International Journal of Contemporary Pediatrics
Chawla A et al. Int J Contemp Pediatr. 2026 Oct;13(10):2006-2013
https://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291
DOI: https://dx.doi.org/10.18203/2349-3291.ijcp20263305

Original Research Article

Impact of mode of delivery on early initiation and sustained exclusive breastfeeding in infants: a prospective cohort study

Aditi Chawla[1], Mukesh Kumar Singh[1], Sandeep Kumar Kanwal[2]*, Sarita Singh[1], Bindu Bajaj[1]

[1]Department of Obstetrics and Gynaecology, VMMC and Safdarjung Hospital, New Delhi, India
[2]Department of Paediatrics, VMMC and Safdarjung Hospital, New Delhi, India

Received: 31 July 2026
Accepted: 07 September 2026

***Correspondence:**
Dr. Sandeep Kumar Kanwal,
E-mail: drskumar811@gmail.com

ABSTRACT

Background: Early initiation of breastfeeding (EIBF) and exclusive breastfeeding (EBF) are critical determinants of neonatal and infant health. Caesarean section (CS) has been consistently associated with delayed initiation and early discontinuation of breastfeeding, but prospective evidence from institutional settings in India remains limited. Objectives were to evaluate the association between mode of delivery and EIBF; to assess the impact of early versus late initiation on EBF at day 3, 6 weeks, and 3 months postpartum; and to identify maternal and neonatal factors independently associated with failure of EBF.
Methods: This prospective observational cohort study was conducted in a self-declared baby-friendly tertiary hospital in North India between July and September 2023. Women with singleton pregnancies beyond 34 weeks' gestation were enrolled and followed until 3 months postpartum. Breastfeeding outcomes in infants were assessed at predefined intervals. Multivariable logistic regression was used to adjust for potential confounders.
Results: Among 585 women, 52% delivered vaginally and 48% by CS. EIBF occurred in 45% overall and was significantly lower following CS (15% vs 73%, $p<0.001$). EBF rates at day 3, 6 weeks, and 3 months were consistently lower in the CS group (79%, 55%, and 58.4%) compared to vaginal delivery (VD) (90%, 74.3%, and 71.6%). Caesarean delivery remained independently associated with failure of EBF at 6 weeks and 3 months. EIBF was a strong independent predictor of sustained EBF.
Conclusions: Despite a baby-friendly institutional environment, caesarean delivery remains a significant barrier to early initiation and sustained EBF in infants. Targeted, post-caesarean breastfeeding support strategies are urgently required.

Keywords: Breastfeeding, Exclusive, EBF, EIBF, Caesarean delivery

INTRODUCTION

Breastfeeding is universally recognized as essential for optimal neonatal growth, development, and survival. The World Health Organization (WHO) and UNICEF recommend initiation of breastfeeding within one hour of birth and EBF for the first six months of life.[1,2] Early initiation facilitates mother–infant bonding, promotes successful lactogenesis, and reduces neonatal morbidity and mortality.[3,4]

Despite global and national policy initiatives, breastfeeding indicators remain suboptimal.[5] In India, the National Family Health Survey-5 (NFHS-5) reports EIBF rates of approximately 42% and EBF rates of 63.7% among infants under six months.[6] Mode of delivery has emerged as a major determinant of breastfeeding practices, with CS consistently associated with delayed initiation and reduced breastfeeding duration.[7,8]

Although many studies have explored this association, most are cross-sectional or retrospective.[9] Evidence from

prospective studies conducted in baby-friendly hospitals, where breastfeeding promotion policies are uniformly implemented, is limited. Understanding whether caesarean delivery continues to adversely affect breastfeeding outcomes in such settings is essential for guiding targeted interventions.

METHODS

Study design and setting

This prospective observational cohort study was conducted in the Departments of Obstetrics and Gynaecology and Paediatrics of a tertiary-level public hospital in North India. The hospital conducts approximately 26,000 deliveries annually and follows WHO-aligned Baby-Friendly Hospital Initiative (BFHI) guidelines.[10,11]

Women with singleton pregnancies delivering beyond 34 weeks gestation were included. Exclusion criteria were multiple gestation, stillbirth, maternal or neonatal intensive care admission, and gestational age ≤34 weeks. Very preterm deliveries were excluded due to distinct feeding practices and neonatal morbidity profiles.

