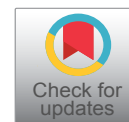




ORIGINAL ARTICLE

Determinants of Early Breastfeeding in a Referral Hospital in Abidjan (Côte d'Ivoire)

Kouakou C^{1,2*}, Djivohehoun A^{1,2}, Djoman I^{1,2}, Kouadio E, Dainguy M^{1,2}, Gro BA^{1,2}, Soro C, N'gatta P^{1,2} Menye ME, Mansou A and Folquet



¹Department of Pediatrics, Cocody University Hospital, Abidjan, Cote d'Ivoire

²Department of Mother-Child, Faculty of Medicine, Felix Houphouet-Boigny University, Abidjan, Cote d'Ivoire

*Corresponding author: Kouakou Kouamé Cyprien, Department of Pediatrics, Cocody University Hospital; Department of Mother-Child, Faculty of Medicine, Felix Houphouet-Boigny University, Abidjan, Cote d'Ivoire, Tel: +2250707564690

Abstract

Introduction: Breastfeeding helps to improve the survival of the newborn, especially in countries with limited resources. To achieve full adherence by mothers to the early breastfeeding of the newborn in hospital, it is necessary to understand the factors likely to influence this practice. The objective of this study was to determine the factors related to the practice of early breastfeeding in mothers.

Methods: This was a cross-sectional study with a descriptive and analytical purpose over a period of six months from January 1, 2022, to June 30, 2022, in the neonatology unit of the Abobo Houphouet Boigny Regional Hospital Center.

Results: The average age was 26.56 ± 5.05 years. The majority (77%) was in a relationship and 15.5% had a higher level of education. Those who were self-employed represented 55% while 9% were pupils or students. Early breastfeeding was practiced by only 15.4% of them. Factors in the practice of early breastfeeding were mothers' knowledge of the adequacy of breast milk for infants up to 6 months of age.

Conclusion: It is essential to take the identified factor into account in the development of strategies aimed at increasing the rate of early breastfeeding.

Keywords

Breastfeeding, Early breastfeeding, Colostrum, Cote d'Ivoire

help mothers recognize when their babies are ready to breastfeed. Helping mothers initiate breastfeeding during this sensitive time when mothers and newborns are in alert corresponds to Baby-Friendly Hospital Initiative (BFHI) Step 4 [1]. According to the WHO, 78 million newborns or three out of five are not breastfed within one hour of birth, increasing their risk of death and disease and reducing their likelihood of being breastfed later [2]. Newborns who are breastfed in the first hour of life are much more likely to survive. Skin-to-skin contact and feeding stimulate the production of colostrum, which is the newborn's "first vaccine" because of its richness in nutrients and antibodies. Breastfeeding rates within one hour of birth are highest in eastern and southern Africa (65%) and lowest in East Asia and the Pacific (32%) [2]. In west and central Africa, only 46% of newborns are breastfed in the first hour of life [3]. The WHO initiative aims for west and central Africa to achieve the global target of 50% exclusive breastfeeding by 2025. Côte d'Ivoire, a country in West Africa has an early breastfeeding rate of 36.6% [4]. This rate remains low compared to the WHO target. Despite the benefits of early breastfeeding and the recommendation made by the World Health Organization, its practice by mothers remains insufficient. To help increase the rate of adherence to early breastfeeding, we thought it would be appropriate to determine the factors that could influence its practice. The results of this study will therefore be used to guide women's awareness strategies.

Introduction

The World Health Organization (WHO) recommends that newborns be put in skin-to-skin contact with their mothers immediately after birth for at least an hour and

Methodology

It was a cross-sectional study with a descriptive and analytical purpose that took place over a period of six (06) months from January 1, 2022, to June 30, 2022. The study took place in the district of Abidjan in the neonatology unit of the Regional Hospital Center of Abobo Houphouet Boigny. Study subjects were recruited from the mother-child pair admitted to the neonatal block for any reason. The study included any woman and her newborn born less than 72 hours of age, and who had given oral consent. The sampling was based on a progressive constitution model. The selection of women and newborns was done in order of arrival in the structure throughout the duration of the survey. Mother-child pairs whose newborn child died during the interviewer's visit were not included in the study.

