

Factors Associated with the Non-Early Initiation of Breastfeeding in a Reference Hospital in Abidjan (Côte d'Ivoire)

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Abstract

Context: WHO and UNICEF global recommendations state that all newborns should initiate breastfeeding within one hour of birth. It is a low-cost method with considerable potential to reduce neonatal and early infant morbidity. **Objective:** The objective of this study was to determine the factors associated with the non-initiation of early breastfeeding in mothers. **Methods:** This was a cross-sectional study with descriptive and analytical aims over a six-month period from January 1, 2022, to June 30, 2022, in the neonatology unit of the Regional Hospital Center of Abobo Houphouët Boigny. Cluster sampling was used. Data were collected using a structured and pre-tested interview questionnaire. Associations between early initiation and independent variables were tested using the Chi-square test. Crude odds ratios (COR) with 95% confidence intervals (CI) were used. **Results:** The mean age of the mothers was 26.56 ± 5.05 years. The majority (82%) were in a relationship and 7% had a higher level of education. Those who were self-employed represented 50% while 7% were students. The percentage of children who were breastfed within an hour of birth was 61%. In multivariate analysis, factors such as religion ($p = 0.039$), gender ($p = 0.033$), APGAR score at 5 minutes ($p = 0.004$) and mode of delivery (<0.0001) were associated with early breastfeeding.

Keywords

Breastfeeding, Early Breastfeeding, Colostrum, Côte d'Ivoire

1. Introduction

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

hour and that mothers be helped to recognize when their babies are ready to breastfeed. Helping mothers initiate breastfeeding during this sensitive period when both mothers and newborns are on alert is Step 4 of the Baby-Friendly Hospital Initiative (BFHI) [1]. Newborns who are breastfed within the first hour of life are much more likely to survive. A delay of just a few hours after birth can have fatal consequences. Skin-to-skin contact and breastfeeding stimulate the mother's milk production, including colostrum, which is considered the newborn's "first vaccine" because it is rich in nutrients and antibodies [2]. According to WHO, 78 million newborns—or three out of five—are not breastfed within an hour of birth, increasing their risk of death and disease and reducing their likelihood of being breastfed later [3]. Breastfeeding rates within an hour of birth are highest in Eastern and Southern Africa (65%) and lowest in Eastern Asia and the Pacific (32%) [4]. In Western and Central Africa, only 46% of newborns are breastfed within the first hour of life [4]. The WHO initiative aims for Western and Central Africa to achieve the global target of 50% exclusive breastfeeding by 2025. Côte d'Ivoire, a West African country, has an early breastfeeding rate of 43% [5]. This rate remains low compared to the WHO target. Despite these benefits, less than 40% of newborns in resource-limited settings are breastfed within one hour of birth [6]. To contribute to increasing the rate of adherence to early breastfeeding, it seemed appropriate to determine the factors that could influence its practice. The results of this study will be used to guide awareness strategies for women.

2. Method

This was a cross-sectional study with a descriptive and analytical aim 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 delivery room of the Abobo Houphouët Boigny Regional Hospital Center. The sampling was based on a progressive constitutional model. The selection of women and their children was made in order of arrival at the facility throughout the survey period. The selected women came to the facility to give birth. Any woman who came to give birth and gave her oral consent was included in the study. The sample size was calculated from the following formula: $n = t^2 \times p \times q / d^2$. The non-early initiation of breastfeeding is the phenomenon to be studied. According to the Annual Report on the Health Situation of 2017 [5], the prevalence of initiation of breastfeeding within one hour of birth was 43%.

To find our prevalence, we do $100 - 43 = 57$ (57%). $p = 0.57$; $t = 1.96$ (for a significance level of 95%), $t^2 = (1.96)^2 = 3.84$; $q = 1 - p$ or $1 - 0.57 = 0.43$; d (precisions) = 10% or 0.1. $n = (1.96)^2 \times 0.57 \times (0.43 / 0.01) = 3.84 \times 0.69 \times 36$ or $n = 94$. The minimum sample consisted of 94 mother-child couples.

