

## IMPACT OF PRENATAL BREASTFEEDING EDUCATION ON BREASTFEEDING MOTIVATION FOLLOWING CESAREAN DELIVERY

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### ABSTRACT

*Maternal motivation strongly influences exclusive breastfeeding, especially following cesarean delivery. This study evaluated the effect of an antenatal breastfeeding education package on motivation among third-trimester pregnant women planning cesarean section. A quasi-experimental one-group pretest–posttest design was implemented at RSU Sembiring Deli Tua with 54 participants who received a standardized education package (SOP, leaflet, demonstration, and discussion). Motivation was measured using a validated 12–60 Likert questionnaire before and after the intervention. Paired t-test compared pretest and posttest scores. Mean motivation increased from 38.2 (SD 6.1) at pretest to 46.5 (SD 5.2) at posttest, with a mean difference of +8.3 (SD\_diff 5.5); the improvement was statistically significant (paired  $t(53) = 11.09$ ,  $p < 0.001$ ). The proportion of participants in the high/very high motivation categories rose from 40.7% to 81.4%. Antenatal breastfeeding education significantly enhanced maternal motivation among women planning cesarean delivery; integrating this intervention into routine antenatal care is recommended.*

**Keywords** : *breastfeeding education; maternal motivation; cesarean delivery; exclusive breastfeeding*

### INTRODUCTION



Breastfeeding is the established optimal source of nutrition for infants, with strong evidence for short and long term benefits to infant and maternal health (Lumbiganon *et al.*, 2016). Nevertheless, exclusive breastfeeding rates remain lower than WHO targets in many settings, and multiple perinatal and health system barriers limit early initiation and continuation of breastfeeding (Dina and Djuwita, 2021). Mothers who undergo cesarean delivery face specific challenges delayed skin to skin contact, postoperative pain, reduced early initiation opportunities, and difficulties with positioning and latching that can reduce breastfeeding initiation and exclusivity compared with vaginal birth (Widyaningsih and Nur khayati, 2023). Antenatal (prenatal) breastfeeding education and structured support are widely used strategies intended to prepare women for breastfeeding and to reduce early cessation (Lumbiganon *et al.*, 2016). Systematic reviews and major evidence syntheses show mixed findings: some trials and program evaluations report improvements in breastfeeding knowledge, self efficacy, and short term breastfeeding uptake, while aggregate evidence finds inconsistent effects on exclusive breastfeeding at 3–6 months partly because interventions, comparators, settings, and outcome measures vary widely . This body of work suggests antenatal education can help, but the magnitude and mechanism of effect are uncertain and likely context-dependent (Khatib *et al.*, 2023).

One important mechanism that has received relatively little attention in intervention studies is maternal motivation as a distinct, measurable psychological mediator between antenatal education and later breastfeeding behavior (Gökşen; and Özkan, 2024). Motivation conceptualized and measured using instruments such as the Breastfeeding Motivation Scale (BMS) derived from Self Determination Theory captures intrinsic and extrinsic drivers that influence persistence when breastfeeding is challenging (Lau *et al.*, 2025). Although psychometric work has described reliable motivation measures and small studies have linked higher autonomous motivation to better breastfeeding persistence, few intervention trials specifically target or measure motivation as a primary proximal outcome, and even fewer focus on populations planning cesarean delivery (Yu and others, 2024).

This gap matters for both science and practice. If antenatal education mainly increases knowledge but not motivation (or increases controlled rather than autonomous motivation), the intervention may fail to translate into sustained exclusive breastfeeding, especially in mothers facing the extra physical and logistic barriers after cesarean birth (Wen *et al.*, 2020). Conversely, if a structured, multicomponent antenatal package (SOP, leaflet, practical demonstration, group discussion) can demonstrably raise maternal motivation among third-trimester women planning cesarean delivery, that would identify a modifiable proximal

outcome likely to improve subsequent breastfeeding behavior and would justify broader implementation and evaluation of motivation-focused content (Carrasco-López *et al.*, 2025). Evidence from targeted post-cesarean interventions and nurse-led programs suggests that tailored support around the time of surgery can improve early breastfeeding outcomes, but the preoperative (antenatal) motivational pathway remains under-evaluated (Yirong He, Xin He, Xinru Bao, Min Qiu, Juan Du, Ting Zhang, Min Shu, 2025).

**Research objectives.** The general objective is to evaluate the effect of a standardized antenatal breastfeeding education package (SOP + leaflet + demonstration + group discussion) on maternal motivation in third-trimester women planning cesarean delivery. Specific objectives are: (1) to measure and compare mean motivation scores before and after the intervention using a validated questionnaire; and (2) to describe changes in motivation categories (very low → very high) following the education package. These objectives address a clear methodological and substantive gap by making motivation (a psychological mediator) the primary outcome in a population at elevated risk for early breastfeeding difficulties.

