

## Determinants of Early Initiation of Breastfeeding after Cesarean Section in a Tertiary Care Hospital

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### Abstract

**Objectives:** To assess the determinants of early initiation of breastfeeding (EIBF  $\leq$  1 hr.) after cesarean section in a tertiary care hospital and to determine the perception of WHO breastfeeding recommendations among mothers.

**Material and Methods:** An analytical cross-sectional study was conducted in Post-operative ward of obstetrics department of Services Hospital Lahore. Duration of Study was (9<sup>th</sup> October 2022 to 9<sup>th</sup> January, 2023). Sample size of 246 was calculated. Sampling technique was used purposive sampling. All mothers who had cesarean section deliveries were included except terminally ill. Data was analyzed by SPSS 26 using Binary logistic Regression .

**Results:** Only 13.4% of mothers started breastfeeding within 1 hour after caesarean section. Adverse effects of analgesics (opioids) on milk production and delayed skin-to-skin contact immediately after delivery contributed for delay in EIBF.

**Conclusion:** Delay in EIBF is attributed to decreased production of milk due to analgesics (opioids used for labour pain ) and non-practicing of immediate skin-to-skin contact. Perception regarding breastfeeding among mothers was good.

**Keywords:** Breastfeeding, Cesarean section, skin-to-skin contact, milk production, perception

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### Introduction

Breastfeeding is the process of expressing or pumping milk by mothers to feed their infants. Prevention of newborn deaths can be made effective by early initiation of breastfeeding (EIBF)<sup>1</sup>. In underdeveloped countries, adherence to WHO breastfeeding recommendations falls short, with just 37% of infants receiving breastfeeding initiation within one hour of birth and continuing exclusive breastfeeding for six months.<sup>2</sup> A research underscored breastfeeding's significance, labeling breast milk as a potent "superfood" termed as a "silver bullet". Prompt breastfeeding within the first hour could avert

approximately 830,000 infant deaths annually.<sup>3</sup>

Childbirth-associated obstetrical interventions are among the leading causes of slack in breastfeeding practices. The rapid rise in cesarean sections worldwide is a serious matter of concern<sup>2</sup>. In 2018 the Centers for Disease Control and Prevention reported the cesarean rate to be 31.9% whereas the WHO recommends the ideal rate 10-15%.<sup>4</sup>

Women undergoing cesarean section vary in their breastfeeding experiences due to multiple factors including restricted mobility, postoperative pain, emotional reactions, and effects of analgesics<sup>2</sup>. The Baby-Friendly Hospital Initiative (BFHI) advocates for immediate mother-baby skin-to-skin contact within one hour of birth. Post-surgical complications can hinder bonding and breastfeeding initiation, potentially resulting in reduced newborn receptivity, suckling ability, and milk supply.<sup>4</sup>

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A cross-sectional analytic study at Minia University reported on factors influencing breastfeeding practices after cesarean section as insufficient milk (18.7%), infrequent suckling of infant (29.3%) and postpartum depression (41.5%).<sup>5</sup> An Italian study found that only 3.5% of post-cesarean women breastfed their child as compared to 71.5% with vaginal births.<sup>6</sup> In South Asia, 42% of newborns and 45% all over the world, receive early breastfeeding<sup>7</sup>. In Pakistan, statistically, the early initiation of breastfeeding was practiced only by 18% and the exclusive practice by only 37.7%. This low percentage is alarming and it persists due to lack of perception of mothers.<sup>8</sup>

This research was imperative to assess the determinants of Early initiation of breastfeeding after cesarean section and to scrutinize the perception of women regarding breastfeeding practices who had been admitted to the post-operative unit of the Gynecology department of Services Hospital Lahore.