Sample size was calculated based non-EBF rates at 6 weeks postpartum. Assuming non- EBF prevalence of 45% in the general population and 59% among women undergoing caesarean delivery, with α=0.05 and 90% power, a minimum of 530 women were required. Allowing for 10% loss to follow-up, the sample size calculated to be 584.

A structured, interviewer-administered questionnaire was used. Data were collected on postnatal day 1, day 3, and at 6 weeks through face-to-face interviews. Follow-up assessments were conducted at 3 months postpartum (telephonic). Breastfeeding status was based on maternal self-report. EIBF was initiation within one hour of birth. EBF is feeding only breast milk with no additional liquids or solids

Data were analyzed using SPSS version 20. Descriptive statistics were expressed as proportions. Associations were explored using chi-square or Fisher's exact tests. Multivariable logistic regression models were constructed to identify independent predictors of EIBF and EBF at 6 weeks and 3 months. Adjusted odds ratios (aOR) with 95% confidence intervals (CI) were reported.

RESULTS

A total of 585 women were enrolled, of whom 305 (52%) had vaginal deliveries and 280 (48%) underwent CS. The demographic and delivery characteristics of the women (n=585) are in Table 1. The mean age of the participants was 24.2±2.6 years (18 to 38 years). Nearly all deliveries were primipara or parity two, booked and had more than three ANC visits. VD was 52% (n=305) as compared to 48% (n=280) CS. The incidence of CS was uniform throughout all age groups in women (p=0.337). Majority of women from lower-or middle-socioeconomic strata.

Overall, 45% of women-initiated breastfeeding within one hour of birth. EIBF was significantly lower among neonates following caesarean delivery compared to VD (15% vs 73%, p<0.001). Late initiation occurred in 84.6% of caesarean deliveries (Table 2). EBF rates among infants declined over time and were consistently lower in the caesarean group: Day 3: 79% (CS) vs 90% (VD), p<0.001, at 6 weeks: 55% (CS) vs 74.3% (VD), p<0.001 and at 3 months: 58.4% (CS) vs 71.6% (VD), p<0.001 (Table 3 and 4).

The maternal age, parity, BMI, gestational age, birth weight, were not significantly associated with EBF, whereas caesarean delivery remained significantly associated with failure of EBF at both 6 weeks and 3 months. Early initiation of breastfeeding was the strongest independent predictor of sustained EBF (p<.01).

Table 1: Demographic characteristics and mode of delivery.

Parameters	Mode of delivery		Significance, p value (p<0.05)
	VD, (n=305)	CS, (n=280)	
Woman's age (in years)			
<20	14 (4.6%)	6 (2.1%)	0.38
21-25	154 (50.5%)	133 (47.5%)	
26-30	105 (34.4%)	102 (36.4%)	
31-35	25 (8.2%)	29 (10.4%)	
>35	7 (2.3%)	10 (3.6%)	
Booking status			
Un booked	22 (7.2%)	22 (7.9%)	0.77
Booked	283 (92.8%)	258 (92.1%)	
BMI (kg/m^2)			
18.5-22.9	98 (32.1%)	66 (23.6%)	0.02
23-24.9	201 (65.9%)	166 (59.3%)	
≥25	6 (2.0%)	48 (17.1%)	0.001

Continued.

