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Frequency and Determinants of Early Breastfeeding Initiation in Neonates: A Cross-Sectional Study at a Tertiary Care Hospital in Pakistan

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Author`s Contribution

[1]Substantial contributions to the conception or design of the work; or the acquisition, [3]Drafting the work or revising it critically for important intellectual content [5]Critical review, [2,4]Active participation in active methodology

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ABSTRACT

Objective: This study aimed to determine the frequency of breastfeeding within the first hour of birth and identify barriers to its initiation at a tertiary care hospital in Pakistan.

Methodology: A descriptive study was conducted at Ayub Teaching Hospital, Abbottabad from April to Sept 2024, involving 249 postpartum women. Data were collected using a structured questionnaire and analyzed using SPSS version 23. The study assessed various socio-demographic and clinical factors influencing breastfeeding initiation.

Results: Only 13.25% of neonates were breastfed within the first hour of birth. Key barriers included maternal age (18-25 years), large family size (≥6), illiteracy, premature or post-term delivery, cesarean section, neonatal intensive care unit (NICU) admission, and insufficient breast milk production. Mothers aged 26-35 years and those with smaller families were more likely to initiate breastfeeding early.

Conclusion: The low prevalence of early breastfeeding initiation highlights the need for targeted interventions, including the implementation of the Baby-Friendly Hospital Initiative (BFHI) and increased maternal education on breastfeeding techniques. Addressing these barriers could significantly improve neonatal health outcomes in Pakistan.

Keywords: breastfeeding, neonatal mortality, postpartum period, low-middle income countries

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Introduction

More than four million babies die in the first 27 days of life (neonatal period) every year, and most of these deaths occur in low middle-income countries[1]. The longer the delay in breastfeeding initiation, the greater the chances of neonatal mortality caused by infections[2]. Breastfeeding within the first hour of life has been shown to reduce high neonatal mortality by 22%[3]. During this sensitive period, the protective effect of breastfeeding delivered by colostrum may be related to a range of mechanisms that include intestinal colonization by specific bacteria found in maternal milk, and the ability of breast milk to produce bioactive immune factors suitable for the newborn.[4] The Baby-Friendly Hospital Initiative (BFHI) of the World Health Organization (WHO) recommends placing babies in skin-to-skin contact with their mothers immediately after birth for at least one hour and helping mothers to recognize when their babies are ready to breastfeed[4]. This aid to mothers in initiating breastfeeding corresponds to step four of the BFHI[5, 1].

Furthermore, infancy is one of the earliest and the most sensitive stages of life, which demands extensive and precise care. After the birth of a child, nutrition quality during the first years of life is one of the primary factors influencing healthy growth and development of infants. Research has proved that breastfeeding is very beneficial for the mother and infant, and it, on its own, can fulfil all the nutritional requirements of infants, from birth to the end of the first six months of life[1, 2]. In addition, breastfeeding strengthens the immune system of the infants and reduces the risk of the infant developing obesity, diabetes, otitis, and asthma, and it increases the chance of survival in premature babies. Besides, another important constituent of early-stage breast milk is

Immunoglobulin-A, which is found in higher concentrations in colostrum when compared to mature milk[6]. On the other hand, the most well-known benefits of breastfeeding for the mother may include decreased risk potential of various diseases: type-II diabetes, cardiovascular diseases, depression and anxiety, and, above all, breast and ovarian cancer[2, 3]. In this regard, the World Health Organization (WHO) and many other health institutions recommend exclusive breastfeeding and prohibit the intake of any food or drink, including water, other than breast milk for the first six months[1, 4-6].

However, despite the known benefits and potentials of breastfeeding and the recommendations of health organizations, including WHO, the rate of breastfeeding during the first hour of birth is still not at the desired level worldwide[5, 7].

Pakistan has one of the largest birth cohorts globally, with over five million children born each year. In this context, the promotion of breastfeeding in the first hour of life is one of the strategies of greater cost-effectiveness for improving child health,[8] which highlights the importance of the adoption of breastfeeding within the first hour of life as a hospital routine. The present study was conducted to measure the frequency of breastfeeding in the first hour of life in the tertiary care hospital, explore clinical and social factors inhibiting the initiation of breastfeeding within the first hour of birth, and make recommendations for improving the rate of breastfeeding within the first hour of birth.

Methodology

This study was conducted at Gynae C-Unit, Ayub Teaching Hospital, Abbottabad from April to Sept 2024, included all women who delivered there. A descriptive study technique was adopted as a study design for this research. Ethical approval was taken from the ethical committee of Ayub Teaching Hospital, Abbottabad. WHO sample size calculator was used to estimate the sample size at a confidence level of 99% and 3% absolute precision value with a 3.5% prevalence of initiating breastfeeding within the first hour of birth[12]. The calculated sample size was 249. Non-probability, convenience sampling technique was adopted to collect the required sample. Women who were not willing to participate and with stillbirths and foetal loss were excluded from the study. Data was collected using a proforma, which included demographic data and the barriers to breastfeeding. The collected data were later tabulated and analysed using SPSS version 23. Descriptive statistics were used to present the frequency and percentage of breastfeeding initiation within the first hour of birth. Frequency of Barriers and facilitators of breastfeeding were also recorded.

