Original Article

Factors Affecting Early Initiation of Breastfeeding Among Women Delivered in a Tertiary Care Hospital

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Abstract

Objective: To determine the proportion of early initiation of breastfeeding among women delivered in a tertiary care hospital before discharge and to identify factors affecting it

Methodology: This cross-sectional analytical study was conducted in the Department of Obstetrics and Gynecology, Holy Family Hospital, Rawalpindi from Sep 2022 to Feb 2023. In the study, data were collected from 380 women through a structured questionnaire about the feeding practices and different factors affecting it after taking ethical approval and consent. Data were analyzed by using SPSS version 26. The Chi-square test was used to evaluate the association of the independent variables with the early initiation of breastfeeding. Binary logistic regression analysis was employed to identify the factors independently associated with early initiation of breastfeeding. A p- value of <0.05 was considered significant.

Results**:** Early initiation of breastfeeding was found in only 12.6 % of women. Out of the remaining, 41% started breastfeeding within 2-12 hours. The most common reason for delayed breastfeeding was neonatal NICU admission (29%), followed by postoperative pain (28.6%) and perceived inadequate milk quantity (24.2%). On the Chi-square test, factors having significant association with EIBF are the mode of delivery (p=0.000), availability of guidance by family members or health care representatives (p=<0.001), parity (p-value=0.024) and sex of the baby (p=0.044). On binary logistic regression analysis, factors that were significantly associated with early initiation of breastfeeding, were the mode of delivery, parity and availability of help or guidance by family members or health care representatives (p<0.05).

Conclusion**:** Early initiation of breastfeeding practices can be increased by antenatal counseling and training of mothers, limiting neonatal NICU admission by uniform protocols and training of health care workers.

Keywords: Breastfeeding, Early initiation of breastfeeding

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Introduction

Breastfeeding is a key element for the growth and survival of newborns as well as one of the most cost-efficient measures to reduce child deaths.[1] The World Health Organization (WHO) and the United Nations International Children's Fund (UNICEF) advocate early initiation of breastfeeding (EIBF) which is "putting newborns to the breast within the first hour of life, [2] followed by exclusive breastfeeding for first 6 months and continued breastfeeding up till 2 years of life". [2]

Although the role of exclusive breastfeeding, has long been well established and practiced, the significance of EIBF has been recognized but is less frequently practiced.[3]

Early contact between mothers and newborns via skin-to-skin right after birth is essential to increase the possibility of exclusive breastfeeding and to reduce the risk of hypothermia.[4] EIBF protects the newborn from different types of infections by intake of first milk called "colostrum", which is full of antibodies and nutrients.[5] Its maternal advantages include decreased risk of postpartum haemorrhage by stimulation of oxytocin release. [6] It also promotes attachment between mother

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and newborn.[7]

Approximately three million neonatal mortalities are occurring per year globally. 22.3% of these mortalities could be prevented by EIBF.[8] The neonatal mortality rate in Pakistan is also very high. According to the latest data, it is 42 per thousand[9] live births, making 7% of neonatal deaths occurring all around the world.[10] The infant mortality rate could also be reduced by 11.6% by promoting EIBF.[8]

Despite all the benefits of EIBF, its rate of practice is still low. The global prevalence of EIBF is only 42% .[5] In Asia this ranged from 32 to 40% [5] and in Pakistan it is only 18%. [4] Breastfeeding practices are related to many factors, including demographic, social, economic, behavioral, and cultural characteristics of mothers, place, and route of delivery, counseling in the antenatal and postnatal period, and professional help from healthcare workers.[11] A study done in South Asia found wider variations in rates of EIBF among different countries depending on differences in socioeconomic, geographical location, and cultural variations.[12] Various countries are trying hard to implement WHO policies and evaluating the local situation of EIBF practices to find ways and means to improve it .[13]

