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Research Article

Breastfeeding Practices Among Infants Aged 0–6 Months in Suburban Dakar, Senegal

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Abstract

Introduction: Breastfeeding (BF) is recognized by the World Health Organization (WHO) as a key public health intervention to reduce infant morbidity and mortality, particularly in low-resource settings. In Senegal, although overall breastfeeding rates are high, optimal breastfeeding practices remain limited. This study aimed to determine the prevalence of breastfeeding, describe infant feeding practices, and identify factors associated with breastfeeding among infants aged 0 to 6 months in a peri-urban area of Dakar.

Methods: This was a descriptive and analytical cross-sectional study conducted from November 1, 2021, to February 28, 2022, at the Social Pediatrics Institute of Pikine, Dakar. Infants aged 0 to 6 months whose mothers gave informed consent were included. Data were collected using a semi-structured interview guide and analyzed using SPSS version 21. Bivariate analysis was performed using the chi-square test, and multivariate analysis was conducted through binary logistic regression.

Results: Among the 350 infants included, 99.7% were breastfed and 83.1% were exclusively breastfed at the time of the study. Early initiation of breastfeeding was observed in only 55.7% of cases. Multiparity ($p = 0.012$), maternal education level, and internet access were significantly associated with better breastfeeding practices. No significant associations were found between breastfeeding and maternal age, place of delivery, or mode of delivery.

Conclusion: Despite high overall breastfeeding rates, early initiation remains suboptimal. Targeted interventions aimed at promoting exclusive breastfeeding, strengthening obstetric practices, educating parents, and improving access to reliable information are essential to optimize breastfeeding practices in both urban and rural areas of Senegal.

Keywords: Exclusive Breastfeeding; Early Breastfeeding Initiation; Infant Feeding; Maternal Education; Sénégal

Abbreviations

BF: Breastfeeding; WHO: World Health Organization; EBF: Exclusive Breastfeeding; SPI: Social Pediatrics Institute; UCAD: Cheikh Anta Diop University; DHS: Demographic and Health Survey; BFHI: Baby-Friendly Hospital Initiative; IYCF: Infant and Young Child Feeding

Introduction

Breastfeeding (BF), defined as feeding a newborn or infant with their mother's milk, supports optimal child growth. Recommended by the World Health Organization (WHO), breastfeeding is a critical preventive health intervention benefiting both mother and child [1]. When exclusive, BF reduces the incidence and severity of gastrointestinal and respiratory infections in the first six months of life, lowers allergic risk, and helps prevent obesity and non-communicable diseases later in life [2]. BF is considered the gold standard for infant nutrition during early life. Promoting breastfeeding is a key goal of national nutrition programs worldwide, particularly in low-resource settings due to its health benefits [3]. In Senegal, although general BF rates are high, exclusive breastfeeding (EBF) rates remain low [4]. This study was conducted at the Social Pediatrics Institute (SPI) of Pikine in Guédiawaye, a suburban area

of Dakar, to assess BF and EBF rates, describe infant feeding practices, and identify factors influencing breastfeeding among infants aged 0 to 6 months.

Materials and Methods

Study setting

SPI is a university-affiliated institute under the joint supervision of the Ministry of Health and Social Action and Cheikh Anta Diop University (UCAD). It provides clinical care (consultations, vaccinations), nutritional support, training, research, and technical assistance to improve maternal and child health in underserved areas.

Study design and duration

This was a cross-sectional, descriptive, and analytical study conducted over four months, from November 1, 2021, to February 28, 2022.

Study population

Participants included infants aged 0 to 6 months attending the SPI vaccination unit, whose mothers consented to participate. Infants not accompanied by their mothers were excluded.

Sampling

Exhaustive sampling was applied throughout the study period.

Data collection and analysis

Data were collected using a semi-structured interview guide, pretested with five mothers. Entry was performed using Epi Info version 7 and analysis with SPSS version 21. Chi-square tests were used for bivariate analysis, with significance set at $p < 0.05$. Binary logistic regression was used for multivariate analysis, including variables with $p \leq 0.25$.

