

# The Determinants of Early Initiation of Breastfeeding Practice among Mothers Attending a Tertiary Hospital, Kathmandu

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## ABSTRACT

**Introduction:** Breastfeeding is the best way of providing ideal food for the optimal growth and development of an infant. Early initiation of breastfeeding (EIBF) within one hour of birth is one of the cost effective strategies to reduce neonatal mortality. The aim of the study was to find out the determinants of breastfeeding practice.

**Methods:** This was a descriptive cross-sectional study conducted among 207 mothers who have child from birth to 12 months in Maternal and Child Health (MCH) Clinic of tertiary care referral hospital. The mothers for the study were selected using probability sampling technique. Variables were analysed using a multivariate logistic regression model to identify the determinants of EIBF.

**Results:** The prevalence of EIBF in the study population was 47.3%. Caesarean delivery (AOR: 3.449, CI: 1.224-9.719,  $p = 0.019$ ), mothers who have done more than one postnatal visit (AOR: 2.824, CI: 1.126-7.079,  $p = 0.027$ ) and low birth weight babies (AOR: 7.973, CI: 1.571-40.465,  $p = 0.027$ ) were more likely to delay initiation of breastfeeding.

**Conclusions:** Less than half newborn receive breast milk within the first hour of birth. Mothers delivered by caesarean section, who have done more than two postnatal visit and low birth weight babies were more likely to delay initiation of breastfeeding. These are the major determinants of initiation of breastfeeding. Existing breastfeeding promotion program should be strengthened within the existing health care system.

**Key words:** breastfeeding; caesarean section; determinants; early initiation; infant



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## INTRODUCTION

Appropriate breastfeeding practices are essential for the growth and development of infants. Early initiation of breastfeeding is defined as feeding mothers' breast milk to newborn infants within the first hour of birth.<sup>1</sup> In Nepal, every year 57,000 under-five children lose their lives. Twenty-two percent of newborn deaths can be prevented through breastfeeding within the first hour of birth.<sup>2</sup>

The World Health Organisation (WHO) recommends exclusive breastfeeding for the first six months of life, followed by a timely initiation of appropriate complementary foods.<sup>3</sup> In Nepal and in South Asia, suboptimal infant feeding practices have been associated with under nutrition, which is reflected by stunting, wasting, and mortality.<sup>4</sup> Delayed initiation of breastfeeding continues to be a problem in Nepal as only four in 10 newborn infants receive breast milk within the first hour of birth.<sup>5</sup>

Most infants in Nepal receive colostrum but less than half initiate breastfeeding within an hour of birth and one-third are fed prelacteal feeds, which may negatively affect breastfeeding and health throughout early infancy.<sup>6</sup> According to a systematic review, infants who initiated breastfeeding after one hour were at 33% risk of neonatal mortality.<sup>7</sup> Neonatal sepsis is one of the major causes of morbidity and mortality among the newborns in the developing world.<sup>8</sup> A study from Zimbabwe showed that delayed breastfeeding increases the risk of developing neonatal sepsis within the first one week of life.<sup>9</sup>

According to Nepal Demographic Health Survey 2011, percentage that started breastfeeding within one hour of birth is very low. Similarly, percentage of babies who received pre-lacteal feed is very high in Central Terai in comparison to other ecological region and exclusively breastfed for six months of life are 70%.<sup>10</sup> But according to Central Bureau of Statistics (2014), infants who are exclusively breastfed for six months of life are 56.9% in 2014.<sup>11</sup> This decreasing trend is alarming, thus the researcher wanted to find out the determinants of early initiation of breastfeeding practice.

## METHODS

A cross-sectional descriptive study was carried out after getting the proposal approved by Ethical Committee of the hospital. Semi-Structured interview schedule was developed. The sampling unit was taken from maternal and child health (MCH) clinic of the hospital. To allocate the study subjects, first the average number of clients who visit the MCH clinic was estimated by referring to the client registration book of same month of previous year. First mother was selected with lottery method from serial number of registration book. First number was three, and then every alternate mother was taken. A total of 207 mothers attending the MCH clinic with child less than one year of age were taken for the study. Data was collected for one month from February to March, 2016. The data were edited, classified, coded and entered in the Statistical Package for Social Science (SPSS) version 16 for analysis. Data were analysed by using descriptive (frequency, percentage, mean and standard deviation) and inferential statistics (chi square test and fisher exact test). Variables that were significant on the bivariate analysis at  $p < 0.05$  were further analysed in multivariate logistic regression to identify the determinants of breastfeeding practice.

## RESULTS

Mean age of mothers was 26.51 ( $\pm 4.37$ ) years and 45.9% of mothers belonged to Brahmin / Chhetri ethnicity. More than half (59.9%) of the mothers were from nuclear family. More than half (52%) of the mothers had higher secondary and graduate level education (Table 1). However most (70%) of them were home makers. Almost all (98.9%) mothers had done antenatal visit; 97% had done four or more ANC visits. More than half (61.6%) of the mothers did not receive information regarding breastfeeding during ANC visit.