Several studies [14,15,16] have explored the factors linked to different practices of breastfeeding in Pakistan, but they report considerable variation in prevalence of early initiation of breastfeeding and factors affecting it, across different settings. These findings cannot be generalized due to regional differences in cultural norms, myths, and family dynamics. To address this, we conducted the study at our hospital to determine the proportion of mothers who initiate breastfeeding early and recognize the factors contributing to delayed initiation. Our hospital, a tertiary care facility, receives a large number of patients from surrounding areas such as Chakwal, Attock, Jhelum, and Azad Jammu and Kashmir, with approximately 12,000 deliveries per year. Notably our neonatal mortality rate remains suboptimal, with delayed initiation of breastfeeding being one of the key contributors. By identifying the factors responsible for delayed initiation of breastfeeding in our setting, this study aims to provide evidence to develop standardized protocols to promote early breastfeeding and improve neonatal outcomes.

Methodology

This cross-sectional analytical study was conducted in the Department of Obstetrics and Gynecology, Holy Family Hospital; Rawalpindi affiliated with Rawalpindi Medical University from September 2022 to February 2023. A sample size of 380 was calculated by the WHO sample size calculator by keeping the confidence level of 95%, assuming 57.3% of [17] early initiations of breastfeeding in the population and 5% absolute precision.

A questionnaire was purposely designed by extensive literature research and expert opinion. The purpose of the questionnaire was to find out the timing and factors influencing the early initiation of breastfeeding. It was in Urdu language. It consisted of five components. The first component was demographic characteristics including identity number, admission number, age and education of participants. For the sake of confidentiality, a special identity number (ID) was given to each patient. The second component was about socioeconomic status. For the sake of study, we divided it into lower, middle, and higher class based on monthly income. The third component was based on reproductive characteristics, including parity of patient, gestational age, mode of delivery, exact time of delivery, neonatal birth weight and neonate. The fourth and most important component was about feeding practices. It included time of initiation of breastfeeding, type of first feed, and reasons for delayed feeding. The last component was about counseling and help provided by health care workers or family members.

Ethical approval from the Institutional Review Board of the University was taken. We enrolled women for the study by a non-probability convenient sampling technique. We took informed consent from all these women for participation in the study.

Delivered live babies in the hospital during the study period were included. Postnatal women who were seriously sick and unable to participate or have neonates with cleft lip, cleft palate or any other major anomaly were excluded from the study.

An information sheet was provided to participants comprising information and the purpose of the study. The questionnaire was filled out by doctors dealing with postnatal patients before their discharge. Confidentiality was maintained throughout the process.

Data were analyzed using SPSS version 26. Descriptive statistics were used to summarize the results. Frequencies and percentages were calculated for categorical variables and mean for continuous variables. The association of the independent variables (e.g. mode of delivery, education level, parity) with

EIBF was determined by the Chi-square test. Binary logistic regression analysis was used to diagnose the factors independently associated with EIBF. Initially, all variables were entered. Stepwise regression was used to find out the significant factors. A p-value below 0.05 was taken as statistically significant.

Results

The total number of study participants was 380.The mean age of participants was 27.5 (SD 5.33) years. Two hundred and thirty-one (61%) women belonged to the age group of 25-35 years. Almost half of our participants had no formal education while only 6 % were educated till secondary or above (Table I).

Table I: Socio-demographic and reproductive characteristics of participants (n= 380)

Factors	Frequencies	%age
Age in years		
<25	121	32%
25-35	231	61%
>35	28	7%
Education		
No formal education	201	53%
Up to Middle	156	41%
Secondary and above	23	6%
Socioeconomic status		
Lower	269	70.7%
Middle	111	29.2%
Upper	0	0%
Parity		
P1	119	31.3%
P1-P4	233	61.3%
≥P5	28	7.4%
Gestational age in weeks		
$24\text{-}27^{+6}$	1	0.3%
$28\text{-}36^{+6}$	74	19.7%
37-42	305	80%
Mode of delivery		
Vaginal	193	50.7%
C-section	187	49.3%
Sex of baby		
Male	206	54%
Female	174	46%
Weight of baby in Kg		
<2.5	48	12%
2.5-3.5	308	81%
>3.5	26	67%

