

ORIGINAL ARTICLE

Early initiation of breast feeding and its associated factors among 0-23 months children in Haldwani, District Nainital

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Abstract

Introduction: Breastfeeding benefits both the mother and infant. It contains all the essential nutrients in an adequate amount that fulfils the infant first six month's needs. Early initiation of breastfeeding is necessary to ensure consumption of colostrum having multiple protective factors. **Aim and Objectives:** To estimate the prevalence of early initiation of breast feeding and to determine its associated factors among 0- 23 months children. **Methodology:** A community-based cross- sectional study was carried out among 339 children aged 0-23 months in field practice areas of Rural & Urban Health Training Centres (RHTC & UHTC), Department of Community Medicine, Govt. Medical College, Haldwani, District Nainital for a period of 6 months using simple random sampling. Questions related to Early initiation of breast feeding and its associated factors were asked through Epicollect software. Wald's statistics, Chi- square test, Fisher's exact test were applied. P value of less than 0.05 was considered as significant. **Results:** The prevalence of Early Initiation of Breastfeeding was 45.1% (95% CI= 39.9%-50.5%) which was significantly associated with place of delivery, mode of delivery, mother's education & ANC care. **Conclusion:** Early Initiation of Breastfeeding practice was found in almost half of children which were significantly associated with various factors highlighting the importance of addressing these factors to improve Early Initiation of Breastfeeding practices.

Keywords

Breast feeding, breast feeding initiation, Infant and Young Child Feeding Practices (IYCF)

Introduction

Early initiation of breastfeeding, defined as initiation of breastfeeding within 1 h after birth, is considered as one of the key interventions in ending preventable neonatal and child deaths and improving child survival.(1) It increases the chances that newborns receives the first milk "colostrum", that is rich in antibodies and nutrients, vital in protecting the

newborn against infections. (2) Immediate skin-to-skin contact which is important in facilitating early initiation of breastfeeding helps in regulation of newborns body temperature, and thus survival. (1,2) It also enhances early bonding between mother and newborn and in establishing exclusive breastfeeding and continued breastfeeding. (2,3)The benefits to the child of exclusive breastfeeding for the first six

months are well established in terms of morbidity and mortality.(4) Maternal advantages of early initiation of breastfeeding include stimulation of oxytocin release that helps uterus to contract hence reducing the risk of postpartum hemorrhage.(5,6) In addition, evidence indicates that breastfeeding also promotes good health in mothers including reduced risk of breast and ovarian cancer, maternal obesity, diabetes, hypertension, and coronary heart disease.(7)

Although EIBF is one of the core indicators for assessing infant and young child feeding practices (8), it is a far from universal practice. Globally only 42% of newborns were breastfed within 1 hour of birth in 2017, an increase from 37% in 2005. (1) A recent study published in The Lancet (9), allows for a comparison of the prevalence of early initiation of breastfeeding in low and middle-income countries (LMIC) and high-income countries. Of the 68 LMIC for which data were available, 49% reported having more than half of babies put to the breast within one hour and just one country (Kyrgyz Republic) recorded 80%. Worth noting is that 50% of LMIC had no data on early initiation of breastfeeding. In high-income countries, however, there was far less data available: a mere 6 out of the 27 countries examined had data on early initiation of breastfeeding (9), with the highest rate reported in Italy (94%) and the lowest in Saudi Arabia (23%).

This study therefore aimed to determine prevalence and factors associated with early initiation of breastfeeding among women in Haldwani, District Nainital. The information may help to improve EIBF practices which is one of the much-needed interventions to accelerate the achievement of Sustainable Development Goal (SDG) 3.2 of reducing preventable newborn deaths to 12 per 1000 live births by 2030. (10)

Aims & Objectives

To estimate the prevalence of Early initiation of breast feeding and to determine its associated factors among 0- 23 months children.