Parameters	Mode of delivery		Significance, p value (p<0.05)
	VD, (n=305)	CS, (n=280)	
Women's education			
Illiterate	47 (15.4%)	40 (14.3%)	0.90
Primary school	41 (13.4%)	40 (14.3%)	
Secondary school	102 (33.4%)	103 (36.8%)	
Intermediate	52 (17.0%)	43 (15.4%)	
College	63 (20.7%)	54 (19.3%)	
Women's occupation			
Homemaker	304 (99.7%)	278 (99.3%)	0.61
Employed	1 (0.3%)	2 (0.7%)	
Socio-economic status			
Upper	0 (0.0%)	0 (0.0%)	0.17
Upper middle	47 (15.4%)	56 (20.0%)	
Lower middle	254 (83.3%)	212 (75.7%)	
Upper lower	4 (1.3%)	12 (4.3%)	
Lower	0 (0.0%)	0 (0.0%)	
Type of family			
Nuclear	279 (91.5%)	245 (87.5%)	0.12
Joint	26 (8.5%)	35 (12.5%)	
Parity of the mother			
Primipara	169 (55.4%)	117 (41.8%)	0.03
P2	116 (38.0%)	141 (50.4%)	0.01
P3	20 (6.6%)	21 (7.5%)	
≥P4	0 (0.0%)	1 (0.4%)	
Number of ANC visit			
0	5 (1.6%)	2 (0.7%)	0.19
1-3	3 (1.0%)	0 (0.0%)	
>3	277 (90.8%)	265 (94.6%)	
Referred	20 (6.6%)	13 (4.6%)	
Awareness of breastfeeding (Yes)	286 (93.8%)	271 (96.8%)	0.09
Source of awareness of breastfeeding			
Family/friends	286 (100.0%)	267 (98.5%)	0.06
Doctors or nurse or health workers	0 (0.0%)	1 (0.4%)	
Media	0 (0.0%)	3 (1.1%)	
Gestational age of the baby at delivery			
Term	274 (89.8%)	231 (82.5%)	0.01
Preterm	31 (10.2%)	49 (17.5%)	
Gender of the baby			
Male	159 (52.1%)	148 (52.9%)	0.86
Female	146 (47.9%)	132 (47.1%)	

Table 2: EIF vs. LIF late initiation of breastfeeding after birth.

Parameters	EIF	LIF			Significance p value
	<1 hour, (n=262)	1-2 hours, (n=54)	2-4 hours, (n=69)	>4 hours, (n=200)	
Woman's age (in years)					
<20	7 (2.7%)	1 (1.9%)	1 (1.4%)	11 (5.5%)	0.43
21-35	246 (93.8%)	52 (96.0%)	67 (97.1%)	92+74+17 (46.0%)	
>35	9 (3.4%)	1 (1.9%)	1 (1.4%)	6 (3.0%)	
Booked status					
Booked	20 (7.6%)	3 (5.6%)	5 (7.2%)	16 (8.0%)	0.95
Unbooked	242 (92.4%)	51 (94.4%)	64 (92.8%)	184 (92.0%)	

Continued.

Parameters	EIF	LIF			Significance p value
	<1 hour, (n=262)	1-2 hours, (n=54)	2-4 hours, (n=69)	>4 hours, (n=200)	
Education status					
Illiterate	45 (17.2%)	5 (9.3%)	10 (14.5%)	27 (13.5%)	0.05
Primary school	35 (13.4%)	4 (7.4%)	15 (21.7%)	27 (13.5%)	
Secondary school	82 (31.3%)	29 (53.7%)	28 (40.6%)	66 (33.0%)	
Intermediate	42 (16.0%)	8 (14.8%)	10 (14.5%)	35 (17.5%)	
College	58 (22.1%)	8 (14.8%)	6 (8.7%)	45 (22.5%)	
Occupation					
Homemaker	262 (100.0%)	54 (100.0%)	68 (98.6%)	198 (99.0%)	0.23
Employed	0 (0.0%)	0 (0.0%)	1 (1.4%)	2 (1.0%)	
Socioeconomic status					
Upper and lower middle	258 (98.5%)	51 (98.4%)	64 (92.3%)	196 (98.0%)	0.05
Upper lower and lower	4 (1.5%)	3 (1.6%)	5 (7.2%)	4 (2.0%)	
Mother's parity					
Primipara	117 (44.7%)	28 (51.9%)	31 (44.9%)	110 (55.0%)	0.35
≥P2	145 (46.9%)	26 (46.3%)	38 (47.8%)	90 (38.0%)	
Gestational age at delivery					
Term	249 (95.0%)	46 (85.2%)	60 (87.0%)	150 (75.0%)	0.001
Preterm	13 (5.0%)	8 (14.8%)	9 (13.0%)	50 (25.0%)	
Delivery					
VD	219 (83.6%)	14 (25.9%)	17 (24.6%)	55 (27.5%)	0.001
CS	43 (16.4%)	40 (74.1%)	52 (75.4%)	145 (72.5%)	
Baby's gender					
Male	137 (52.3%)	26 (48.1%)	36 (52.2%)	108 (54.0%)	0.90
Female	125 (47.7%)	28 (51.9%)	33 (47.8%)	92 (46.0%)	
Weight of the child					
≤2.5 kg	72 (0.0%)	24 (1.9%)	33 (2.9%)	91 (15.5%)	0.001
>2.5 kg	180 (43.1%)	30 (40.7%)	36 (34.8%)	119 (35.5%)	

Table 3: EBF and mode of delivery (Vaginal vs. caesarean delivery).