About 71 % had low socioeconomic status, while 29% had middle socioeconomic status (Table I). Regarding reproductive characteristics, many women 233 (61%) were multiparous. The mean duration of pregnancy was 37.3 (SD 2.1) weeks. Regarding neonates, 206 (54%) were male and 174 (46%) were female babies. Most of them had a birth weight (308, 81%) between 2.5 to 3.5 Kg (Table I).

The rate of early initiation of breastfeeding was 12.6% in our study. Different breastfeeding practices observed among the study participants. The findings indicate that 67% (256) of participants engaged in breastfeeding, while 33% (124) provided alternative feeds other than breast milk. Additionally, delayed feeding was noted in 54% (208 out of 380) of the cases. Most women 156 (41%) started breastfeeding within 2-12 hours (Figure. 2). The most common reason for delayed breastfeeding was neonatal NICU admission (29%), followed by postoperative pain (28.6%) and perceived inadequate milk quantity (24.2%) (Figure 1).

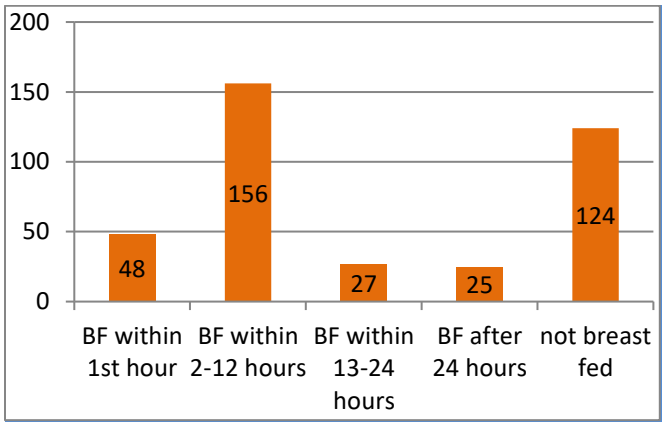

Figure 1. Timings of initiation of breast Feeding (BF).

Guidance for early initiation of breastfeeding was provided by family members in 27 % of women. Next were the healthcare workers (12%) who provided this guidance to the women (Table II). The most common first feed other than breast milk was formula milk in 129 (34%) women, mostly (n=165, 56%) suggested by healthcare workers (Figure 2).

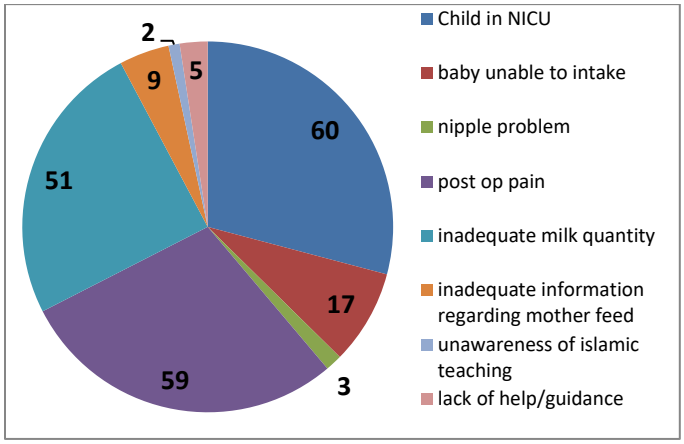

Figure 2. Reasons for delayed initiation of breastfeeding.