Material & Methods

The study was a part of large study on “Infant and Young Child Feeding Practices (IYCF)” which was a community based cross-sectional study carried out among children aged 0-23 months residing in field practice areas of Rural & Urban Health Training Centres (RHTC & UHTC), Department of Community Medicine, Govt. Medical

College, Haldwani, District Nainital for a period of 6 months. Sample size was determined by using prevalence of core indicator “Total children age 6-23 months receiving an adequate diet” in rural & urban area of Nainital as reported by NFHS- 4 (11) using formula-

$$N = Z^2 P (100-P) / (L)^2$$

Z= 1.96 for confidence interval= 95%, P= 6.9; 19.5 (rural; urban), L= 5%

Total population taken from UHTC and RHTC was 339 (98 +241) using simple random sampling as per the list of children available at RHTC & UHTC. After taking informed verbal consent, data was collected regarding IYCF practices by interviewing the mothers using pre-designed, pre-tested and semi-structured schedule based on the standard questionnaire on IYCF practices given by WHO using Epicollect software. For determining the status of IYCF practices, 6 core indicators (12) (out of the 8 core indicators and 7 optional indicators as suggested by WHO) was used.

Definition:

Early initiation of breastfeeding (EIBF) is defined as the proportion of children born in the last 24 months who were put to the breast within 1 h of birth. (10) Ethical approval was obtained from the Institutional Ethics Committee, Govt. Medical College, Haldwani. Informed verbal consent will be taken from each participant. The nature & consequence of the study was explained & strict confidentiality was assured. All the mothers were educated and counselled regarding the benefits of optimal IYCF practices. If any child was found to have some medical illness or diet related problem, adequate treatment was to the child and if required, referral to Dr. Susheela Tiwari Hospital was arranged.

The statistical analysis was carried out using the GraphPad online software. The prevalence with confidence interval (CI) was calculated using Wald's statistics. Associations was calculated using chi-square test, Fisher's exact test. P value of less than 0.05 was considered as significant.

Results

The prevalence of Early Initiation of Breastfeeding was 45.1% (95% CI= 39.9%-50.5%). [Table 1] shows that female infants were more as compared to male infants in our study. We had half of the infants of first birth order. Majority of infants were hospital born (97.3%) and normally delivered (60.2%).

[Table 2] depicts Association of Early initiation of breastfeeding with Child characteristics. It was observed that female children had higher proportion of EIB (47.6%) as compared to male children (42.1%) although, the difference was not significant; birth order of 3 & above had higher prevalence of EIB (54.3) followed by first order children (46.5%) & second order children (39.7%) (non- significant); children who delivered at hospital had significantly higher EIB (46.1%) than children who delivered at home; children who were delivered by caesarean section (C-section) had significantly higher EIB (66.2%) than children who were delivered normally (13.3%).

[Table 3] depicts association of Early initiation of breastfeeding with mother's characteristics. It was observed that children born to young mothers < 20 years had higher prevalence of EIB (50%) followed by children born to mothers 20- 29 years (45.3%) and 30 years (44.3%) respectively although the association is not significant; children born to literate mothers had significantly higher prevalence of EIB (47.1%) as compared to children born to illiterate mothers (20%); socio- economic status had no significant association with EIB [low (50%)>high (45.8%)>moderate(37%)]; children born to mothers who received ANC care had significantly higher prevalence of EIB (44.8) as compared to children born to mothers who received ANC care (10%).

Discussion

We reported the total prevalence of EIB at 45%, which was similar to findings from many other researchers from within India. Swetha et al. (13) from Andhra Pradesh who reported the prevalence of 40.46% and Mukhopadhyaya et al. (14) reported 39.6%. Similar finding was also reported from India's neighboring country, Nepal, where Chaudhary et al. (15) showed the prevalence of mothers initiating breast feeding within ½ hour of birth at 41.5%. However, few researchers also noted lower prevalence of EIBF. Khan et al. (16) observed the prevalence at 28%. Higher prevalence of EIBF than our present study was noted by, Islam M.A et al. (17), Yilmaz E et al. (18), and Lyellu et al. (19) where the prevalence were 51.4%, 60.5%, and 83% respectively.