### Material and Method

It is an analytical cross-sectional study conducted in Post-operative ward of obstetrics department of Services Hospital Lahore. Duration of Study was (9<sup>th</sup> October 2022 to 9<sup>th</sup> January, 2023). Sampling Technique was used Purposive sampling. Sample size was calculated by using “S” size WHO software at 95% confidence interval with an anticipated population of 61% and relative an error of 10%. The minimum sample size was 246<sup>3</sup>. All the mothers who had cesarean section deliveries either with spinal anesthesia or general anesthesia were included. Mothers who delivered infants by cesarean section but were terminally ill were excluded. Data was collected using a close-ended questionnaire at the 2<sup>nd</sup> post operative day of the participants. Informed consent from all respondents was taken. The questionnaire consisted of the Socio-demographic profile, past obstetric history of the mother, determinants of early initiation of breastfeeding after cesarean section and Perception of mothers regarding WHO breastfeeding recommendations. Data was analyzed using SPSS version 26. For quantitative variables mean and standard deviation were calculated. For qualitative variables, frequency and percentage were calculated. Regression analysis was done to see the significant correlation between different risk factors.

### Results

The data was collected from the post-operative ward of

the obstetrics and gynecology department of Services Hospital Lahore. A total of 246 women fulfilling the inclusion and exclusion criteria were the participants in this study. The mean age of the mothers was 26.78± 4.604, Among all the participating mothers 32.1% of mothers had only 1 child (alive) previously. The previous mode of delivery for 52% of mothers was a cesarean section. The husband of most of the mothers was illiterate. Out of all the participants, only 33 (13.4%) mothers started breastfeeding within 1 hour after Caesarean Section. Early Initiation of Breastfeeding is a dependent variable and has interdependency on different adverse effects on milk production after C-section and immediate skin-to-skin contact of the neonate with the mother. Women who experienced various difficulties in milk production were less likely to initiate early breastfeeding, whereas skin-to-skin contact immediately after delivery was found to be a significant supportive factor in EIBF. A number of variables were found to be insignificantly affecting breastfeeding within 1st hour of birth, 93.1% women received spinal anesthesia before C-section & only 6.9% women were given general anesthesia, none of the women with general anesthesia were able to start EIBF. Only 7.3% of women were facilitated for skin-to-skin contact, 51.2% women claimed that post-operative pain was challenging for them regarding EIBF,

**Table 1:** Sociodemographic characteristics

Sociodemographic characteristics	n(%)
<b>Age of the mothers (Years)</b>	
19-24	86(34.9)
25-30	114(46.3)
31-35	32(13.8)
35-40	12(4.87)
<b>Education of mothers</b>	
Illiterate	43(17.4)
Primary/middle	46(18.6)
Matric/intermediate	109(44.3)
Bachelors/Masters	48(19.5)
<b>Mother's occupation</b>	
House wife	231(93.9)
Working women	15(6.1)
<b>Age at marriage (years)</b>	
<18	33(13.4)
19-23	144(58.5)
24-29	62(25.2)
>29	7(2.8)
<b>Husband's occupation</b>	
Laborer	71(28.9)
Public servant	36(14.6)
Private job	139(56.5)

35.4% women had labor period of  $\leq 12$  hours, Latch of 33.3% of women was ineffective, 62.2% women didn't receive any professional guidance regarding EIBF, 86.2% women had antenatal visits more than 4 but despite this only 13.4% women performed EIBF. With respect to provided facilities, 15.4% of women reported that they received practical support to initiate breastfeeding, 27.6% were trained to express breast milk, 82.1% of participants claimed that they were provided

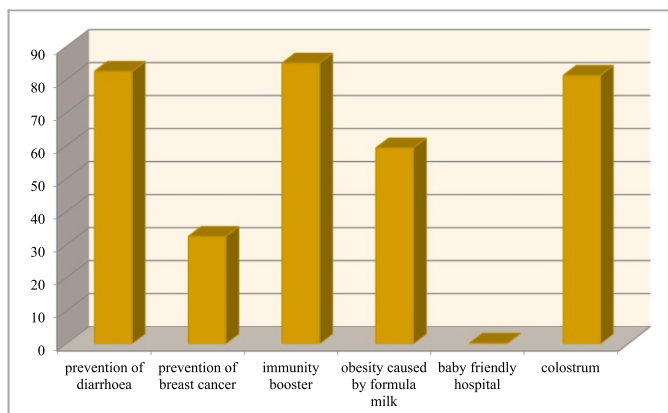
**Table 2:** Determinants Affecting EIBF