Parameters	Total, (n=585)	VD, (n=305)	CS, (n=280)	Significance p value
Woman's age (in years)				
<20	20 (3.42%)	14 (4.59%)	6 (2.14%)	0.12
21-25	287 (49.06%)	154 (50.49%)	133 (47.50%)	0.51
26-30	207 (35.38%)	105 (34.43%)	102 (36.43%)	0.67
31-35	54 (9.23%)	25 (8.20%)	29 (10.36%)	0.39
>35	17 (2.91%)	7 (2.30%)	10 (3.57%)	0.46
Booked status				
Un booked	44 (7.52%)	22 (7.21%)	22 (7.86%)	0.87
Booked	541 (92.48%)	283 (92.79%)	258 (92.14%)	
Mother's education				
Illiterate	87 (14.87%)	47 (15.41%)	40 (14.29%)	0.73
Primary school	81 (13.85%)	41 (13.44%)	40 (14.29%)	0.81
Secondary school	205 (35.04%)	102 (33.44%)	103 (36.79%)	0.44
Intermediate	95 (16.24%)	52 (17.05%)	43 (15.36%)	0.65
College	117 (20.00%)	63 (20.66%)	54 (19.29%)	0.76
Mother BMI (kg/m^2)				
18.5-22.9	164 (28.03%)	98 (32.13%)	66 (23.57%)	0.02
23-24.9	367 (62.74%)	201 (65.90%)	166 (59.29%)	0.10
≥25	54 (9.23%)	6 (1.97%)	48 (17.14%)	<0.001
Occupation				
Homemaker	582 (99.49%)	304 (99.67%)	278 (99.29%)	0.61
Employed	3 (0.51%)	1 (0.33%)	2 (0.71%)	0.61

Continued.

Parameters	Total, (n=585)	VD, (n=305)	CS, (n=280)	Significance p value
Socioeconomic status				
Upper middle	103 (17.61%)	47 (15.41%)	56 (20.00%)	0.16
Lower middle	466 (79.66%)	254 (83.28%)	212 (75.71%)	0.02
Upper lower	16 (2.74%)	4 (1.31%)	12 (4.29%)	0.040
Mother's parity				
Primipara	286 (48.89%)	169 (55.41%)	117 (41.79%)	0.001
P2	257 (43.93%)	116 (38.03%)	141 (50.36%)	0.003
P3	41 (7.01%)	20 (6.56%)	21 (7.50%)	0.746
≥P4	1 (0.17%)	0 (0.00%)	1 (0.36%)	0.48
Gestational age at delivery				
Term	505 (86.32%)	274 (89.84%)	231 (82.50%)	0.011
Preterm	80 (13.68%)	31 (10.16%)	49 (17.50%)	0.01
Baby's gender				
Male	307 (52.48%)	159 (52.13%)	148 (52.86%)	0.87
Female	278 (47.52%)	146 (47.87%)	132 (47.14%)	0.87
Weight of the child (kg)				
1.5- 2	34 (5.81%)	13 (4.26%)	21 (7.50%)	0.11
2.1-2.5	186 (31.79%)	89 (29.18%)	97 (34.64%)	0.18
2.6-3	230 (39.32%)	129 (42.30%)	101 (36.07%)	0.1
≥3.1	135 (23.08%)	74 (24.26%)	61 (21.79%)	0.49
EIBF				
<1 Hour	262 (44.79%)	219 (71.80%)	43 (15.36%)	<0.001
1-2 Hours	54 (9.23%)	14 (4.59%)	40 (14.29%)	
2-4 Hours	69 (11.79%)	17 (5.57%)	52 (18.57%)	
>4 Hours	200 (34.19%)	55 (18.03%)	145 (51.79%)	
EBF by day 3				
Yes	496 (84.79%)	275 (90.16%)	221 (78.93%)	<0.001
No	89 (15.21%)	30 (9.84%)	59 (21.07%)	
EBF at 6 weeks				
Yes	382 (65.30%)	227 (74.43%)	155 (55.36%)	<0.001
No	203 (34.70%)	78 (25.57%)	125 (44.64%)	
EBF at 3 months	354 (65%)	205 (71.6%)	149/255 (58.4%)	<0.001

Table 4: EBF at postnatal 6 weeks age and follow-up at 3 months.

