections, prolonged recovery times, and complications in future pregnancies. In particular, CDMR carries higher risks for both the mother and infant compared to vaginal delivery, with potential issues such as increased neonatal intensive care admissions, delayed infant development, and future health risks like asthma and obesity [1].
Research indicates that CDMR is more prevalent among certain demographic groups, including women with higher socioeconomic status, advanced maternal age, and greater educational attainment. These factors, along with social influences and concerns about labor pain, often drive the preference for CDMR despite a lack of clear medical indication. Studies also suggest that healthcare providers' counselling and guidance play a significant role in influencing maternal decisions regarding delivery mode [2].
The objective of this study is to examine the impact of continuous counselling on maternal decision-making for delivery mode. By providing pregnant women with consistent information throughout pregnancy, we hypothesize that continuous counselling will lead to an increased preference for vaginal delivery, improved maternal and neonatal outcomes, and reduced rates of CDMR. Through a pseudo-randomized design, this study aims to evaluate how ongoing counselling affects delivery decisions and associated health outcomes [3].

Materials and Methods
Study Setting
The study was conducted at Pradyumna Bal Memorial Hospital, affiliated with the Kalinga

Institute of Medical Sciences, Bhubaneswar, Odisha. The hospital offers a range of obstetric and neonatal services, making it an ideal setting for assessing counselling's impact on delivery mode preferences.

Study Design and Participants

This study utilized a pseudo-randomized design, recruiting 580 pregnant women attending the hospital's antenatal clinics between 2022 and 2024. Participants were divided into two groups: a counselling intervention group and a control group. The inclusion criteria encompassed all pregnant women with uncomplicated pregnancies, while those with prior caesarean sections, abnormal presentations, placenta previa, or co-morbidities were excluded.

Data Collection

Data were collected through a combination of structured questionnaires, in-depth interviews, and hospital medical records. Baseline data collection captured demographic information, initial delivery mode preferences, and health history. Post-counselling data included participants' revised preferences and, eventually, their final delivery mode as recorded in labour room records. All participants provided informed consent, and data were anonymized.

Intervention: The intervention group received continuous counselling throughout each trimester. Each 30-minute counselling session covered the benefits of vaginal delivery, risks of caesarean without medical indication, and potential long-term outcomes. Sessions were conducted by a team of obstetricians and midwives who provided evidence-based information in an interactive format, addressing participants' questions and concerns.

Statistical Analysis

Descriptive statistics summarized demographic characteristics and delivery outcomes. Chi-square tests assessed associations between counselling and delivery mode choice, while t-tests compared continuous variables such as age and hospital stay duration across groups. Logistic regression examined predictors of CDMR, controlling for confounders. Statistical significance was set at $p < 0.05$, and analyses were performed using SPSS software.

Ethical Considerations

The study was approved by the Institutional Ethics Committee. All participants provided informed consent, and data confidentiality was maintained.

Results

Table 1: Participant Demographics

Variable	Counselled Group (n=356)	Non-Counselled Group (n=224)	Total (n=580)	Chi-Square Value	p-value
Age < 25	24.3%	24.2%	24.3%	0.150	0.928
Age 26-30	55.1%	53.9%	54.6%		
SES Low	6.2%	2.7%	4.8%	11.984	0.007*
Primary Education	54.2%	34.8%	46.7%	21.928	<0.001*

"The demographic characteristics of the 580 participants. There was no significant difference in age distribution between the counselled and non-counselled groups ($p = 0.928$), with the majority aged between 26-30 years. SES and education level showed statistically significant associations with counselling status ($p = 0.007$ and $p < 0.001$, respectively), as the counselled group had higher proportions of middle and upper-middle SES and participants with lower education levels (table-1)".

