

Factors affecting early initiation of breastfeeding among mothers of urban area of Jabalpur district, Madhya Pradesh, India: A community-based cross-sectional study

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ABSTRACT

Background: Early initiation of breastfeeding reduces infant mortality and morbidity and prolongs the duration of breastfeeding. **Objective:** The present study was conducted to assess the prevalence of early initiation of breastfeeding and factors associated with early initiation of breastfeeding in the urban area of Jabalpur district of Madhya Pradesh. **Methodology:** The present community-based cross-sectional study was conducted in an urban area of Jabalpur district of Madhya Pradesh from March 2017 to July 2018 on 370 recently delivered mothers. Data were collected by interview, using the pretested structured questionnaire and analyzed using SPSS, version 20. Significance was set at the value of $P < 0.05$. **Results:** The prevalence of early initiation of breastfeeding was found to be 45.4%. The percentage of mothers initiating breastfeeding earlier increased when they belonged to the higher age group, nuclear family, were educated, employed, counseled during antenatal visits, non-primigravida and delivered in health institutions. It was also observed that type of delivery, socioeconomic status of mothers, birth weight of baby and occupation of husband are not significantly associated with the early initiation of breastfeeding. **Conclusion:** Increasing literacy amongst the population, promoting marriages at an appropriate age, counseling pregnant women regarding early initiation of breastfeeding during antenatal care visits and institutional deliveries can significantly increase the prevalence of early initiation of breastfeeding in the mothers of urban areas of Jabalpur district, Madhya Pradesh.

Keywords: Antenatal care, early initiation of breastfeeding, education of mothers, exclusive breastfeeding, prelacteal feeding

Introduction

The early initiation and continuation of exclusive breastfeeding (EBF) is essential to reduce infection-related mortality and morbidity in infants. It is also associated with better long-term nutritional and cognitive outcomes in the child.^[1] The World Health Organization (WHO) recommends early initiation of

breastfeeding within 1 h of birth and EBF for the first 6 months of life.^[2] Exclusive breastfeeding (EBF) is defined as the intake of only breast milk by the child and no additional food, water, or other liquid (except medicine and vitamins if needed) until 6 months of age.^[3] Breastfeeding in the first hour of life has its advantage as the infants who are breastfeeding early are less likely to receive prelacteal feed. It is also associated with prolonged duration of breastfeeding.^[4] Apart from reducing infant mortality and morbidity, early initiation of breastfeeding induces uterine contractions and prevents postpartum hemorrhage.^[5,6] It is also proved in various studies that there is a reduction in the risk of developing ovarian and breast cancers due to breastfeeding.^[7,8]

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Lactational amenorrhea is well-accepted as an effective and economical contraceptive method for breastfeeding mothers.^[9] The delayed initiation of breastfeeding and prelacteal feeding prevents colostrum feeding, which is rich in essential nutrients. Colostrum also contains antibodies, which provide natural protection to newborns against infections during the post-partum period. As a result, delayed initiation of breastfeeding makes the infant more susceptible to malnutrition and various infections such as diarrhea, meningitis, pneumonia and neonatal sepsis.^[2,3,10] Even though the benefits of early initiation of breastfeeding have been proved beyond doubt, the rate of early initiation of breastfeeding in South Asia is low. It is 41.8% in India,^[11] 24% in Bangladesh^[12] and 8.5% in Pakistan.^[13]

Prelacteal feeding is defined as giving something other than breast milk to an infant.^[14] The definition itself suggests that the infant receiving prelacteal feed is not exclusively breastfed. Prelacteal feed consists of honey, water, ghee, rosewater, animal milk or other alternatives to breast milk.^[1,14] Despite the deleterious effects of prelacteal feed on infants' health, it is an established practice in India and other developing countries. The prevalence of prelacteal feeding practice is 16% in India,^[11] 27% in Bangladesh,^[12] 43% in Afghanistan^[4] and 65% in Pakistan.^[13]

The fifth National Family Health Survey (NFHS-5) of India reported that overall, 41.8% of children aged under 3 years were breastfed within 1 h of birth. In Madhya Pradesh, the prevalence of early initiation of breastfeeding is 41.3%. In urban areas of Madhya Pradesh, the prevalence is found less, that is, 36.2% and in rural areas, it is 42.2%.^[11] Thus, there is variation in the prevalence of early initiation of breastfeeding in urban and rural areas of Madhya Pradesh, which may be due to various demographic, sociocultural and maternal care-related factors.