Table II Feeding Practices. Feed other than breast milk suggested by.		
Self	65	21.9%
Family/friend	66	22.2%
Health care representative	165	56.1%
EIBF helped/guided by		
Health care member	46	12%
Family/Friend	102	27%
Other	10	3%
none	222	58%
Timing of counseling		
Antenatal	14	5.2%
Postnatal	253	94.7%
Breastfeeding in previous children		
yes	237	62%
No	24	6%
Not applicable	119	31%

On the Chi-square test, factors having significant association with EIBF were the mode of delivery (p=0.000), availability of guidance or help by family members or health care representatives (p=0.001), parity (p-value=0.024) and sex of the baby (p=0.044). There was no significant association between EIBF and the age of the mother (p=0.321), socioeconomic status (p=0.724), education level (p=0.754) and weight of the baby (p=0.466).

In our final model, on binary logistic regression analysis, factors significantly associated with EIBF were the mode of delivery, parity and availability of help or guidance by family members or healthcare representatives (p<0.05). Women who delivered vaginally were about 24 times (AOR: 24.174, 95%CI 5.420-107.819) more likely to initiate breastfeeding within first hour compared to those who delivered by C-section. Multiparous women were two times (AOR: 2.518, 95% CI 1.118-5.674) more likely to breastfed their babies within one hour than primiparous. Women who had guidance or help present for EIBF were three times (AOR: 3.05, 95%CI 1.39-6.69) more inclined to initiate breastfeeding within one hour of birth (Table III).

Table III Factors significantly associated with EIBF on binary logistic analysis.		
Variable	**Adjusted OR (95%CI)**	**P-value**
Mode of delivery Vaginal C-section	24.175(5.420-107.819)	0.000
Parity Multiparity primiparity	2.518(1.118-5.674)	0.026
Guidance/help for EIBF Present Absent	3.05(1.39-6.69)	0.001

Discussion

In the present study, the EIBF rate was determined to be 12.6%. This is much lower than other studies done in Pakistan [18] and other areas of South Asia.[5] This is far from the standards as WHO and UNICEF suggest that 'every newborns be breastfed within the first hour after birth as it gives them the best chance for survival".[2] This difference might be due to disparity in the study setting as most of other studies were community-based.

We found a significant association between the mode of delivery and the timing of initiation of breastfeeding. Women who delivered their babies by vaginal delivery were more prone to initiate breastfeeding early as compared to C-sections. This is consistent with other studies done in Pakistan and globally.[18, 19] Cesarean section is associated with late start of breastfeeding due to post-operative pain, delayed transfer from the recovery room, late wearing of anaesthetic effect, uncomfortable breastfeeding position, and transfer of neonates to NICU. It is evident from our study that neonatal admission in the nursery and post-operative pain were the most common reasons for delayed breastfeeding comparable to research done in Tegrey, Ethopia[8] and India.[20,21] This can be addressed by offering both physical and psychological support to these mothers from their family members and healthcare providers. There should be adequate pain relief and agreed criteria for transfer of neonates to NICU to increase the possibility of early initiation of breastfeeding.

Another important association of early initiation of breastfeeding is with guidance and help provided by health care workers and family members. From our study we found that it was present in less than half of women. Out of these only 14% were counseled for early initiation of breastfeeding during the antenatal period. Moreover, it was only in the form of verbal advice. Health care workers should provide physical support to new mothers. This can be done by trained and dedicated breastfeeding-promoting teams. [22]

Multiparity was another significant factor associated with early initiation of breastfeeding.[23] This means that primiparous mothers need more counseling in antenatal period and help from healthcare workers and family members after birth of baby. The sex of the baby was also significantly associated with an increase chance of early initiation of breastfeeding in our initial

model. This is because male babies are more welcomed in our culture.[3]

Perceived inadequate milk quantity was also an important reason for delayed breastfeeding. It is common thought that a mother's milk is not suitable for 2-3 days after birth. This could be due to a lack of knowledge and misconception about the initial milk known as colostrum. This finding was equivalent with the study done in Romania.[24]

We did not find any correlation between socioeconomic status and education. Literature reported different results regarding these aspects. Some studies showed a significant association [14, 15] while others did not show any association. [16] This might be due to the difference in study setting and effect of other factors like mode of delivery.[25] Other non-significant factors include the weight of the newborn and the mother's age like studies done in Chad.[26]