Parameters	Exclusive breastfeeding, (n=585)		Significance p value
	Yes (n=382) (65%)	No (n=203) (35%)	
BMI in (kg/m^2)			
18.5-22.9	123 (32.2%)	41 (20.2%)	0.01
23-24.9	224 (58.6%)	143 (70.4%)	0.01
≥25	35 (9.2%)	19 (9.4%)	1.00
Number of children (Parity)			
Primipara	152 (39.8%)	134 (66.0%)	<0.001
P2	198 (51.8%)	59 (29.1%)	<0.001
P3	32 (8.4%)	9 (4.4%)	0.09
≥P4	0 (0.0%)	1 (0.5%)	0.35
Gestational age at delivery			
Term	352 (92.1%)	153 (75.4%)	<0.001
Preterm	30 (7.9%)	50 (24.6%)	<0.001
Mode of delivery			
Vaginal delivery	227 (74.4%)	78 (25.6%)	<0.001
Cesarean section	155 (55.3%)	125 (44.7%)	<0.001
Weight of the baby (kg)			
1.5- 2	5 (1.3%)	29 (14.3%)	<0.001
2.1-2.5	122 (31.9%)	64 (31.5%)	1.000
2.6-3	152 (39.8%)	78 (38.4%)	0.790
≥3.0	103 (27.0%)	32 (15.8%)	0.002

Continued.

Parameters	Exclusive breastfeeding, (n=585)		Significance p value
	Yes (n=382) (65%)	No (n=203) (35%)	
EIBF			
<1 Hour	234 (61.3%)	28 (13.8%)	<0.001
1-2 Hours	43 (11.3%)	11 (5.4%)	0.02
2-4 Hours	46 (12.0%)	23 (11.3%)	0.89
>4 Hours	59 (15.4%)	141 (69.5%)	<0.001
Practice of KMC at home (Yes)	19 (5.0%)	36 (17.7%)	<0.001
Practice of EBF at 3 months	354 (65%)	187 (35%)	0.84

DISCUSSION

Human milk is an optimal source of nutrition and protection for all infants. There is excessive health risk by not breast feeding. It is recommended that breastfeeding to be encouraged and to be supported all the times by the major world health agencies like WHO, UNICEF.

This prospective cohort study demonstrates that caesarean delivery is independently associated with delayed initiation of breastfeeding and significantly lower rates of sustained EBF up to three months postpartum, even within a self-declared baby-friendly tertiary hospital. These findings underscore a persistent implementation gap between breastfeeding promotion policies by all the world agencies and real-world post-caesarean practices.

In the present study, EIBF among neonates was achieved in only 45% of women overall, with a striking disparity between vaginal and caesarean deliveries (73% vs 15%). This observation is consistent with multiple systematic reviews and meta-analyses demonstrating that CS substantially reduces the likelihood of breastfeeding initiation within the first hour of birth.[8,12] The magnitude of delay observed in our cohort is particularly concerning given the baby-friendly designation of the institution, suggesting that institutional accreditation alone does not guarantee optimal early breastfeeding practices.

Several mechanisms may explain delayed initiation after caesarean delivery. These include postoperative pain, residual effects of anesthesia, maternal fatigue, delayed mother-infant contact, and separation during immediate postoperative recovery.[8,14]Additionally, operational barriers such as delayed transfer from operating theaters and limited staffing in recovery areas may further impede timely breastfeeding initiation. These factors may be especially pronounced in high-volume public hospitals in low- and middle-income settings.

A key finding of this study is the strong independent association between EIBF and sustained EBF at both 6 weeks and 3 months postpartum. This aligns with existing evidence indicating that early initiation promotes effective latch, enhances maternal confidence, and facilitates timely onset of lactogenesis.[7,14] Infants who initiate breastfeeding early are more likely to establish effective feeding patterns, reducing supplementation and early discontinuation.