More than half (68.6%) delivery was normal where as 30.9% was cesarean section. Similarly, majority (96.6%) of the mothers had done postnatal visit (Table 3). Regarding birth weight, 91.8% had normal birth weight and 8.17% had low birth weight. More than half (57.5%) of the mothers were primiparous. Majority (95.2%) of the children were born in the hospital .

**Table 1.** Socio-demographic Characteristics of the Mother

Socio-demographic Characteristics	Number	%
<b>Educational status of mother (n = 207)</b>		
Illiterate	9	4.3
Literate	198	95.7
<b>If literate (n = 198)</b>		
Can read and write	6	3
Primary (up to 5 class)	21	10.6
Secondary (6- 10 class)	68	34.3
Higher secondary (11-12)	58	29.3
Graduate (bachelor and above)	45	22.7
<b>Occupation of mother (n = 207)</b>		
Home maker	145	70
Business	29	14
Service	25	12.1
Labour	3	1.4
Farming	1	0.5
Others	4	1.9

Majority (96.6%) of the mothers were aware about exclusive breast feeding; 73.9% were also aware regarding correct time (six months) for exclusive breastfeeding (Table 3).

Table 4 shows that less than half (47.3%) of the mothers initiated early breastfeeding (within first hour of delivery). Majority (94.2%) of the mothers fed colostrum. Similarly, 20.3% mothers had practice of prelacteal feeding. Formula milk was the most common pre-lacteal feeding (Table 4).

Multivariate logistic regression (Table 5) showed that 'mothers who had caesarean section (AOR: 3.449, CI: 1.224 - 9.719,  $p = 0.019$ ), were less likely to initiate breastfeeding within one hour of birth. Similarly, mothers who had done more than one postnatal visit (AOR: 2.824, CI: 1.126 - 7.079,  $p = 0.027$ ) and who had low birth weight babies (AOR: 7.973, CI: 1.571 - 40.465,  $p = 0.027$ ) were less likely to initiate breastfeeding within one hour of birth. Other variables, such as, mother's age, type of family, educational status of mother, occupation of mother and place of delivery did not have any

**Table 2.** Maternal Characteristics

Maternal Characteristics	Number	%
<b>Parity (n = 207)</b>		
Primiparous	119	57.5
Multiparous	88	42.5
<b>Number of living children (n = 207)</b>		
Up to 2	196	94.7
More than 2	11	5.3
Mean $\pm$ SD	1.49 $\pm$ .630	
<b>Birth spacing (n = 88)</b>		
Less than 24 months	1	1.1
More than 24 months	87	98.9
<b>Antenatal visit (n = 207)</b>		
Yes	203	98.1
No	4	1.9
<b>Number of antenatal visit (n = 203)</b>		
Up to 3 times	6	3
4 times or more	197	97
Mean	4.79 $\pm$ 0.571	
<b>Breastfeeding information during antenatal visit (n = 203)</b>		
Yes	78	38.4
No	125	61.6
<b>Place of delivery (n = 207)</b>		
Hospital	197	95.2
Home	10	4.8
<b>Type of delivery (n = 207)</b>		
Normal	142	68.6
Cesarean	64	30.9
Instrumental	1	0.5
<b>Postnatal visit (n = 207)</b>		
Yes	200	96.6
No	7	3.4
<b>No. of postnatal visit (n = 200)</b>		
One	106	53
Two	29	14.5
Three or more	65	32.5
Mean	1.80 $\pm$ .904	

significant association with early initiation of breastfeeding.

## DISCUSSION

The main objective of this study was to identify the determinants of early initiation of breastfeeding practice in tertiary level paediatric hospital in

**Table 3.** Awareness of Mothers- Breastfeeding, source of information, predominant feeding, duration of exclusive breastfeeding

Awareness of Mothers	Number	%
<b>Awareness regarding breastfeeding (n = 207)</b>		
Yes	200	96.6
No	7	3.4
<b>Sources of information (n = 200)</b>		
Health professionals	165	82.5
Female Community Health Volunteers (FCHV)	7	3.5
Family / Relatives / Peers	15	7.5
Media	43	21.5
Self (study in course)	55	27.5
<b>Baby need water with breastfeeding till six months after birth (n = 207)</b>		
No	163	78.7
Yes	44	21.3
<b>Duration of exclusive breastfeeding (n = 207)</b>		
One month	1	0.5
Three months	8	3.9
Four months	6	3
Five months	37	18.2
Six months	150	73.9
Seven months	1	0.5

Nepal. This study revealed that early initiation of breastfeeding (within the first hour of birth) was 47.3% which was comparable to the Nepal Demographic and health survey 2011(45%), but lower than the report of Nepal Demographic and health survey 2016 (55%).<sup>10,12</sup> Study finding is higher than reported of India (32%) and Nigeria (34.7%) but lower than Sri Lanka (83.3%).<sup>6,13,14</sup> Within Nepal, the prevalence of EIBF is lower than that of Pokhara (72.2%).<sup>15</sup> Such variation in the rates of early initiation of breast feeding within Nepal and outside is likely due to differences in the geography, ethnicity, culture and socioeconomic status of mother. This study revealed that 94.2% of babies were given colostrum. Similar finding was reported in the study of Bhaktapur, where 91% of infants were given colostrum.<sup>16</sup>