Data Collection and Analysis

Data were collected using a questionnaire by a previously trained physician. The purpose of the study was clearly explained by the investigator to the women as well as the assurance of confidential management of the information collected. After consent, the child's medical file was analyzed. The information collection technique was a direct face-to-face interview with each of the mothers surveyed. Descriptive statistical analyses were performed for the calculation of means, frequencies, standard deviations and bivariate analyses (Chi² test) to determine the relationship between selected variables and early initiation of breastfeeding (consumption of breast milk by the newborn within one hour of birth). The materiality threshold for statistical tests was set at 5%. Excel and EPI INFO software were used for the analysis of the results. The variables studied concerned mothers: socio-professional characteristics (age, marital status, profession, ethnicity, place of residence, religion, lifestyle, stay in the maternity ward), newborns (reason for admission, maternity of origin, pregnancy follow-up, gestational age, measurements, trophicity, diagnosis in hospital, date of first breastfeeding, difficulties encountered by the mother in the practice of breastfeeding, length of stay (days), evolution).

Results

Socio-professional characteristics

More than half of the women surveyed (71%) were under 25 years of age. The mean age was 26.56 years with a standard deviation of 5.05. The majority (77%) lived in couples. They were self-employed in 55% of cases and students in 9% of cases. Of these women, only 15.5% had a tertiary education. [Table 1](#) presents the characteristics of mothers.

Prevalence of early breastfeeding

Of the ninety-seventeen (97) newborns included, 15.4% were breastfed within one hour of birth. More than half of them (53%) were put to the breast within

Table 1: Socio-occupational characteristics of mothers.

Mother's age	Population (n = 97)	Percent (%)
< 34-years-old	69	71
≥ 35-years-old	28	29
Marital status		
Married	39	40
Cohabitation	36	37
Unmarried	22	23
Profession		
Liberal activity	53	55
Student	9	9
Private sector employee	1	1
Housewife	12	12.4
Public sector employee	4	4.1
Unemployed	18	18.6
Mothers' level of education		
Not in school	33	34
Primary school	18	18.6
Secondary school	31	32
College	15	15.5
Fathers level of education		
Not in school	53	54.6
Primary school	20	20.6
Secondary school	15	15.5
College	9	9.3
Mode of delivery		
Vaginal delivery		72
Caesarean section		28

Table 2: Overall prevalence of early breastfeeding.

Feeding mode	Number	%
Breastfeeding within one hour of birth	15	15.4
Breastfeeding within 24 hours of birth	52	53.6
Other feeding mode	45	46.4

24 hours of birth. On the other hand, newborns who received colostrum beyond 24 hours accounted for 31% of cases ([Table 2](#)). The sex ratio was 0.69. Preterm infants accounted for a quarter of newborns (25%), 5% of whom had a gestational age of less than 32 weeks of amenorrhea (WA). Most of them were born vaginally (72%). The pathologies found in hospitalizations were mainly bacterial neonatal infection and anoxic-ischemic encephalopathy ([Figure 1](#)). The average length of hospitalization was 6 days. The death rate was 4%.

[Table 2](#) presents the prevalence of early breastfeeding.

The proportion of women who latched on early was 15.4%.

Determinants of early breastfeeding

Newborn factors: [Table 3](#) presents the determinants

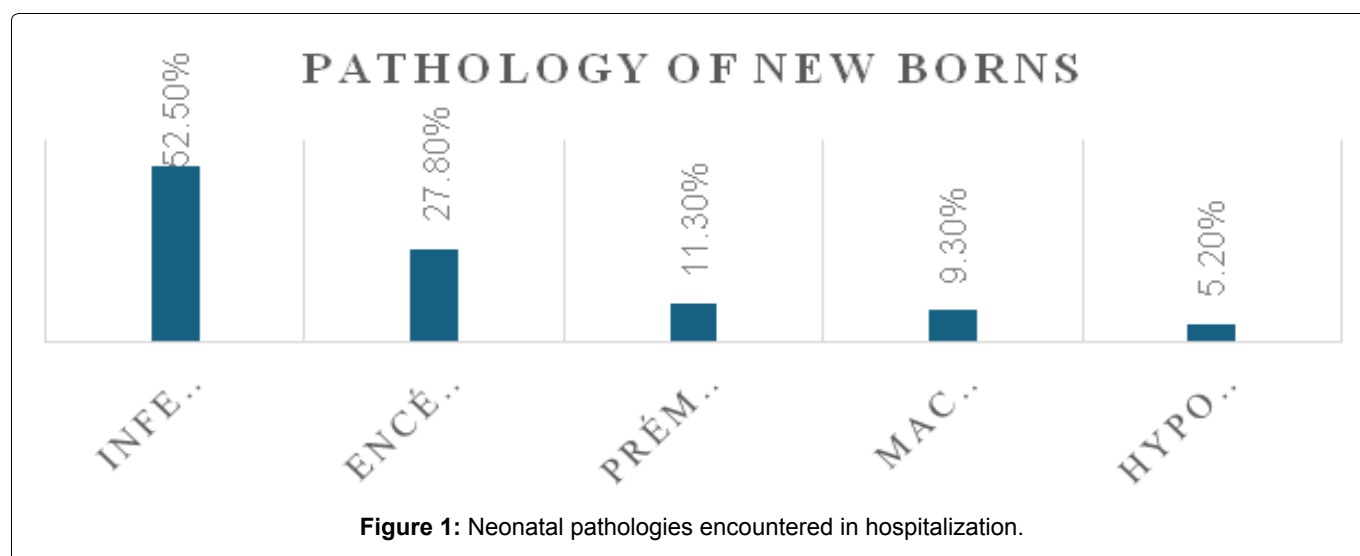


Table 3: Newborn factors.