Therefore, the present study was conducted with the objective to assess the prevalence and factors associated with the early initiation of breastfeeding in an urban area of Jabalpur District, Madhya Pradesh.

Materials and Methods

This was a community-based, cross-sectional study carried out in an urban area of Jabalpur district of Madhya Pradesh from March 2017 to July 2018 after obtaining approval from the Institutional Ethics Committee (IEC). The study population comprised recently delivered mothers residing in an urban area of Jabalpur district, Madhya Pradesh. Preterm infants, infants born in multiple gestations, infants with congenital malformation and infants diagnosed with immunologic problems were excluded from the study.

Sample size

The sample size was calculated using the formula $n = Z^2pq/d^2$ (where $Z = 1.96$ at 95% confidence, $P =$ prevalence of early breast feeding within 1 h, $q = 1-p$, $d =$ absolute error), according to the NFHS 5 data of the urban area of Madhya Pradesh

mothers who breastfeed within the first hour of delivery (36%). Taking this value as prevalence ($P = 36$), Q becomes 64, with a 5% absolute error sample size coming out to 368.64 and rounded up to 370. So, the final sample size was 370.

Sampling was performed by multistage sampling method, in the first step, out of a total of 87 wards of Jabalpur city, 37 wards were selected by a two-digit random number table. Lists of mothers were collected from anganwadis located in the wards and from this list, 10 mothers from each ward were selected by the systemic sampling method.

Data were collected by interview using a pretested structured questionnaire, after obtaining informed consent from mothers. Data were analyzed using the Statistical Package for Social Sciences (SPSS, version 20). Significance was set at the value of $P < 0.05$.

Results

As per Table 1, most lactating mothers were between 20 and 30 years (87.29%) of age and were housewives (88.64%). Most

Table 1: Distribution of cases according to socio-demographic profile (total no of participants=370)

	Numbers	Percentage
Age of mother (in years)		
<20	14	3.78
20–30	323	87.29
> 30	33	8.92
Education of mother		
Illiterate	32	8.65
Up to middle school	155	41.89
Above middle school	183	49.46
Occupation of mother		
Housewife	328	88.65
Working	42	11.35
Type of family		
Nuclear	98	26.48
Joint	272	73.51
Religion		
Hindu	335	90.54
Muslim	15	4.05
Other	20	5.4
Education of husband		
Illiterate	19	5.1
Up to middle school	198	53.51
above middle school	153	41.35
Occupation of husband		
Unemployed and unskilled	86	23.24
Semiskilled	199	53.78
Skilled and above	85	22.97
Socioeconomic classification (modified Kuppaswamy scale)		
Lower class	247	66.76
Lower middle	108	29.18
Upper middle+upper class	15	4.05

were living in joint families (73.51%) and the majority (90.54%) were Hindus. Out of the total lactating mothers, 8.6% were illiterate, 41.89% were educated up to middle school, and 49.45% were educated above middle school. When we considered the education level of husbands of lactating mothers, 5.13% were illiterate, 53.51% were educated up to middle school, whereas 41.35% were educated above middle school. As regards to the occupation of husbands, 23.24% were unemployed or unskilled workers, 53.78% were semiskilled, whereas 22.97% were skilled workers. Most lactating women (66%) belonged to the lower socio-economic class.

As mentioned in Table 2, most mothers (40.54%) had a second order of delivery. Most mothers delivered in institutions (93.24%). Also, 40.59% of mothers were counseled during their antenatal period regarding the early initiation and need of breastfeeding; whereas, 59.45% of mothers did not receive the counseling. Also, 76.22% of mothers delivered normally and 23.78% were delivered by caesarean section.

As shown in Table 3, 45.4% of mothers initiated breastfeeding within 1 h of birth, whereas 54.59% of mothers initiated breastfeeding after 1 h. The most common reason for delay in initiating breastfeeding was that the mother was not aware and did not receive any advice regarding the early initiation of breastfeeding. Also, 25.13% of mothers gave prelacteal feeding to their babies, whereas 74.86% of mothers did not give any prelacteal feed. Most mothers (37.63%) gave water as prelacteal feed.