3. Data Collection and Analysis

The data were collected using a questionnaire by a previously trained doctor. 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. Participation in the study was free with the obtaining of informed consent from the parents based on a verbal agreement. The variables studied concerned the mothers: socio-professional characteristics (age, marital status, profession, ethnicity, place of residence, religion, lifestyle, stay in maternity), the newborns (reason for admission, maternity of origin, pregnancy monitoring, gestational age, measurements, trophicity, diagnosis during hospitalization, date of first breastfeeding, difficulties encountered by the mother in practicing breastfeeding, length of stay (days), evolution). The information collection technique was the direct face-to-face interview with each of the mothers surveyed. Data entry and analysis were done using Excel and XLSTAT software. Comparisons were made using the chi-square statistical test and Fisher's exact test. To look for an association between the dependent variable, which is early breastfeeding, and a presumed risk factor, the Odds ratio and the 95% confidence interval were calculated. When the expected p-value was less than 0.05, it was considered significant. Multivariate analysis was performed using the logistic regression (binomial) method. For this analysis, variables that were significant in univariate analysis were selected and statistical tests giving p values less than 0.05 were considered significant.

4. Results

4.1. Socio-Professional Characteristics

More than half of the women surveyed (83%) were under 35 years old. The average age was 26.56 years with a standard deviation of 5.05. The majority (82%) lived with a partner. They were self-employed in 50% of cases and were pupils or students in 7% of cases. Among these women, only 7% had a higher education level (Table 1).

Table 1. Socio-professional characteristics of mothers.

Mother's age	Number (n=320)	(%)
< 34 years	265	83
≥ 35 years	55	17
Marital status		
Married	41	13
Cohabitation	221	69
Single	58	18
Occupation of the respondent		
Liberal activity	160	50
Student	22	7
Private sector employee	10	3
Housewife	112	35
Public sector employee	9	3
Unemployed	7	2

Continued

Mothers education level			
Unscholarized	172	54	
Primary school	83	26	
Secondary school	42	13	
Advanced studies	23	7	
Fathers education level			
Unscholarized	276	81	
Primary school	20	6	
Secondary school	15	10	
Advanced studies	9	3	
Mode of delivery			
Vaginal route	229	72	
Caesarean section	91	28	

4.2. Prevalence of Early Breastfeeding

Among the three hundred and twenty (320) newborns included, 61% were breast-fed within one hour of birth (**Table 2**). The sex ratio was 1.05. Premature babies represented 3.7% of the newborns.

Table 2. Overall prevalence of early breastfeeding.

Feeding method	Number	%
Breastfeeding within 1 hour of birth	195	61
Breastfeeding within 24 hours of birth	121	38
Other feeding method	4	1.2

The proportion of women who practiced early breastfeeding was 61%.

4.3. Predictors of Early Initiation of Breastfeeding

Socio-demographic factors related to the mother

Table 3 presents the socio-demographic factors related to the mother.

Table 3. Factors related to the mother.

Parameters	Breastfeeding within 1 hour of life (n = 195)		Breastfeeding beyond 1st hour of life (n = 125)		p	Chi ²
	n	%	n	%		
Age group						
< 35 years	162	83.1	103	82.4	0.99	2.25
≥ 35 years	33	16.9	22	17.6		
Mother's education level						
Not scholarized	113	58	63	50.4	0.22	1.46
scholarized	82	42	62	49.6		
Religion						
Christian	70	36	60	48	0.04	4.13
Muslim	125	64	65	52		
Marital status						

Continued

Single	36	18.5	42	17.6	0.01	6.43
Cohabitation	139	71.3	83	65.6		

There was a statistically significant association between mother religion ($p = 0.04$), marital status of mothers ($p = 0.01$) and early breastfeeding initiation (**Table 4**).

Table 4. Individual determinants and early breastfeeding: factors related to the newborn.