Parameters	Breastfeeding in hour (n = 15)		Breastfeeding beyond of the hour of life (n = 82)		P	Chi ²	OR
	n	%	n	%			
Sex							
Male	10	66.6	55	67	0.0009	0	0.98
Female	5	33.3	27	33			
Trophicity							
Hypotrophic	3	20	16	19.5	0.6		1
Eutrophic	12	80	66	80.5			
Resuscitation at birth							
Yes	2	13.3	24	29.3	0.16		0.3
No	13	87	58	70.7			
Term							
Prematurity	2	13.3	19	23.1	0.31		0.5
Full-term newborn	13	87	63	76.9			

related to the newborn and early breastfeeding. There was a statistically significant association between sex and early breastfeeding ($p = 0.0009$).

Factors related to the mother: The determinants related to the mother's context are presented in Table 4.

There was a statistically significant association between early breastfeeding and maternal knowledge of infant breast milk adequacy up to 6 months of age ($p = 0.007$).

Discussion

Breast milk is universally recognized as the ideal food for infants [5]. It is said to promote the growth and development of the child and help reduce the incidence and severity of infectious diseases such as pneumonia and gastroenteritis. It may also act as a protective factor against the risk of breast and ovarian cancer in women [6-8]. Early initiation of breastfeeding becomes the main gateway to future breastfeeding success and ensures that children get adequate nutrition [9]. However, to achieve these benefits, it is recommended

that newborns be breastfed within one hour of birth and that they continue breastfeeding exclusively for the first six months of life [10]. In this study, the rate of early breastfeeding was 15.4%. However, more than half of the newborns in this series had received colostrum within 24 hours of birth. At the national level, the rate of early breastfeeding was 36.6% [4]. This difference could be explained by the fact that this study focused on sick newborns hospitalized in the first hours of life. In West Africa, the prevalence of newborns being breastfed early is 40%, which is close to national data [11]. In 2017, an estimated 78 million newborns waited more than an hour before being breastfed [12]. Rates of early breastfeeding vary widely across regions, ranging from 35% in the Middle East and North Africa to 65% in Eastern and Southern Africa [12]. A newborn's immune system is immature: It needs time to produce its antibodies. Colostrum, which is less rich in lipids and lactose, contains a higher number of proteins (immunoglobulins type A), and other immunological components (lactoferrin) of cells (macrophages and T lymphocytes), pro-inflammatory cytokines (TNF α , IL-1, IL-6, IL-8, IL-12,

Table 4: Contextual determinants and early breastfeeding.

Parameters	Breastfeeding in hour (n = 15)		Breastfeeding beyond of the hour of life (n = 82)		P	Chi ²	OR
	n	%	n	%			
Mothers' knowledge of breastfeeding							
Is immediate breastfeeding essential?							
Yes	7	46.6	47	57.3	0.5	7.5	0.6
No	8	53.3	35	42.7			
Is breast milk enough to feed the newborn before 6 months?							
Yes	11	73.3	29	35.4	0.007	7.5	5
No	4	26.6	53	64.6			
Mothers' perception							
Do you intend to breastfeed your child exclusively?							
Yes	14	93.3	82		0.15		0.00
No	1	6.6	00				
Self-confidence							
Yes	14	93.3	80	97.6	0.39		0.35
No	1	6.6	2	2.4			
Was the pregnancy planned?							
Yes	10	66.6	80	97.5	0.0008	18	0.05
No	5	33.3	2	2.5			
Have you received any information about breastfeeding from parents?							
Yes	9	60	63	77	0.14		0.40
No	6	40	19	23			
Number of antenatal visits							
< 4	5	33.3	18	22	0.25		1.7
≥ 4	10	66.6	64	78			
Gesturity-Parity							
Multi-gesture	6	40	35	42.7	0.03	0.04	0.8
Primiparous	3	20	21	25.7	0.4		0.7
Mode of delivery							
Vaginal delivery	12	80	58	71	0.3		1.6
C-section	3	20	24	29			