Early initiation of breast feeding in our study was observed in 42.1% of male and in 47.6% female children. Female children were seen to have earlier initiation of breast feeding as compared to males but

the difference was statistically insignificant. Similarly, Islam M.A et al. (17) reported EIBF which was marginally higher in females as compared to males 52.8% and 50.1%.

The relation between EIBF and birth order were not statistically insignificant ($p > 0.05$) but highest early initiation of breast feeding was seen among the birth order of third child and higher (54.3%), followed by first order (46.5%) and least in birth order of second (39.7%). Similarly, Khanal et al. (20) reported statistically in significant association between EIBF and birth order.

The present study found that percentage of children receiving breast feeds within 1 hour of birth were significantly higher among those born in hospital (46.1%) as compared to delivery conducted at home (11.1%). Similar findings were reported by, and Ahmed KY et al (21). where initiation of breast feed was early when delivered in a health facility.

In our present study, it was found that mode of delivery was the most important factor in EIBF among women of Haldwani. Women who had normal vaginal delivery were five times more likely to initiate early breast feeding. Other studies from within India and other countries like Brazil, Ethiopia, Nigeria and also in Tanzania have reported the prevalence to be three times among normal birth. (13,22, 23, 24, 25,19) The possible reason behind delayed initiation of breast feeding among women who have undergone C- section may be the pain, fear, stress, fatigue and the long wait for recovery of the wound. (26) The delay could also be because respiratory distress is likely more among newborn delivered by C-section which might require the baby to be shifted to intensive care unit separate from the mother. (22,23)

Mothers in the age group of <20 were found to have marginally higher likelihood of initiating breast feed early but it was not statistically significant. It was also seen that with the advancement of age initiation of breast feeding was delayed. Similar study was reported by Yilmaz et al. (18) where mothers aged ≤ 25 were seen to initiate breast feeding within 1 hour of child's birth. While on the other hand, Ahmed et al. (21) reported that mothers within the age group of 25-34 had higher odds of initiating breast milk early as compared to the others, which they attribute this to the mothers' being in the peak reproductive age.

We found that maternal education is significantly influencing initiation of breast feeding ($p < 0.05$).

There was delay in breast feeding (80%) among illiterate mothers, whereas nearly half of the literate mother initiated early feeding. This finding concurs with studies conducted by Swetha et al. (13), and Ashwini et al. (27) This could be because educated mothers are more conscious regarding the benefits of early breast feeding for the child and for herself. However, Mamtarani et al. (28), and Islam MA et al. (17) reported that education had a negative influence towards early breast feeding. This could be because C-section is being gradually preferred among educated mothers which may lead to decreased likelihood of practicing EIBF.

In our present study, mothers from low socio-economic background fared better than those from medium and high socio-economic status, though not significant. Similar finding was recorded by Islam MA et al (17). who also found the differences in early initiation of breast feeding with socioeconomic status to be statistically insignificant. Whereas, contrary to present study Khanal et al. (20) reported a significant association between early initiation of breast feeding and socioeconomic status ($p < 0.001$). Mothers who have not attended or received antenatal care were significantly ($p < 0.05$) four times less likely to practice EIBF. Similar findings were also reported by Islam MA et al. (17). This brings out the importance of antenatal education during the time of pregnancy, where health workers (ASHAs, ANMs) guides the expecting mother to a healthy pregnancy. Contrary to our finding, Khanal et al. (20) highlighted that there was no significant association between early initiation of breast feeding and antenatal care. This may be because of the custom and culture in that area where normal delivery and early initiation of breast feeding is encouraged.

Conclusion

Early Initiation of Breastfeeding practice was found in almost half of children enrolled which were significantly associated with various factors highlighting the importance of addressing these factors to improve Early Initiation of Breastfeeding practices. It was also seen that EIBF was positively influenced when the expecting mother undergo antenatal check-ups.