## **METHOD**

This study employed a quasi experimental one group pretest posttest design to evaluate the effect of an antenatal breastfeeding education package on maternal motivation among third-trimester pregnant women planning cesarean delivery. Motivation measurement was conducted prior to the antenatal education before the cesarean delivery, with the education itself taking place during the preparation for the cesarean birth. Post-operative motivation was assessed on the first day after the cesarean delivery and continued through day three. Finally, motivation was reassessed after the education session, just before the patient's discharge from the hospital. Conducted at RSU Sembiring Deli Tua from Januari to June 2025, the study involved 54 purposively selected participants who met the inclusion criteria. The independent variable was the antenatal breastfeeding education package (standard operating procedure, leaflet, demonstration, and discussion), and the dependent variable was maternal motivation measured using a validated 12-item Likert questionnaire (score range 12–60). Data were collected through pretest and posttest questionnaires administered before and after the educational session, which lasted 30–40 minutes and was delivered by trained midwives or lactation counselors. Descriptive statistics summarized respondent characteristics, and a paired t-test analyzed differences in pretest and posttest motivation scores after normality testing, with a significance level of  $p < 0.05$ . The research team consisted of the principal investigator (coordination, recruitment, data collection), academic supervisors (methodological oversight),

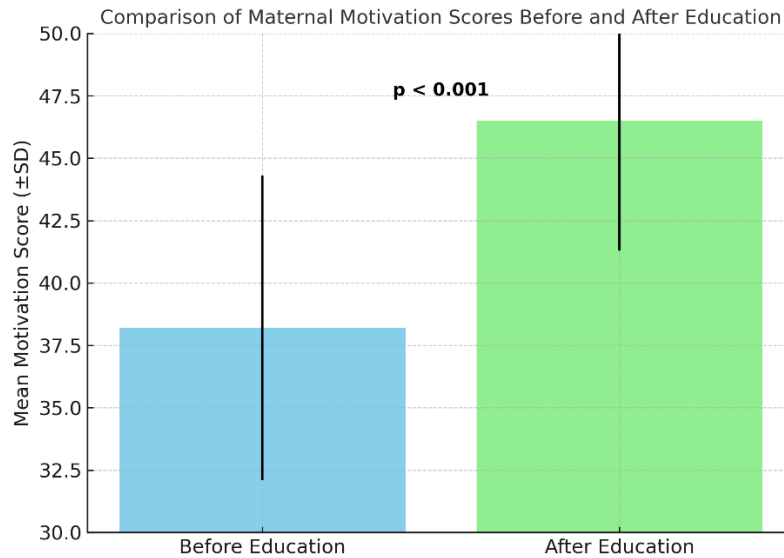
hospital staff (logistical support), and trained educators (intervention delivery). Ethical approval was obtained from the institutional ethics committee, and all participants provided written informed consent before participation.

## RESULTS AND DISCUSSION

From the population of third-trimester pregnant women who met the inclusion criteria at RSU Sembiring Deli Tua, the sample size was calculated using the Slovin formula, resulting in  $n = 54$ , and the samples were selected using purposive sampling as stated in the proposal. All 54 respondents completed the entire sequence (pretest → educational intervention → posttest), with no loss to follow-up.

Table 1. Characteristics of Respondents (N = 54)

Variable	Frequency (n)	Percentage (%)
Educational level		
1. SD	6	11.1
2. SMP	4	7.4
3. SMA	28	51.9
4. Diploma/Sarjana	16	29.6
Occupation		
1. Housewife	32	59.3
2. Working mother	22	40.7
Parity		
1. Primiparous	30	55.6
2. Multiparous	24	44.4
Exclusive breastfeeding plan before intervention		
1. Yes	36	66.7
2. No	18	33.3



Picture 1. Maternal Motivation before and after lactating education

The findings of this study showed a significant improvement in maternal motivation following antenatal breastfeeding education among third-trimester pregnant women planning cesarean delivery. The mean motivation score increased from  $38.2 \pm 6.1$  before to  $46.5 \pm 5.2$  after the intervention, with a significant difference ( $p < 0.001$ ). The proportion of participants with high or very high motivation also rose markedly, indicating that the structured education package consisting of standard procedures, leaflet distribution, demonstrations, and discussions was effective in enhancing mothers' readiness and confidence to breastfeed. These results are in line with previous studies (Lumbiganon *et al.*, 2016; Patnode *et al.*, 2016; Ariani *et al.*, 2024), showing that antenatal education strengthens maternal preparedness for breastfeeding, and they extend prior work by focusing specifically on motivation as a measurable psychological outcome (Hadisuyatmana *et al.*, 2021).

This improvement reflects the theoretical principles of Self-Determination Theory, where interactive, autonomy-supportive education fosters intrinsic motivation (Barta, 2024). The program's participatory methods likely helped mothers feel more competent and self directed, reinforcing internal commitment to breastfeed (Webber, Wodwaski and Courtney, 2021). Compared with earlier studies that focused on knowledge or postnatal interventions, this research demonstrates that motivational gains can occur even before birth, helping mothers overcome cesarean related barriers such as pain and delayed initiation (Hu *et al.*, 2020). These findings underscore the importance of incorporating structured, culturally relevant breastfeeding education into routine antenatal care to promote motivation as a key determinant of successful breastfeeding behavior (Dukuzumuremyi *et al.*, 2020).

## CONCLUSION

This study demonstrated that antenatal breastfeeding education significantly increased maternal motivation among third-trimester pregnant women planning cesarean delivery. The mean motivation score improved from  $38.2 \pm 6.1$  before to  $46.5 \pm 5.2$  after the intervention, with a statistically significant difference ( $p < 0.001$ ). The proportion of mothers with high or very high motivation also rose substantially after receiving the educational package consisting of standardized procedures, leaflets, demonstrations, and discussions. These findings confirm that structured antenatal education can effectively strengthen psychological readiness for breastfeeding, even in populations facing potential barriers due to cesarean birth.

The implications of this study suggest that integrating standardized breastfeeding education into routine antenatal care can help foster maternal motivation, an important predictor of successful exclusive breastfeeding. Health facilities and policymakers should ensure that antenatal programs include interactive and supportive components that enhance mothers' confidence and intrinsic drive to breastfeed. Further research with control groups and follow up after delivery is recommended to examine whether the increased motivation observed translates into higher rates of breastfeeding initiation and exclusivity in the postpartum period.

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