IL18) and anti-inflammatory cytokines (IL-10 and TGF). There are also growth factors and oligosaccharides [13]. Immune factors oppose the development of bacteria, viruses and fungi by the presence of many cells and proteins. The gastric pH of the newborn is around 3 to 5, which makes the destruction of proteins less easy than in the stomach of an adult (pH 1 to 2). This is why secretory IgA and lactoferrin are found intact in infant faces [13]. More than half of the mothers had made the decision to breastfeed before pregnancy. The intention to breastfeed during the prenatal period is a predictor of breastfeeding success, starting with early breastfeeding [14-16]. Among the reasons mentioned in this study was the sufficiency of breast milk until the age of 6 months. Other authors have reported other reasons, including the benefits for the health of the child, the naturalness of breastfeeding and the strengthening of the mother-child bond [16]. Although the intention to breastfeed is a strong predictor of breastfeeding practice, our results

indicate that other factors may negatively influence early breastfeeding. These were caesarean section, the clinical condition of the newborn, low birth weight and resuscitation. Other authors have reported a variety of situations that can occur and cause a mother to stop breastfeeding early [17].

Conclusion

The practice of early breastfeeding remains low. The factor that influences its practice is the mother's knowledge of the sufficiency of the milk. The Ministry in charge of Health, through the Directorate for the Coordination of the National Nutrition Program, should develop messages, communication strategies and supervision techniques adapted to young mothers-to-be, on the conduct of early breastfeeding taking this factor into account. This would undoubtedly contribute to the reduction of morbidity and infant mortality in Côte d'Ivoire.

References

1. World Health Organization and the United Nations Children's Fund (UNICEF) (2020) Baby-friendly hospital initiative training course for maternity staff: Participant's manual. Geneva. Licence: CC BY-NC-SA 3.0 IGO.
2. <https://www.who.int/fr/news/item/31-07-2018-3-in-5-babies-not-breastfed-in-the-first-hour-of-life>
3. World Health Organization, UNICEF, IBFAN (2022) Marketing of breast-milk substitutes: National implementation of the international code, status report 2022. World Health Organization, Geneva.
4. National Institute of Statistics (INS) (2017) Multiple Indicator Cluster Survey 2016-17, Key Findings Report. Abidjan, Ivory Coast.
5. Borade A, Hanumante N (2008) Maternal knowledge and perception about the breast feeding and factors influencing it a study in urban low socioeconomic class of Pune. *Paediatric Oncall* 5.
6. Villavicencio F, Perin J, Eilerts-Spinelli H, Yeung D, Prieto-Merino D, et al. (2024) Global, regional, and national causes of death in children and adolescents younger than 20 years: An open data portal with estimates for 2000-21. *Lancet* 12: E16-E17.
7. Mary JJF, Sindhuri R, Kumaran AA, Dongre AR (2022) Early initiation of breastfeeding and factors associated with its delay among mothers at discharge from a single hospital. *Clin Exp Pediatr* 65: 201-208.
8. Kalbermatter C, Fernandez Trigo N, Christensen S, Ganal-Vonarburg SC (2021) Maternal microbiota, early life colonization and breast milk drive immune development in the newborn. *Front Immunol* 12: 683022.
9. Muldiasman M, Kusharisupeni K, Laksmningsih E, Besral B (2018) Can early initiation to breastfeeding prevent stunting in 6 to 59 months old children? *J Heal Res* 32: 334-341.
10. World Health Organization (2023) Infant and young child feeding.
11. Apanga PA (2014) A review on facilitators and Barriers to exclusive breastfeeding in west Africa. *J Biol Agric Healthc* 4.
12. Alive and Thrive and UNICEF (2022) Factors influencing the practice of exclusive breastfeeding and other infant feeding practices in the first six months of life in west and central Africa.
13. Castellote C, Casillas R, Ramirez-Santana C, Pérez-Cano FJ, Castell M, et al. (2011) Premature delivery influences the immunological composition of colostrum and transitional and mature human milk. *J Nutr* 141: 1181-1187.
14. Jones CL, Culpin I, Evans J, Pearson RM (2020) Relative effects of breastfeeding intention and practice on maternal responsiveness. *Infant Ment Health J* 41: 82-93.
15. Moimaz SAS, Rocha NB, Garbin CAS, Rovida TA, Saliba NA (2017) Factors affecting intention to breastfeed of a group of Brazilian childbearing women. *Women Birth* 30: e119-e124.
16. Arora S, McJunkin C, Wehrer J, Kuhn P (2000) Major factors influencing breastfeeding rates: Mother's perception of father's attitude and milk supply. *Pediatrics* 106: E67.
17. Odom EC, Li R, Scanlon KS, Perrine CG, Grummer-Strawn L (2013) Reasons for earlier than desired cessation of breastfeeding. *Pediatrics* 131: e726-e732.