Limitation of the study

The present study have tried to include various variables that may be related to EIBF but few other variables were missed out from the proforma. Being a cross sectional study, we cannot generate

temporal relationship between the associated factors and EIBF. As the study was conducted within the field practice area of our department, generalizing the findings would have to done with caution. Since EIBF was seen more among those who undergo C-section, mothers could be counselled regarding the benefits of EIBF and to discourage C-section if medically unwarranted. Efforts must be made to let the society know about Pradhan Mantri Surakshit Matritva Abhiyan, which is a program launched by the Government and is aimed to provide free, comprehensive and quality antenatal care under which EIBF will be covered.

Authors Contribution

All authors have contributed equally.

References

1. WHO and, UNICEF. Capture the Moment – Early initiation of breastfeeding: The best start for every newborn. New York. 2018.
2. WHO. Every newborn: an action plan to end preventable deaths 2014 [Available from: http://www.who.int/pmnch/ewec_progressreport.pdf?ua=1.
3. UNICEF. From the first hour of life: making the case for improved infant and young child feeding everywhere 2016 [Available from: https://www.unicef.org/publications/index_93027.html.
4. Kramer MS, Kakuma R. Optimal duration of exclusive breastfeeding. *Cochrane Database Syst Rev*. 2012 Aug 15;2012(8):CD003517. doi: 10.1002/14651858.CD003517.pub2. PMID: 22895934; PMCID: PMC7154583. [PubMed].
5. Sobhy SI, Mohame NA. The effect of early initiation of breast feeding on the amount of vaginal blood loss during the fourth stage of labor. *J Egypt Public Health Assoc*. 2004;79(1-2):1-12. PMID: 16916046. [PubMed].
6. WHO. Recommendation for the prevention and treatment of postpartum haemorrhage. 2012 [Available from: www.who.int/reproductivehealth/publications/maternal_perinatal_health/9789241548502/en.
7. Schwarz EB, Nothnagle M. The maternal health benefits of breastfeeding. *Am Fam Physician*. 2015 May 1;91(9):603-4. PMID: 25955734. [PubMed].
8. WHO/UNICEF/IFPRI/UC Davis/USAID/FANTA. Indicators for assessing infant and young child feeding practices. Part 3: country profiles. Geneva: World Health Organization; 2008. (<http://www.who.int/nutrition/publications/infantfeeding/9789241599757/en/>)
9. Victora CG, Bahl B, Barros AJD, França GVA, Horton S, Krasevec J, Murch S, Sankar MJ, Walker N, Rollins NC, for The Lancet Breastfeeding Series Group. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. *Lancet*. 2016; 387:475–90.
10. UN. About the Sustainable Development Goals 2015 [Available from: <https://www.un.org/sustainabledevelopment/health/>.
11. National Family Health Survey (NFHS-4), 2015-16, India. Mumbai: International Institute for Population Sciences (IIPS). Available at <https://nrhmmis.nic.in/SitePages/NFHS.aspx?RootFolder=%2FNFHS%2Ffactsheet%2Fstate%20and%20District%20Factsheets%2FUttrakhand%2FDistrict%20Factsheets&FolderCTID=0x0120005DB66BC9C4CCCB4BA6F96D0FC604FEB7&View={6CF6AB5E-8CFE-428D-8CA4-D23B74FD74F4}>
12. World Health Organization. Indicators for assessing infant and young child feeding practices: conclusions of a consensus meeting held 6-8 November 2007 in Washington D.C., USA WHO 2008.

13. Swetha R, Ravikumar J, Rao RN. Study of breastfeeding practices in coastal region of South India: A cross sectional study. *Int J Contemp Pediatr* 2014;1(2):74–8.

14. Mukhopadhyay DK, Sinhababu A, Saren AB, Biswas AB. Association of child feeding practices with nutritional status of under-two slum dwelling children: a community-based study from West Bengal, India. *Indian J Public Health*. 2013 Jul– Sep;57(3):169-72. doi: 10.4103/0019-557X.119819. PMID: 24125933. [PubMed].

15. Chaudhary RN, Shah T, Raja S. Knowledge and practice of mothers regarding breast feeding: A hospital based study. *Knowl Pract Breast Feed* 2011;9:194–200.