Conclusion

This study found that only 12.6% of women started early initiation of breast feeding. Providing counseling and health education for early initiation of breastfeeding during and after the pregnancy is important for motivating mothers to timely initiate and continue exclusive breastfeeding for the recommended period. Training of health care workers who can counsel and guide women and their relatives about early initiation of breastfeeding is a key factor which can increase the practice of early initiation of breastfeeding. Primiparous women and women delivered by C-section needs more help by health care workers and their family. Effective pain management and agreed policies for NICU admissions are other areas which need to be addressed.

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References

1. Nguyen PH, Kim SS, Tran LM, Menon P, Frongillo EA. Early breastfeeding practices contribute to exclusive breastfeeding in Bangladesh, Vietnam and Ethiopia. *Matern Child Nutr*. 2020; 16(4): e13012. doi:10.1111/mcn.13012
2. UNICEF, WHO. Capture the Moment – Early initiation of breastfeeding: The best start for every newborn. New York: UNICEF; 2018 https://data.unicef.org/topic/nutrition/infant-and-young-child-feeding/
3. Naqvi S ,Naqvi WA , Iqbal K, Nadeem N ,Zaidi SSZ. Current Breast-Feeding Practices: Are These Compliant with WHO Recommendations? *JRMC;* 2017; 21(4):380-385.
4. Hidayah F, Dewi YLR, Budihastuti RU. Meta-Analysis: The Effect of Early Breastfeeding Initiation on Hypothermia and Diarrhea in Infants. Journal of Maternal and Child Health.2021; 06(06): 642-652 https://thejmch.com/index.php/thejmch/article/view/702.
5. Lyellu, HY, Hussein TH, Wandel M. *et al.* Prevalence and factors associated with early initiation of breastfeeding among women in Moshi municipal, northern Tanzania. *BMC Pregnancy Childbirth* .2020; 20: 285 https://doi.org/10.1186/s12884-020-02966-0
6. Almutairi WM. Literature Review: Physiological Management for Preventing Postpartum Hemorrhage. *Healthcare (Basel)*. 2021;9(6):658. Published 2021 May 31. doi:10.3390/healthcare9060658
7. Mary JJF, Sindhuri R, Kumaran AA, Dongre AR. Early initiation of breastfeeding and factors associated with its delay among mothers at discharge from a single hospital. *Clin Exp Pediatr*. 2022;65(4):201-208. doi:10.3345/cep.2021.00129
8. Gebremeskel SG,Gebru TT , Gebrehiwot BG , Meles HN , Tafere BB , Gebreslassie GW , Welay FT , Mengesha MB , Weldegeorges DA. Early initiation of breastfeeding and associated factors among mothers of aged less than 12 months children in rural eastern zone, Tigray, Ethiopia: cross-sectional study. *BMC Res Notes* .2019; 12:671
9. Pakistan Demographic Survey (PDS) 2018-2020
10. Dawood Z, Majeed N. Assessing neo-natal mortality trends in Pakistan: an insight using equity lens. *Arch Public Health***.** 2022; 80(7) https://doi.org/10.1186/s13690-021-00767-1
11. Woldeamanuel BT. Trends and factors associated with early initiation of, breastfeeding, exclusive breastfeeding, and duration of breastfeeding in Ethiopia: evidence from the Ethiopia Demographic and Health Survey 2016. *Int Breastfeed J* .2020; 15(3). https://doi.org/10.1186/s13006-019-0248-3
12. Tariqujjaman M, Hasan MM, Mahfuz M, Ahmed T, Hossain M. Between and Within-Country Variations in Infant and Young Child Feeding Practices in South Asia. Int. J. Environ. Res. Public Health .2022; 19: 4350. https:// doi.org/10.3390/ijerph19074350
13. Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services. Geneva: World Health Organization; 2017
14. Arif S , Khan H, Aslam M, Farooq M. Factors influencing exclusive breastfeeding duration in Pakistan: a population-based cross-sectional study. BMC Public Health. 2021; 21:1998. DOIhttps://doi.org/10.1186/s12889-021-12075-y
15. Mahmood K, Mahmood Z, Ghaffar J, Uzair M, Farrukh R, Sultana S. Breast Feeding Practice Among Females of Pakistan and Factors Affecting Its Practice:Breast Feeding Practice Among Females.Pakistan Journal of Health sciences.2022; 3(04):82-86. DOI: 10.54393/pjhs.v3i04.122
16. Barkat R, Jiwani A, Rahim A, Khan S. Frequency of early initiation of breastfeeding among women in Thatta, Sindh and factors associated with it: A secondary data analysis. JPMA. 2021; 71(12): 2731-2734. DOI: https://doi.org/10.47391/JPMA.01-1283
17. Gayatri M. Relationship between cesarean section and early initiation of breastfeeding in Indonesia. Public Health and Preventive Medicine Archive (PHPMA) .2022; 10(1): 100-107 doi: 10.53638/phpma. 2022. v10.i1.p11
18. Kumar R, Amir-Ud-Din R, Ahmed J, et al. Correlates of early initiation of breast feeding and prelacteal feeding: a cross-sectional study in Sindh province of Pakistan. *BMJ Open*. 2023; 13 (2):e069902. doi: 10.1136/bmjopen-2022-069902
19. John J, Mistry S, Kebede G, Manohar N, Arora A. Determinants of early initiation of breastfeeding in Ethiopia: a population-based study using the 2016 demographic and health survey data. BMC Pregnancy Childbirth. 2019; 19:69 doi :https://doi.org/10.1186/s12884-019-2211-0