In this study, there was no significant association between maternal age, type of family, economic status, education and occupation of mother with

**Table 4.** Breastfeeding practice of the mothers

Breastfeeding practice	Number	%
<b>Initiation of breastfeeding after birth (n = 207)</b>		
Within 1 hour	98	47.3
After 1 hour	109	52.7
<b>Practice of colostrum feeding (n = 207)</b>		
Yes	195	94.2
No	12	5.8
<b>Reason for not colostrum feeding (n= 12)</b>		
Cultural practice	6	50
Problem in breastfeeding	3	25
Don't know the importance	3	25
<b>Practice of prelacteal feeding (n= 207)</b>		
Yes	42	20.3
No	165	79.7
<b>Type of prelacteal feeding (n= 42)</b>		
Glucose water	1	2.4
Animal milk	1	2.4
Formula milk (lactogen)	40	95.2
<b>Reason for prelacteal feeding (n= 42)</b>		
Not sufficient milk secretion	12	28.6
Caesarean section	25	59.5
Advised from health workers	1	2.4
Maternal and child sickness	4	9.5

early initiation of breastfeeding. Similar finding was observed in Nepal<sup>17</sup> which revealed that maternal age, maternal education, maternal occupation and socioeconomic status were not significantly co-related with early initiation of breastfeeding. In this study, we observed that, mother with first baby was found to be a significant cause of delay in initiation of breastfeeding (p = 0.000, OR: 3.368; 95% CI: 1.887 - 6.013). This finding is consistent with findings from Ethiopia<sup>18</sup> and Malawi.<sup>19</sup> In Ethiopia, mothers with first child were more likely to delay initiation of breastfeeding to their babies (AOR: 0.59; 95% CI: 0.35-0.99).<sup>18</sup> This is due to the fact that previous breastfeeding experience was positively associated with intention and timely initiation of breastfeeding. It is known that nulliparous women generally have little to no

**Table 5.** Multivariate logistic regression for determining factors of initiation of breastfeeding

Characteristics	Unadjusted OR (95%CI)	Adjusted OR (95%CI)	<sup>a</sup> p-value
<b>Type of delivery (n = 207)</b>			
Vaginal	1	1	
Caesarean	7.485 (3.603 - 15.549)	3.449 (1.224 - 9.719)	0.019*
<b>Number of postnatal visit (n = 200)</b>			
One visit	1	1	
2-3 visit	5.147 (2.804 - 9.447)	2.824 (1.126 - 7.079)	0.027*
<b>Birth weight (n = 197)</b>			
Normal	1	1	
Low	6.923 (1.529 - 31.338)	7.973 (1.571 - 40.465)	0.012*

<sup>a</sup>: Binary logistic regression, \*: p-value significant at < 0.05 level, OR: Odds Ratio, CI: Confidence Interval, 1- Reference

knowledge of pregnancy and childbirth, which could be an important factor influencing attitudes and practices regarding breastfeeding during the first hour after birth.<sup>20</sup>

Present study revealed that mothers who had delivered their baby by caesarean section were 7.4 times more likely to delay initiating breastfeeding as compared to those who had vaginal delivery. Similarly, caesarean section is a barrier to early initiation in Ethiopia, India as well as western Nepal.<sup>5,17,18</sup> Multiple studies have reported mode of delivery to be one of the major determinants of early initiation of breastfeeding in newborns.<sup>21</sup> Delivery by caesarean section is associated with non-compliance of immediate breastfeeding. Caesarean section induces delay in skin to skin

contact between mother and newborn due to anaesthesia as well as the fatigue associated with prolonged birth.<sup>13</sup> This might be because mothers, who delivered their babies through caesarean section, take longer to recover from the effect of anaesthesia. Mothers might also find it difficult to achieve comfortable breastfeeding position and delay in making their first contact with their babies.

Current study showed that birth weight was significantly associated with early initiation of breastfeeding (p = 0.004). Low birth weight babies (OR: 6.923; 95 and CI: 1.529 - 31.338) were 6.9 times more likely to initiate breastfeeding after 1 hour of birth (delay initiation) than normal birth weight babies. The finding is similar to those from western Nepal<sup>5</sup> where low birth weight babies were less likely to be breastfed within the first hour of birth. This could be due to poor suckling capacity or associated illness among the low birth weight infants.

Present study has the strong limitation of being a single centric study and the results are based on verbal response only. However, the study has tried to give an insight into the present trend of breast feeding in central Nepal.

## CONCLUSIONS

Based on the findings it can be concluded that less than half newborns receive breast milk within the first hour of birth. Mothers delivered by caesarean section, who have done more than two postnatal visit and low birth weight babies were more likely to delay initiation of breastfeeding. These are the major determinants of initiation of breastfeeding. Existing breastfeeding promotion program should be strengthened within the existing health care system such as in antenatal and vaccination clinics by encouraging early initiation of breastfeeding.

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