16. Khan A, Radha R. Breast feeding and weaning practices of mothers in a rural area– A cross-sectional study. *Int J Med Sci Public Heal* 2013;2(4):857–61.

17. Islam M.A, Mamun A, Hossain M.M, Bharati P, Saw A, Lestrel PE, et al. (2019) Prevalence and factors associated with early initiation of breastfeeding among Bangladeshi mothers: A nationwide cross-sectional study. *PLoS ONE* 14(4): e0215733. <https://doi.org/10.1371/journal.pone.0215733>

18. Yılmaz E, Doğa Öcal F, Vural Yılmaz Z, Ceyhan M, Kara OF, Küçüközkan T. Early initiation and exclusive breastfeeding: Factors influencing the attitudes of mothers who gave birth in a baby-friendly hospital. *Turk J Obstet Gynecol*. 2017 Mar;14(1):1-9. doi: 10.4274/tjod.90018. Epub 2017 Mar 15. PMID: 28913128; PMCID: PMC5558311. [PubMed]

19. Lyellu HY, Hussein TH, Wandel M, Stray-Pedersen B, Mgongo M, Msuya SE. Prevalence and factors associated with early initiation of breastfeeding among women in Moshi municipal, northern Tanzania. *BMC Pregnancy and Childbirth* [Internet]. 2020 May 11 [cited 2020 May 28];20(1):285. Available from: <https://doi.org/10.1186/s12884-020-02966-0>

20. Ahmed KY, Page A, Arora A, Ogbo FA. Trends and determinants of early initiation of breastfeeding and exclusive breastfeeding in Ethiopia from 2000 to 2016. *International Breastfeeding Journal* [Internet]. 2019 Sep 11 [cited 2020 May 28];14(1):40. Available from: <https://doi.org/10.1186/s13006-019-0234-9>

21. Khanal V, Scott JA, Lee AH, Karkee R, Binns CW. Factors associated with Early Initiation of Breastfeeding in Western Nepal. *Int J Environ Res Public Health*. 2015 Aug 14;12(8):9562-74. doi: 10.3390/ijerph120809562. PMID: 26287223; PMCID: PMC4555298. [PubMed].

22. Liben ML, Yesuf EM. Determinants of early initiation of breastfeeding in Amibara district, Northeastern Ethiopia: a community based cross-sectional study. *Int Breastfeed J*. 2016 Apr 8;11:7. doi: 10.1186/s13006-016-0067-8. PMID: 27064535; PMCID: PMC4826535. [PubMed].

23. Vieira TO, Vieira GO, Giugliani ER, Mendes CM, Martins CC, Silva LR. Determinants of breastfeeding initiation within the first hour of life in a Brazilian population: cross-sectional study. *BMC Public Health*. 2010 Dec 9;10:760. doi: 10.1186/1471-2458-10-760. PMID: 21143893; PMCID: PMC3020684. [PubMed]

24. Berde AS, Yalcin SS. Determinants of early initiation of breastfeeding in Nigeria: a population-based study using the 2013 demographic and health survey data. *BMC Pregnancy Childbirth*. 2016 Feb 6;16:32. doi: 10.1186/s12884-016-0818-y. PMID: 26852324; PMCID: PMC4744410. [PubMed].

25. Exavery A, Kanté AM, Hingora A, Phillips JF. Determinants of early initiation of breastfeeding in rural Tanzania. *Int Breastfeed J*. 2015 Sep 25;10:27. doi: 10.1186/s13006-015-0052-7. PMID: 26413139; PMCID: PMC4582933. [PubMed].

26. Dickens V. Counseling the nursing mother: a lactation consultant's guide; 2011.

27. Ashwini S, Katti SM, Mallapur MD. Comparison of breast feeding practices among urban and rural mothers: A cross-sectional study. *Int J Med Public Heal* 2014;4(1):120–4.

28. Mamtarani, Srivastava RK, Divakar B. Persuade mothers in post natal ward for timely initiation of breastfeeding. *National Journal of Community Medicine* 2011;2(3):366-70..