Our results reinforce the concept that early initiation acts as a critical mediator between mode of delivery and long-term breastfeeding outcomes. Failure to initiate breastfeeding early following caesarean delivery may set off a cascade of challenges, including perceived insufficient milk supply, delayed lactation, and increased reliance on supplemental feeds, ultimately compromising exclusivity.[15,16]

EBF rates declined progressively across follow-up periods, with consistently lower rates among women who underwent caesarean delivery. By six weeks postpartum, only 55% of women in the caesarean group were exclusively breastfeeding, compared to over 74% in the VD group. These findings mirror longitudinal studies from diverse settings, including Turkey, Ethiopia and China, which report shortened breastfeeding duration and early cessation following caesarean delivery.[9,12,16]

The persistence of this disparity at three months postpartum highlights that breastfeeding challenges following caesarean delivery extend beyond the immediate postpartum period. Reduced mobility, delayed recovery, and inadequate post-discharge support may further exacerbate breastfeeding difficulties once women return home. This underscores the importance of continuity of care, including postnatal counseling and community-based breastfeeding support, particularly for women who deliver by CS.

The global and national rise in CS rates presents a significant public health challenge.[17] While caesarean delivery can be life-saving when medically indicated, its increasing prevalence may inadvertently undermine breastfeeding outcomes at a population level. The “double burden” of rising caesarean rates and suboptimal EBF threatens progress toward global nutrition targets, including the WHO-UNICEF goal of achieving at least 70% EBF among infants less than 6 months by 2030.[12,13]

In India, where institutional deliveries are rapidly increasing, hospitals represent a critical intervention point. Our findings suggest that generic baby-friendly

policies may be insufficient to address the unique barriers faced by post-caesarean mothers. Tailored interventions-such as initiating breastfeeding in recovery rooms, ensuring uninterrupted skin-to-skin contact, proactive pain management, and deploying trained breastfeeding support personnel-may be necessary to improve outcomes in this high-risk group.

The strengths of this study include its prospective design, longitudinal follow-up, and conduct within a large public-sector baby-friendly hospital serving a socioeconomically diverse population. These features enhance the internal validity and contextual relevance of the findings.

However, several limitations merit consideration. The study was conducted at a single centre, limiting generalizability. Differentiation between elective and emergency CSs was not available, precluding assessment of their potentially differential effects on breastfeeding outcomes. Breastfeeding practices were self-reported and therefore subject to recall and social desirability bias. Additionally, follow-up was limited to three months postpartum, and longer-term breastfeeding outcomes could not be assessed.

Our findings highlight the urgent need to move beyond uniform breastfeeding promotion strategies toward post-caesarean–specific breastfeeding support models. Integrating targeted interventions into routine obstetric and neonatal care pathways-particularly during the immediate postoperative and early post-discharge periods—may substantially improve early initiation and sustained exclusive breastfeeding. Using multipronged innovative strategies like a monthly review of CS rates, incentivizing all levels of health care workers to actively promote breastfeeding after CS, initiating breastfeeding in recovery rooms of OT, creating nursing stations near mother beds, and using breast pumps while in hospital can be adopted. To maintain continued home breastfeeding provisioning of tele-supervision support to improve breastfeeding after CS needs to be considered.

Incorporating breastfeeding indicators into CS audits, strengthening nurse-led lactation support, and leveraging telephonic or digital follow-up platforms may further enhance continuity of care. Future research should focus on evaluating the effectiveness of such interventions through quality improvement initiatives.

CONCLUSION

Caesarean delivery remains a major barrier to early initiation and sustained exclusive breastfeeding, even in baby-friendly hospital thus depriving the neonates the benefit of breastfeeding. EIBF is a key modifiable determinant of long-term exclusivity. Focused, post-caesarean breastfeeding support strategies are urgently required to improve breastfeeding outcomes in institutional deliveries.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee VMMC and Safdarjung hospital, Approval dated IEC/VMMC/SJH/Projects/2022-4/ CC-249 dated 09.6.2022.