Parametres	Breastfeeding within one hour of life (n = 195)		Breastfeeding beyond the 1st hour of life (n = 125)		p	Chi ²
	n	%	n	%		
Sex						
Masculine	91	46.7	73	58.4	0.04	4.19
Feminine	104	53.3	52	41.6		
Trophicity						
Hypotrophic	47	24.1	27	21.6	0.7	0.1
Eutrophic	138	70.8	87	44.6		
Apgar at 5 minutes of life						
<7	3	1.5	13	10.4	0.000	13
>=7	192	98.5	112	89.6		
Term						
Prematurity	8	4.1	4	3.2	0.79	0.06
Born at term	180	92.3	106	84.8		

There was a statistically significant association between early breastfeeding, Apgar at the 5th minute of life ($p = 0.000$) and sex ($p = 0.04$).

Table 5. Contextual determinants and early breastfeeding.

Parametres	Breastfeeding within one hour of life (n = 195)		Breastfeeding beyond the 1st hour of life (n = 125)		P	Chi ²
	n	%	n	%		
Mother's knowledge about breastfeeding						
Should the baby be breastfed immediately after birth?						
Yes	116	59.5	72	57.6	0.73	0.11
No	31	40.5	53	42.4		
Is breast milk sufficient for nutrition up to 6 months of life?						
Yes	48	38.4	34	27.2	0.6	0.26
No	147	61.6	91	72.8		
Perception of mothers						
Do you feel like there will be not enough milk?						
Yes	39	20	24	19.2	0.86	0.0
No	156	80	101	80.8		
Is your pregnancy planned?						
Yes	29	15	31	24.8	0.02	4.92
No	166	85	94	75.2		

Continued

Did you receive any encouragement from your husband about breastfeeding?						
Yes	160	82	104	83.2	0.79	2.1
No	35	18	21	16.8		
Did you receive any information about breastfeeding from parents?						
Yes	129	66.2	86	68.8	0.62	0.24
No	66	33.8	39	31.2		
Did you decide to breastfeed before pregnancy?						
Yes	137	70.3	98	78.4	0.1	2.59
No	58	29.7	27	21.6		
Numbers of prenatal consultations						
< 7	188	96.4	114	91.2	0.04	3.89
≥ 7	7	3.6	11	8.8		
Gestivity-Parity						
Multigestative	64	32.8	41	21	0.653	0.33
Nulliparous	74	38	36	28.8	0.077	
Delivery						
Vaginal delivery	174	89.2	55	44	<	0.000
Caesarean section	21	10.8	70	56	1	

The contextual determinants with a statistically significant relationship were planned pregnancy ($p = 0.02$) and delivery route ($p < 0.0001$) (**Table 5**).

In univariate analysis the following factors were statistically associated with early breastfeeding. These are religion ($p = 0.04$), marital status of mothers ($p = 0.01$), APGAR at the 5th minute of life ($p = 0.000$), sex ($p = 0.04$), pregnancy planning (0.02), number of prenatal consultations (0.04) and delivery mode ($p < 0.0001$).

Table 6 describes the results of the multivariate analysis.

Table 6. Multivariate analysis.

Variable	OR adjusted	Min CI to 95%	Max CI to 95%	Adjusted p value
Religion				
Christian	1.8	1.02	3.048	0.039
Muslim				
Marital status				
Single	0.9	0.5	1.9	0.9
Cohabitation				
Sex				
Masculine	1.8	1.059	3.147	0.033
Feminine				
Apgar				
< 7	8	0.66	3.5	0.004
≥ 7				
Is your pregnancy planned?				
Yes	1.88	-0.039	1.3	0.065
No				

Continued

	Number of prenatal consultations			
< 7	0.67	-1.7	0.9	0.5
≥ 7				
	Delivery			
Vaginal delivery	0.089	0.049	1.63	< 0.0001
Caesarean section				

In multivariate analysis, factors such as religion ($p = 0.039$), gender ($p = 0.033$), APGAR score at 5 minutes ($p = 0.004$) and mode of delivery (< 0.0001) were associated with early breastfeeding.