Results

The study included 249 participants, with an average maternal age of 30.2 years. Of the neonates, 141 were male, and 108 were female. Only 33 (13.25%) neonates were breastfed within the first hour of birth, while 216 (86.75%) were not.

There were multiple barriers to breastfeeding within one hour of birth. Mothers aged 26-35 years were more likely to initiate breastfeeding early (17.59% did not breastfeed within the first hour). Mothers with smaller families (1-5 members) had a higher prevalence of early breastfeeding initiation (36.57%). Literate mothers were more likely to initiate breastfeeding early (25.92%). Premature (<34 weeks) and post-term (>39 weeks) deliveries were associated with delayed breastfeeding initiation. Cesarean sections were linked to delayed initiation (63.88% of cases). 58.33% of neonates were shifted to the NICU, delaying breastfeeding initiation. 61.11% of mothers reported insufficient breast milk production, a significant barrier to early initiation. (Table I)

Discussion

The findings of this study reveal that only 13.25% of neonates were breastfed within the first hour of birth at Ayub Teaching Hospital, Abbottabad, Pakistan. This low prevalence of early breastfeeding initiation is consistent with previous studies conducted in low- and middle-income countries (LMICs), where cultural, social, and healthcare-related barriers often hinder optimal breastfeeding practices[9,10]. The World Health Organization (WHO) recommends early initiation of breastfeeding within the first hour of life as a critical intervention to reduce neonatal mortality and morbidity[11]. However, the results of this study highlight significant gaps in achieving this global health target in Pakistan.

Maternal age and family size were identified as key determinants of early breastfeeding initiation. Mothers aged 26-35 years were more likely to initiate breastfeeding early compared to younger mothers (18-25 years). This finding aligns with studies suggesting that older mothers may have greater confidence and

experience in breastfeeding practices[12]. Additionally, mothers with smaller families (1-5 members) were more likely to initiate breastfeeding early, which may reflect reduced caregiving burdens and greater maternal focus on newborn care [13].

Maternal education emerged as a significant factor influencing early breastfeeding initiation. Literate mothers were more likely to breastfeed within the first hour of birth compared to illiterate mothers. This is consistent with global evidence that maternal education positively impacts breastfeeding practices by enhancing awareness of its benefits and improving access to healthcare information[14]. In contrast, illiteracy among mothers was associated with delayed breastfeeding initiation, underscoring the need for targeted educational interventions to address knowledge gaps.

Premature (<34 weeks) and post-term (>39 weeks) deliveries were associated with delayed breastfeeding initiation. This is likely due to medical complications and the need for neonatal intensive care, which often disrupts early mother-infant contact[15]. Cesarean section deliveries, which accounted for 63.88% of cases in this study, were also a significant barrier to early breastfeeding initiation. This finding is consistent with global evidence that cesarean deliveries are associated with delayed breastfeeding due to maternal recovery time, anesthesia effects, and separation of mother and baby[16].

Table I: Barriers to Breastfeeding.

Total subjects with no breastfeeding within the first hour of birth. (n=216)		**N**	**%**
Age	18-25	97	44.90
	26-35	38	17.59
	36-45	81	37.5
family size	1-5	79	36.57
	≥6	137	63.42
mother education	Literate	56	25.92
	Illiterate	160	74.07
Locality	Urban	101	46.75
	Rural	115	53.24
gestational age	<34 weeks	112	51.85
	34-39 weeks	36	16.66
	>39 weeks	68	31.48
Mode of Delivery	vaginal delivery	78	36.11
	C Section	138	63.88
Post-natal medical emergency	Shifting of the baby to NICU	126	58.33
	Shifting of mother to ICU	10	4.62
	no medical emergency	80	37.03
significant clinical issue with the mother	No or insufficient production of breastmilk	132	61.11
	Inverted nipples	5	2.31
	No significant complications	79	36.57
Breastfeeding technique education	Yes	95	43.98
	No	121	56.01

A significant proportion of neonates (58.33%) were admitted to the Neonatal Intensive Care Unit (NICU), which delayed breastfeeding initiation. The lack of breastfeeding facilities in NICUs and the inability to establish skin-to-skin contact further exacerbated this issue. This finding aligns with studies highlighting the challenges of breastfeeding in NICU settings, where medical interventions often take precedence over early breastfeeding[17]. Additionally, 61.11% of mothers reported insufficient breast milk production, which is a common barrier to early breastfeeding initiation in LMICs[18]. Addressing this issue requires interventions to support lactation, such as early skin-to-skin contact and lactation counselling.

Due to the non-availability of breastfeeding education programs, 56.01% of mothers reported no prior education on breastfeeding techniques. This highlights a critical gap in maternal healthcare services, as education on proper breastfeeding techniques has been shown to improve early initiation rates[19]. Increasing awareness and providing hands-on support to mothers during the immediate postpartum period could significantly enhance breastfeeding practices.

Conclusion

The study highlighted the low prevalence of early breastfeeding initiation in tertiary care hospitals in Pakistan and identified lack of education, multiparity and cesarean section as key barriers that need to be addressed.

Implementing the BFHI and increasing maternal education on breastfeeding could significantly improve early initiation rates, thereby reducing neonatal mortality and morbidity.

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