Table 2: Mode of Delivery Outcomes

Mode of Delivery	Counselled Group (n=356)	Non-Counselled Group (n=224)	Chi-Square Value	p-value
LSCS	28.1%	100%	288.351	<0.001*
NVD	71.9%	0%		

"The mode of delivery differed significantly between groups ($p < 0.001$). Among the counselled group, 71.9% opted for a vaginal delivery (VD), compared to none in the non-counselled group, where 100% underwent caesarean delivery. This finding underscores counselling's potential impact in encouraging VD over caesarean without medical necessity (table-2)".

Table 3: Indications for LSCS

Indication	Counselled Group (%)	Non-Counselled Group (%)	Total (%)	Chi-Square Value	p-value
CDMR	19.4%	87.9%	45.9%	318.198	<0.001*

"In the non-counselled group, 87.9% of caesarean deliveries were performed on maternal request (CDMR). In contrast, only 19.4% of caesareans in the counselled group were due to CDMR. Other indications, such as foetal distress, non-progressive labour (NPOL), and failed induction, were more common in the counselled group, indicating that medical rather than elective reasons drove LSCS in this group (table-3)".

Table 4: Mean Duration of Hospital Stay

Group	N	Mean Days	SD	SEM	p-value
Counselled	356	3.3	1.83	0.10	<0.001*
Non-Counselled	224	5.6	1.55		

"The mean hospital stay was significantly shorter for the counselled group (3.3 days) compared to the non-counselled group (5.6 days; $p < 0.001$). This reduction in hospital stay duration supports counselling's effectiveness in promoting VD, which typically requires less recovery time (table-4)".

Table 5: Delivery Mode Preference by Education Level

Education Level	LSCS in Counselled Group (%)	LSCS in Non-Counselled Group (%)	VD in Counselled Group (%)	VD in Non-Counselled Group (%)	Total (%)	Chi-Square Value	p-value
Primary School	34.5%	78.2%	65.5%	21.8%	100%		<0.001*
Middle School	46.1%	82.3%	53.9%	17.7%	100%		<0.001*
High School	28.2%	90.1%	71.8%	9.9%	100%		<0.001*

"Participants with lower educational levels (primary and middle school) showed the greatest shift in preference toward VD following counselling. This suggests that counselling may have the most pronounced impact on individuals who may otherwise lack comprehensive knowledge of the risks and benefits of delivery modes (table-5)".

Discussion

The findings demonstrate that continuous counselling significantly influences maternal decision-making, reducing CDMR rates and promoting informed choices. The increase in VD preference among the counselled group highlights the effectiveness of sustained counselling in addressing common fears and misconceptions about vaginal delivery. These results align with studies suggesting that comprehensive, continuous counselling empowers expectant mothers to make well-informed decisions that support both maternal and neonatal health [4, 5, 6].

Socioeconomic and educational factors were also shown to affect counselling outcomes, as women with lower SES and education levels were more likely to benefit from counselling interventions. This may indicate that less educated and lower SES women lack prior access to detailed, reliable information about delivery options, underscoring the need for accessible, inclusive counselling programs [7].

The shorter hospital stay associated with VD in the counselled group has implications for resource management in maternity care. By encouraging vaginal delivery when medically appropriate, healthcare systems can potentially reduce hospitalization costs and improve patient satisfaction [8].

The study's limitations include potential selection bias due to the pseudo-randomized design and SES differences between groups. Future research could address these limitations with randomized controlled trials in diverse settings to validate these findings [9, 10].

Conclusion

Our study concludes that regular counselling positively impacts maternal decision making by decreasing the demand for LSCS without any medical indication.

With the increases in number of vaginal deliveries obviously a shorter hospital stay will follow this leads to improved maternal satisfaction and also benefits the health care system.

This suggests that integrating counselling regarding the benefits of VD into routine antenatal care significantly benefits mother and helps in reducing the alarming rise in LSCS rates.

Conflict of Interest

Not available.

Financial Support

Not available.

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How to Cite This Article

Patil R, Patnaik M. Impact of continuous counselling onmaternal decision regarding mode of delivery. International Journal of Clinical Obstetrics and Gynaecology. 2025;9(6):1091-1093.