Determinants	n (%)	AOR (CI at 95%)	P-value
<b>Skin-to-skin contact</b>			
Immediate	25(10.2)	0.290(0.140-0.810)	0.018
Delayed	221(89.9)		
<b>Effect on milk production</b>			
<b>Analgesics (e.g. opioids)</b>			
Increased	59(2.0)	0.244(0.108-0.551)	0.003
Decreased	135(54.9)		
No effect	106(43.1)		

**Table 3:** Factors associated with EIBF

Factors effecting EIBF	n(%)	P-value
<b>Anesthesia</b>		
Spinal	229(93.1)	0.08
General	17(6.9)	
<b>Post operative pain</b>		
Yes	126(51.2)	0.064
No	120(48.8)	
<b>Hesitation while breastfeeding in hospital</b>		
Yes	32(13.0)	0.072
No	214(87.0)	
<b>Duration of labor pain (hours)</b>		
Nil	159(64.6)	0.096
$\leq 12$	54(22)	
$>12$	33(13.4)	
<b>Mode of pregnancy</b>		
Intentional	211(85.8)	0.108
Unintentional	35(14.2)	
<b>Latch</b>		
Effective	164(66.7)	0.084
Ineffective	82(33.3)	
<b>Antenatal visits</b>		
$<4$	34(13.8)	0.154
$\geq 4$	212(86.2)	
<b>Rooming in facility</b>		
Yes	202(82.1)	0.076
No	43(17.5)	

with rooming in the facility, and 53.7% were well aware about the appropriate posture required for breastfeeding. As far as perception of mothers regarding WHO guidelines and knowledge about the benefits of breastmilk is concerned it has been stated in (Fig-1) Among all the participants 6.1% women had fear of disfigurement caused by breastfeeding, 33.7% women said that they were provided with written Guidelines, 38.2% received antenatal counseling, 59.3% of mothers knew about obesity caused by formula milk, 50% of the mothers knew that fluids and teats must be avoided in newborns and 92.7% recognized well, the cues of their infants.



**Fig-1:** Knowledge of Mothers Regarding Benefits of Breastfeeding.

## Discussion

Breastfeeding is the 1<sup>st</sup> and the best gift a mother could ever give to a child. It's the only natural food sufficient to meet all nutritional requirements immediately after birth until 6 months of age.

Our study comprised of 246 women admitted to any of 4 units of Obstetrics department of Services Hospital, Lahore. Early Initiation of Breastfeeding is a fundamental need of every neonate that was found to be 13.4% in our study whereas 25.03% in countries like Ethiopia according to a Demographic and Health survey.<sup>9</sup> A research of the kingdom of Saudi Arabia concluded poor prevalence of EIBF in the Northern region; moderate in central, western and eastern regions but good enough in the southern regions.<sup>10</sup>

As per Sociodemographic details of our participants is concerned 46.3% of women belonged to an age group of 25 to 30 years which was similar to an Egyptian study at Minia university with 28.1% prevalence of early initiation of breastfeeding.<sup>5</sup> In our study majority of women had secondary or higher secondary education. However

educational status was found to have no significant relation with early breastfeeding practices. Whereas according to inference of a cross-sectional study in Bangladesh, increasing education level was inversely related to rate of EIBF and a similar pattern was observed with financial status of women<sup>22</sup>. If women parity is concerned majority of the women in our study were multiparous but this factor was insignificant with respect to EIBF, Whereas a demographic survey in 2018 at Peru concluded that women who had 4 or more deliveries were 21% more likely to perform EIBF than those who were delivering their first child<sup>23</sup>. Significant factors that were found to have delayed early initiation of breastfeeding included lack of implementation of immediate skin-to-skin contact and reduced lactation due to sedative action of analgesics. Both of these factors might result in hampered suckling ability of infant as well as reduced infant's receptivity. Negative impact of analgesics on milk production was encountered by more than half of our target population which was found to be similar to a cohort study conducted in Canada.<sup>11</sup> Skin-to-skin contact between mother and the infant causes release of an essential hormone, oxytocin the "love hormone" in mother that is crucial for establishment of bonding in a mother-infant dyad. Immediate skin-to-skin contact in our setting was 10.2% which is substantially low and attributed to a lack of professional guidance. In Bangladesh it was twice as ours according to a population-based survey<sup>12</sup>. Whereas in Singapore rate of immediate skin-to-skin contact practice was about 4 times higher and the slight slack they had was attributed to lack of staff and interruptions like physical examination of neonates.<sup>13</sup>