5. Discussion

This study has some limitations given the observational study design that does not allow to establish a causal relationship between the outcome and the independent variables. It aimed to determine the prevalence and factors associated with early initiation of breastfeeding. Early initiation of breastfeeding is important for both mother and child [7]-[9]. Early breastfeeding stimulates the release of prolactin, which contributes to milk production and oxytocin, responsible for milk ejection and stimulates uterine contraction after delivery [9] [10]. WHO guidelines recommend that the baby be placed “skin-to-skin” with the mother within the first half hour after delivery [1]. Ideally, the baby should be breastfed before any routine procedures (such as weighing, umbilical cord care and administration of medications). Early breastfeeding strengthens the emotional bond, increases the chances of breastfeeding success and generally prolongs the duration of breastfeeding. For early initiation of breastfeeding, guidelines indicate that the percentage of infants breastfed within one hour of birth is low, between 0 and 29%; average between 30% - 49%; good between 50% - 80%; and very good between 90% - 100% [10]. This study found that only 61% of babies were breastfed within one hour of birth. Therefore, the results of this study showed that the prevalence of early initiation of breastfeeding was good. Rates of early initiation of breastfeeding vary greatly across regions, from 35% in the Middle East and North Africa to 65% in East and Southern Africa [11]. The possible explanation for the observed difference in the prevalence of early initiation of breastfeeding between studies could be due to the methodological difference, variation in the sociodemographic characteristics of the infant and mother, as well as the economic and health situation. In West Africa it is 40% [11]. In this study, the frequency of early initiation of breastfeeding among pregnant women who gave birth vaginally was 89%. This method of delivery increased the possibility of early initiation of breastfeeding by 10.6 times. The same observation was made by Dun-Dery *et al* [12] [13]. Immediate skin-to-skin contact after birth facilitates early initiation of breastfeeding. Whatever the method of delivery, only the adoption of an appropriate policy and protocol by the center on breastfeeding can increase the frequency of early initiation of breastfeeding [14]. Multivariate analysis of factors associated with early

breastfeeding found in this study were religion, mode of delivery, gender and APGAR score. Regarding religion, early breastfeeding was more marked among women of Muslim faith. Recruiting lay leaders to promote breastfeeding within religious communities may be particularly helpful because these leaders have considerable influence [15]. Vaginal delivery followed by immediate skin-to-skin contact after birth facilitates early initiation of breastfeeding. In this study 61% of women had practiced early initiation of breastfeeding. The same observation was made by Dun-Dery *et al* [16] [17]. On the other hand, cesarean delivery had a negative effect on early initiation of breastfeeding [18] [19]. But, whatever the method of delivery, only the adoption of an appropriate policy and protocol by the health structure on breastfeeding can increase the frequency of early initiation of breastfeeding [16]. This protocol could include receiving breastfeeding advice, breastfeeding support and the provision of spaces dedicated to breastfeeding by employers [20]-[22]. This study found that girls tended to be breastfed early than boys. According to a study conducted in sub-Saharan Africa, there is an inequality in the initiation of early breastfeeding of male children who were breastfed beyond the first hour of life [23]. Making the same observation in these sub-Saharan African countries shows that this is a real problem that requires public health attention. There may be several reasons why mothers breastfeed their male infants later after delivery compared to their female infants. Studies have shown that infants breastfed after one hour of life have a higher risk of mortality [24]. To reduce this inequality, programs that educate and encourage early breastfeeding should be promoted to mothers, regardless of the child's sex.

6. Conclusion

The practice of early breastfeeding continues to be a problem in this secondary care structure, with only six out of ten newborns receiving breast milk within an hour of birth. Factors influencing its practice were religion, gender, APGAR and mode of delivery. The Ministry of Health, through the Directorate for the Coordination of the National Nutrition Program, should develop messages, communication strategies and coaching techniques adapted to young girls who are future mothers in the conduct of early breastfeeding, taking this factor into account. This would undoubtedly contribute to reducing infant morbidity and mortality in Côte d'Ivoire.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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