As shown in Table 4, the age of the mother, her education, occupation, type of family, religion and the education of husbands showed a strong association with the early initiation of breastfeeding. It has been observed that mothers who were above 24 years, educated above middle school, employed, belonging to a nuclear family and whose husbands were educated above middle school initiated breastfeeding within 1 h of birth of a baby. Occupation of the husband and socioeconomic status of the mother did not show significant association with the early initiation of breastfeeding.

It is evident from Table 5 that order of delivery, place of delivery and counseling during ANC about early initiation and the need for breastfeeding had a strong association with early initiation of breastfeeding. Mothers who were non-primigravida, delivered institutionally and counseled during ANC about the early initiation and need of breastfeeding, initiated breastfeeding earlier. The type of delivery and birth weight of the baby did not show any significant association with the early initiation of breastfeeding.

Discussion

The present study was conducted to assess the prevalence and factors associated with the early initiation of breastfeeding in an urban area of Madhya Pradesh. The findings of the present

Table 2: Distribution of cases according to counseling during ANC, order, place and type of delivery and birth weight of the baby

	Numbers	Percentage
Order of delivery		
1 st	138	37.29%
2 nd	150	40.54%
3 rd and above	82	22.16%
Place of delivery		
Institutional	345	93.24%
Home	25	6.76%
Counseling during ANC about early initiation and the need for breastfeeding		
Yes	150	40.54%
No	220	59.46%
Type of delivery		
Vaginal	282	76.22%
Caesarean section	88	23.78%
Birth weight of the baby		
<2.5 kg	76	20.54%
≥2.5 kg	294	79.46%

Table 3: Distribution of lactating mothers as regards to time of the initiation of breastfeeding, reasons for delay in initiation of breastfeeding and prelacteal feeding

	Numbers	Percentage
Time of initiation of breastfeeding		
Within 1 h	168	45.40%
> 1 h–4 h	172	46.48%
> 4 h–1 day	15	4.05%
After 1 day	15	4.05%
Early initiation of breastfeeding		
Yes	168	45.4%
No	202	54.59%
Reason for delay in initiation of breastfeeding		
Not aware, not given advice	85	42.07%
Milk is not let down	54	26.73%
Child illness, drowsiness	25	12.37%
Mother ill, drowsy	21	10.39%
Prelacteal feeding		
Given	93	25.13%
Not given	277	74.86%
Type of prelacteal feeding (93)		
Water	35	37.63%
Gudh ka pani (jaggery water)	16	17.2%
Honey	30	32.26%
Janam ghutti*	12	12.9%

*Janam ghutti- Traditional ayurvedic formula for babies which is a mixture of natural and herbal ingredients that is believed to help babies grow and soothe any discomfort they have

study are more or less similar to NFHS 5^[11] and the study conducted by Gupta *et al.*^[15] in which it was observed that the prevalence of early initiation of breastfeeding was 41.8% and 40%, respectively. However, Sharma *et al.*,^[4] Patel *et al.*^[16] and Boralingiah *et al.*^[17] observed a slightly lesser prevalence of early initiation of breastfeeding which was 38.6%, 36.4%, and 33.6%, respectively. Randhawa *et al.*,^[18] and Meshram *et al.*^[19] reported a very low prevalence of early initiation of breastfeeding, that is,

Table 4: Association of early initiation of breast feeding with sociodemographic correlates

	Early initiation (168)	Late initiation (202)	χ^2	P
Age of mother				
Up to 24 years (268)	88 (32.83%)	180 (67.17%)	61.9614	0.00001
Above 24 years (102)	80 (78.43%)	22 (21.57%)		
Education of mother				
Up to middle school (187)	59 (31.56%)	128 (68.44%)	29.27	0.00001
Middle school and above (183)	109 (59.56%)	74 (40.44%)		
Occupation of mother				
Housewife (328)	138 (42.1%)	190 (57.9%)	12.9432	0.00032
Working (42)	30 (71.43%)	12 (28.57%)		
Socioeconomic classification				
Lower class (247)	105 (42.5%)	142 (57.5%)	2.5126	0.1129
Lower middle and above (123)	63 (51.22%)	60 (48.78%)		
Type of family				
Nuclear (98)	58 (59.18%)	40 (40.82%)	10.2092	0.0013
Joint (272)	110 (40.44%)	162 (59.56%)		
Religion				
Hindu (335)	141 (42%)	194 (58%)	15.7077	0.000074
Other (35)	27 (77.14%)	8 (22.86%)		
Education of husband				
Up to middle school (217)	83 (38.24%)	134 (61.76%)	10.8423	0.000992
Above middle school (153)	85 (55.5%)	68 (44.5%)		
Occupation of husband				
Unemployed unskilled (86)	40 (46.51%)	46 (53.49%)	0.0553	0.814
Semiskilled and above (284)	128 (45%)	156 (55%)		