20. Senanayake P, O'Conno E, Ogbo FA. National and rural-urban prevalence and determinants of early initiation of breastfeeding in India. *BMC Public Health* .2019; 19: 896 https://doi.org/10.1186/s12889-019-7246-7
21. Mary JJF, Sindhuri R, Kumaran AA, Dongre AR. Early initiation of breastfeeding and factors associated with its delay among mothers at discharge from a single hospital. *Clin Exp Pediatr*. 2022; 65(4):201-208. doi:10.3345/cep.2021.00129
22. Kaur R, Kant S, Goel AD, Bhatia H, Murry L. A quality improvement intervention to improve early initiation of breastfeeding among newborns delivered at a secondary level hospital in northern India. *Med J Armed Forces India*. 2021; 77(2):230-236. doi:10.1016/j.mjafi.2021.01.
23. Hackman NM, Schaefer EW, Beiler JS, Rose CM, Paul IM. Breastfeeding outcome comparison by parity. *Breastfeed Med*. 2015; 10(3):156-162. doi:10.1089/bfm.2014.0119
24. Cozma-Petruţ A, Badiu-Tişa L, Stanciu O, Filip L, Banc R, Gavrilaş L, et al. Determinants of early initiation of breastfeeding among mothers of children aged less than 24 months in Northwestern Romania. Nutrients. 2019; 11:2988. doi: 10.3390/nu11122988.
25. Seyoum K, Tekalegn Y, Quisido BJ E. Determinants and prevalence of early initiation of breastfeeding: Does the place of delivery matter? A comparative cross-sectional study based on the 2016 Ethiopian Demographic and Health Survey data. Population Medicine. 2021; 3(December):37. doi:10.18332/popmed/144318.
26. Ahinkorah BO, Seidu AA, Budu E, Mohammed A, Adu C, Ameyaw EK, Kissah-Korsah K, Adoboi F, Yaya S. Maternal and child factors associated with early initiation of breastfeeding in Chad: evidence from nationally representative cross-sectional data, *International Health*. 2022; 14(5): 510–518. https://doi.org/10.1093/inthealth/ihab060
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