REFERENCES

1. Asimaki E, Sarantaki A, Dagla M, Iliadou M. Main Biopsychosocial Factors Influencing Breastfeeding: a Systematic Review. Maedica. 2022;17(4):955-62.
2. San Lio RMS, Maugeri A, Rosa MCL, Antonio C, Marco P, Giuliana G, et al. The Impact of Socio-Demographic Factors on Breastfeeding: Findings from the “Mamma and Bambino” Cohort. Medicinsa. 2021;57(2):103.
3. Nejsum, FM, Hansen, BM, Wiingreen R, Ellen CLL, Rikke W, Bo MH. Exclusive breastfeeding: Relation to gestational age, birth weight, and early neonatal ward admission. A nationwide cohort study of children born after 35 weeks of gestation. PloS One. 2023;18(8):e0285476.
4. Neves RO, Bernadi JR, DaSilva CH, Marcelo ZG, Vera LB. Can parity influence infant feeding in the first six months of life? Cien Saude Colet. 2020;25(11):4593-600.
5. Habtewold TD, Sharew NT, Alemu, SM. Evidence on the effect of gender of newborn, antenatal care and postnatal care on breastfeeding practices in Ethiopia: a meta-analysis and meta-regression analysis of observational studies. BMJ Open. 2019;9(5):e023956.
6. NFHS IT. NFHS. Nfhsiips.in. 2019. Available at: https://www.nfhsiips.in/nfhsuser/nfhs5.php. Accessed on 15 July 2026.
7. Kathuria N, Lakiang, T, Krishnan P, Theophilus L, Javvad S, Sunil M, et al. System Level Barriers in Early Initiation of Breastfeeding Finding from a Cross-sectional Survey in Khagaria District of State Bihar, India. Ind J Pub Health Res Develop. 2020;11(6):665-70.
8. Yisma E, Lynch JW, Smithers LG, Smithers LG. Impact of caesarean section on breastfeeding indicators: within-country and meta-analyses of nationally representative data from 33 countries in sub-Saharan Africa. BMJ Open. 2019;9(9):e027497.
9. Erbaydar NP, Erbaydar T Relationship between caesarean section and breastfeeding: evidence from the 2013 Turkey Demographic and Health Survey. BMC Pregnancy Childbirth. 2020;28(1):55.
10. World Health Organization. Implementation guidance: Protecting, promoting, and supporting breastfeeding in facilities providing maternity and newborn services: The revised baby-friendly hospital initiative 2018. www.who.int. 2018 [cited 2026 July 30]. Available at: https://www.who.int/publications/i/item/9789241513807. Accessed on 15 July 2026.

11. WHO. Global breastfeeding scorecard 2023: rates of breastfeeding increase around the world through improved protection and support. www.who.int. 2023. Available at: https://www.who.int/publications/i/item/WHO-HEP-NFS-23.17. Accessed on 15 July 2026.
12. Getaneh, T, Gelaye K., Negesse A, Melaku D, Habtamu T, Tadesse G, et al. Impact of cesarean section on timely initiation of breastfeeding in Ethiopia: a systematic review and meta-analysis. Int Breastfeed J. 2021;16(1):51.
13. Betran AP, Souza, JP, Ye Zhang J, João PS, Jun Z. Trends and projections of caesarean section rates: global and regional estimates. BMJ Glob Health. 2021;6(6):e005671.
14. Hulman A, Pakai A, Csákvári T, Varga K. Impact of different obstetric interventions and types of delivery on breastfeeding: a nationwide cross-sectional survey of Hungarian women. BMC Pregnancy Childbirth. 2024;24(1):473.
15. Li L, Wan W, Zhu C. Breastfeeding after a caesarean section: A literature review. Midwifery. 2021;103:103117.
16. Chen C, Gao X, Sha T. Influences of Caesarean Delivery on Breastfeeding Practices and Duration: A Prospective Cohort Study. J Hum Lact. 2021;34:526-34.
17. Angolile CM, Mushemba J, Mashauri HL. Global increased cesarean section rates and public health implications: A call to action. Health Sci Rep. 2023;18:e1274.

Cite this article as: Chawla A, Singh MK, Kanwal SK, Singh S, Bajaj B. Impact of mode of delivery on early initiation and sustained exclusive breastfeeding in infants: a prospective cohort study. Int J Contemp Pediatr 2026;13:2006-13.