Table 5: Association of early initiation of breastfeeding with antenatal and intranatal services utilization

	Early initiation (168)	Late initiation (202)	χ^2	P
Order of delivery				
Primi (138)	50 (36.23%)	88 (63.77%)	7.4715	0.0062
Multi (232)	118 (50.86%)	114 (49.14%)		
Place of delivery				
Institutional (345)	162 (46.9%)	183 (53.1%)	4.9558	0.026004
Home (25)	6 (24%)	19 (76%)		
Type of delivery				
Normal (282)	127 (45%)	155 (55%)		
Caesarian section (88)	41 (46.6%)	47 (53.4%)	0.065	0.798
Birth weight of the baby				
<2.5 kg (76)	27 (35.52%)	49 (64.48%)	3.7657	0.0523
≥2.5 kg (294)	141 (47.96%)	153 (52.04%)		
Counseling during ANC about early initiation and the need for breastfeeding				
Yes (150)	80 (53.33%)	70 (46.67%)	6.3964	0.011435
No (220)	88 (40%)	132 (60%)		

24% and 26%, respectively. A higher prevalence of early initiation of breastfeeding was reported by Choudhary *et al.*,^[20] Gadhavi *et al.*,^[21] Woldeamanuel^[22] and Jennifer *et al.*^[23] which was 67%, 55.5%, 80.3% and 97.5%, respectively.

It was observed in the present study that the most common reason for late initiation of breastfeeding is the lack of awareness in mothers regarding the importance of early initiation of breastfeeding. Similarly, Randhawa *et al.*^[18] and Jennifer *et al.*^[23] also reported a lack of knowledge regarding early initiation of breastfeeding to be the most common reason behind delayed initiation of breastfeeding. This lack of knowledge can be due to

the poor coverage of breastfeeding advice given during antenatal visits to the mother.

Giving prelacteal feed is a deep-seated custom in India. When the percentage of mothers giving prelacteal feeding to their babies was considered, findings of the present study are more or less consistent with that of NFHS 5 data and Boralingiah who observed the percentage of mothers giving prelacteal feeding to their babies as 16% and 29%, respectively.^[17] However, Randhawa *et al.*,^[18] Roy *et al.*^[24], Joseph *et al.*^[25] and Kulkarni *et al.*^[26] observed a higher percentage of mothers giving prelacteal feeding to their babies, which is 50.8%, 40.1%, 33.5% and 31.6%,

respectively. Vyas *et al.*^[27] observed remarkably a higher percentage of mothers, that is, 82% giving prelacteal feeding to their babies. We observed that water was the most common prelacteal feed given to babies followed by honey. However, Khan *et al.*^[28] observed most commonly administered prelacteal feed to babies was Janam ghutti which was given to 45.7% of the babies. The difference in the percentage of babies who were administered prelacteal feeding in different studies may be due to the difference in socio-demographic factors and cultural practices prevalent in areas where the studies were conducted.

When we took into consideration the association between the education of mothers and fathers of babies and early initiation of breastfeeding, it was observed that the findings of the present study are consistent with that of studies conducted by Sharma *et al.*,^[4] Setegn *et al.*,^[29] Sandor^[30] and Alkazemi *et al.*^[31] who also observed a significant association between the aforementioned factors and early initiation of breastfeeding. As the levels of education of mothers and fathers increased, there was an increase in the percentage of early initiation of breastfeeding. Patel *et al.*^[16] and Gadhavi *et al.*^[21] also observed that higher maternal education is significantly associated with early initiation of breastfeeding. This is because highly educated mothers better understand and accept the positive impact of early initiation of breastfeeding on their child's health.

When the association between the age of mothers and early initiation of breastfeeding was considered, the findings of the present study are consistent with that of Gadhavi *et al.*^[21] who observed that maximum women above the age of 26 years (76.9%) started feeding babies earlier than their younger counterparts (50%). This may be due to multiparity and physical and emotional maturity related to childbirth. Contrary to the observations of the present study, Sharma *et al.*^[4] found no significant association between the early initiation of breastfeeding and maternal age.