Tables

TABLE 1 INFANT AND PARENTS CHARACTERISTICS AMONG STUDY GROUP

Infant characteristics	N (%)
Age in months (Mean±SD)	9.5±7.1
Sex of child	
Male	152 (44.8)
Female	187 (55.2)
Birth order of child	
First	172 (50.7)
Second	121 (35.7)
Third & above	46 (13.6)
Place of delivery	
Hospital	330 (97.3)
Home	9 (2.7)
Mode of delivery	
Normal	204 (60.2)
Caesarean	135 (39.8)
Parent characteristics	N (%)
Mother's age in years (Mean±SD)	26.9±4.2
Mother's age	
< 20 years	4 (1.1)
20- 29 years	247 (72.9)
30 years and above	88 (26)
Father's age in years (Mean±SD)	31.4±4.7
Mother's education	
Illiterate	25 (7.4)
Literate	314 (92.6)

Father's education	
Illiterate	14 (4.1)
Literate	325 (95.9)
ANC care	
Yes	329 (97.1)
No	10 (2.9)
SLI	
Low	2 (0.6)
Medium	27 (8.0)
High	310 (91.4)

TABLE 2 EARLY INITIATION OF BREASTFEEDING WITH CHILD CHARACTERISTICS (N=339)

Child Characteristics	Early Initiation of Breast		Total	Statistics
	Feeding			
	Yes (%)	No (%)		
Sex of Child				
Male	64 (42.1)	88 (57.9)	152 (100)	p=0.325, Non-significant
Female	89 (47.6)	98 (52.4)	187 (100)	
Total	153 (45.1)	186 (54.9)	339 (100)	
Birth Order				
First	80 (46.5)	92 (53.5)	172 (100)	p=0.205, χ ² =3.168, df =2
Second	48 (39.7)	73 (60.3)	121 (100)	
Three and above	25 (54.3)	21 (45.7)	46 (100)	Non-significant
Total	153 (45.1)	186 (54.9)	339 (100)	
Place of Delivery				
Home	1 (11.1)	8 (88.9)	9 (100)	P=0.04, Significant
Hospital	152 (46.1)	178 (53.9)	330 (100)	
Total	153 (45.1)	186 (54.9)	339 (100)	
Mode of Delivery				
Normal	135 (66.2)	69 (33.8)	204 (100)	p<0.001, Significant
Caesarean Section	18 (13.3)	117 (86.7)	135 (100)	
Total	153 (45.1)	186 (54.9)	339 (100)	

TABLE 3 EARLY INITIATION OF BREASTFEEDING WITH MOTHER'S CHARACTERISTICS (N=339)

Mother's Characteristics	Early Initiation of Breast		Total	Statistics
	Feeding			
	Yes (%)	No (%)		
Age of Mother				
<20 Years	2 (50.0)	2 (50.0)	4 (100)	p=0.967 χ ² =0.066, df=2 Non-significant
20-29 Years	112 (45.3)	135 (54.7)	247 (100)	
30 and above	39 (44.3)	49 (55.7)	88 (100)	
Total	153 (45.1)	186 (54.9)	339 (100)	
Education of Mother				
Illiterate	5 (20.0)	20 (80.0)	25 (100)	p=0.01 Significant
Literate	148 (47.1)	166 (52.9)	314 (100)	
Total	153 (45.1)	186 (54.9)	339 (100)	
Socio-economic Status				
Low	1 (50.0)	1 (50.0)	2 (100)	p=0.673 χ ² =0.791 df =2 Non-significant
Medium	10 (37.0)	17 (63.0)	27 (100)	
High	142 (45.8)	168 (54.2)	310 (100)	
Total	153 (45.1)	186 (54.9)	339 (100)	
Antenatal Care Received				
Yes	152 (44.8)	177 (55.2)	329 (100)	p=0.02 Significant
No	1 (10.0)	9 (90.0)	10 (100)	
Total	153 (45.1)	186 (54.9)	339 (100)	