Post-operative pain results in reduced mobility in women but in our analysis, it is not significantly affecting timely initiation of breastfeeding which is contrary to findings of university of Texas where post-operative pain was in negative association with the latch<sup>14</sup>. Training of the health care providers in order to create an enabling environment to robust favorable breastfeeding practices is also a basic need of this era. Rooming in facility is also a compliant factor in immediate initiation of breastfeeding, but in our study this factor is not significant which is in contrast to a Cross sectional study appraised in Komfo Anokye teaching Hospital of Ghana, Africa.<sup>15</sup> Antenatal Care (ANC) is one of the recommended fundamental strategies to alleviate the risk of maternal and neonatal mortality. Mothers having Antenatal visits more than 4 during pregnancy are more likely to start

breastfeeding timely than those who they don't receive antenatal care. In our study women with more than 4 antenatal visits were 86.2% of total participants but unfortunately this variable was not significantly supporting EIBF. An Indian study evaluated the determinants of Early Breastfeeding practices in rural and urban areas which implied that four or more than four ANV play positive role in commencement of EIBF<sup>16</sup>. Professional Antenatal counseling is also a supportive factor in EIBF. Unfortunately its prevalence in our hospital was just 38.2%. Similarly a meta-analysis conducted in New Delhi India also interpreted that antenatal counseling is an important intervention in early initiation of breastfeeding.<sup>17</sup>

Colostrum, the golden milk, with immunogenic properties, protects neonates against infectious diseases such as diarrhea, pneumonia, neonatal meningitis. Fortunately 81.3% of women visiting Services hospital were well aware of its importance which was much a bit higher than that of mothers in Riyadh (74%) according to a Saudi study.<sup>25</sup> Pre-lacteal feeding predominantly reduces the success rate of immediate as well as exclusive breastfeeding. 50% of the participants in our study had this concept that fluids and teats should not be given to the newborns before 1<sup>st</sup> breast milk which is in co-relation to a study conducted at Dhaka, Bangladesh, where honey and sugar water were found to be the most widely reported pre-lacteal feeds given to almost more than 50% infants<sup>18</sup>. Immediate and exclusive breastfeeding confers cumulative protective effects against breast cancer. Unfortunately, only 32% of total participants had awareness regarding this potential benefit of breastfeeding. In Beijing, China a study conducted on successful experiences of breastfeeding among Chinese mothers living in Ireland analyzed that most of the mothers knew that breastfeeding not only prevents breast cancer but it also helps to maintain normal body weight<sup>19</sup>. Baby friendly hospital initiative (BFHI) has been a remarkable component of WHO/UNICEF strategy for optimal infant breastfeeding. BFHI has fostered the establishment of tools and materials for implementation of "Ten Steps to Successful Breastfeeding"<sup>20</sup>. As per our study awareness about existence of baby friendly hospitals among participants was 0.8% that's almost negligible. Similar results were found among Lebanese women with a percentage of 6.3%<sup>24</sup>. In our Tertiary care hospital majority of mothers had awareness regarding WHO recommendations and these findings were in coherence with a Cross-sectional

study of China.<sup>21</sup>

It is a single-setting cross-sectional study hence results cannot be generalized on the whole population. Moreover, Comparison of early breastfeeding practices has not been done between public and private sector hospitals. Alarming rise in rate of cesarean section is an obstacle for initiation of optimal early infant feeding practices. Establishment of appropriate and prompt skin-to-skin contact and implementation of BFHI could be the possible solutions to combat this challenge.

## Conclusion

Delay in EIBF is attributed to decreased production of milk due to analgesics (opioids used for labour pain) and non-practicing of immediate skin-to-skin contact. Perception regarding breastfeeding among mothers was good.

## Conflict of Interest

*None*

## Funding Source

*None*

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### Authors Contribution

**AK:** Conceptualization of Project

**MR:** Statistical Analysis

**MM:** Literature Search, Drafting, Revision

**BM:** Data Collection

**YM:** Data Collection

**AK:** Writing of Manuscript