Woldeamanuel^[22] observed a low prevalence of early initiation of breastfeeding in large joint families, which is consistent with the present study. However, contrary to the present study, Gadhavi *et al.*^[21] reported a higher prevalence of early initiation of breastfeeding in joint families (63.7%) than in nuclear families (44.8%). Sharma *et al.*^[4] observed no significant association between the early initiation of breastfeeding and the type of family.

Woldeamanuel^[22] found a significant association between the order of delivery and early initiation of breastfeeding. Gadhavi *et al.*^[21] also found that more number of non-primigravida mothers (60.5%) initiated breastfeeding earlier when compared to primigravida mothers (48.8%), which is consistent with the present study. This might be due to the ease and comfort of the breastfeeding technique, decreased fears and anxiety about baby care and earlier lactation. Contrary to the present study, Sharma *et al.*^[4] did not find any significant association between the timely initiation of breastfeeding and the order of delivery.

When the association between occupation of mother and early initiation of breastfeeding is taken into consideration, Woldeamanuel^[22] and Gadhavi *et al.*^[21] observed that employed professional women had higher chances of early initiation of breastfeeding as compared to homemakers, which is similar to the present study. This may be due to their higher education and awareness regarding the importance of early initiation of breastfeeding. However, contrary to the findings of the present study, Sharma *et al.*^[4] observed that housewives initiated breastfeeding earlier than working mothers. Similar to the present study, Sharma *et al.*^[4] observed no significant association between the early initiation of breastfeeding and the occupation of the husband. We also observed that there was no significant association between the early initiation of breastfeeding and the socioeconomic status of the mother.

Gadhavi *et al.*^[21] observed that vaginally delivered (69.9%) women started breastfeeding earlier than those delivered by cesarean section (28.5%). Woldeamanuel^[22] also found a higher prevalence of early initiation of breastfeeding in mothers delivered by vaginal births. In contrast with the findings of aforementioned studies, we did not observe any significant association between the early initiation of breastfeeding and the type of delivery. Woldeamanuel^[22] and Gadhavi *et al.*^[21] found a lower percentage of early initiation of breastfeeding in low birth weight babies. However, we did not observe any significant association between these two factors.

Sharma *et al.*,^[4] Setegn *et al.*,^[29] Khan *et al.*,^[28] Adhikari *et al.*,^[32] Woldeamanuel^[22] and Gadhavi *et al.*^[21] observed that mothers who were delivered in health institutions are more likely to initiate breastfeeding early when compared with those delivered at home, which is consistent with the present study. This may be due to the supervision and encouragement from healthcare workers and motivation from other recently delivered mothers who already initiated breastfeeding. Sharma *et al.*,^[4] Patel *et al.*^[16] and Wolde *et al.*^[33] observed that counseling during ANC visits regarding the early initiation of breastfeeding and actual practice of early initiation of breastfeeding were significantly associated. They found that mothers who were counseled regarding the importance of early initiation of breastfeeding during ANC visits started feeding their babies earlier than those who were not counseled, which is consistent with the present study.

Conclusion

The prevalence of early initiation of breastfeeding was 45.4% in an urban area of Madhya Pradesh, India. The most common reason behind the late initiation of breastfeeding was found to be a lack of awareness among mothers regarding the importance of early initiation of breastfeeding. Water was the most common prelacteal food given to babies. It was also observed that the percentage of mothers initiating breastfeeding earlier increased when they belonged to a higher age group, nuclear family, were educated, employed, counseled during antenatal visits, non-primigravida and delivered in

health institutions. Education of the father was found to be significantly associated with the early initiation of breastfeeding. We found that the type of delivery, socioeconomic status of the mother, birth weight of the baby and occupation of the husband are not significantly associated with the early initiation of breastfeeding.

Thus, increasing the literacy rate amongst the population, promoting marriages at an appropriate age, counseling pregnant women regarding the early initiation of breastfeeding during antenatal care visits and institutional deliveries can significantly increase the prevalence of early initiation of breastfeeding in mothers of an urban area of Jabalpur, Madhya Pradesh.

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Conflicts of interest

There are no conflicts of interest.

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