Results and Discussion

Results

A total of 350 infants were included. The mean age was 2.5 months (range 0.6–6 months), with a median of 2 months. Females represented 51.7% (n = 181) and males 48.3% (n = 169), for a sex ratio of 0.93. Mothers' mean age was 27.9 ± 5.5 years. The average number of children per mother was 2 ± 1.3, with over half having fewer than 3 children (61.7%). Housewives represented 40.9% (n = 143) of participants. Sixty percent of mothers (n = 211) were educated, and among them, 13.7% (n = 48) had higher education (Table I). Nearly all households had a television (98.9%) and 76.6% (n = 268) had internet access. Among fathers, 61.4% (n = 212) were educated, including 27.7% with secondary education (Table I). Term deliveries accounted for 94.3% (n = 330). Most deliveries occurred in health posts (41.7%) or health centers (Figure 1). Vaginal delivery occurred in 89.7% (n = 280) of cases. Eighty-six percent of infants were eutrophic (weight 2,500–4,000 g). The mean delay before the mother received her newborn was 5 ± 17.4 hours. Only 55.7% (n = 195) of infants were breastfed within the first hour after birth. Almost all infants (99.7%) were breastfed, and 83.1% (n = 291) were exclusively breastfed (Figure 2). EBF was significantly associated with having three or more children (p = 0.012), maternal education, and internet access (Table II).

Table I: Distribution of Parents by Level of Education.

Level of Education	Mothers		Fathers	
	n	(%)	n	(%)
No formal education	142	40.6%	136	38.9%
Primary	55	15.7%	43	12.3%
Secondary	105	30.0%	97	27.7%
Higher education	48	13.7%	74	21.1%
Total	350	100.0%	350	100.0%

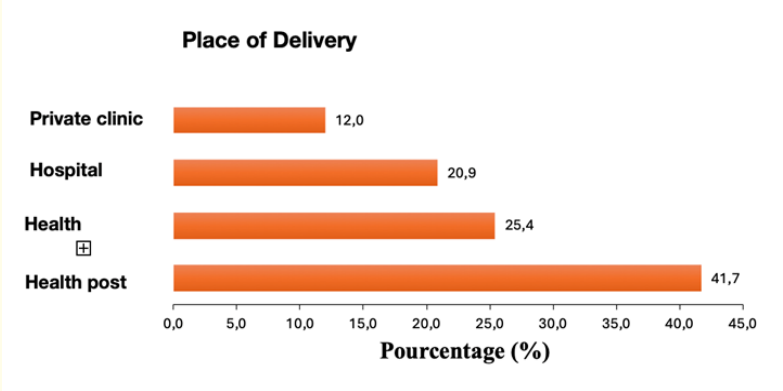

Figure 1: Distribution of mothers by place of delivery.

Table II: Factors Associated with Good Breastfeeding Practices.

Good Breastfeeding Practices					
Variable	**No n (%)**	**Yes n (%)**	**Total**	**p-value**	**Adjusted OR [95% CI]**
Number of children					
< 3 children	45 (20.8%)	171 (79.2%)	216		
≥ 3 children	14 (10.4%)	120 (89.6%)	134	0.012*	4.2 [1.1–4.2]
Mother's education					
No formal education	21 (14.8%)	121 (85.2%)	142		
Primary	8 (14.5%)	47 (85.5%)	55		
Secondary	15 (14.3%)	90 (85.7%)	105		
Higher education	15 (31.3%)	33 (68.8%)	48	0.041*	5.8 [1.3–5.8]
Father's education					
No formal education	28 (20.6%)	108 (79.4%)	136		
Primary	5 (11.6%)	38 (88.4%)	43	0.454	
Secondary	14 (14.4%)	83 (85.6%)	97		
Higher education	12 (16.2%)	62 (83.8%)	74		
Access to information sources					
TV – No	1 (25.0%)	3 (75.0%)	4	0.662	
TV – Yes	58 (16.8%)	288 (83.2%)	346		
Radio – No	9 (15.8%)	48 (84.2%)	57	0.814	
Radio – Yes	50 (17.1%)	243 (82.9%)	293		
Internet – No	7 (8.5%)	75 (91.5%)	82	0.021*	
Internet – Yes	52 (19.4%)	216 (80.6%)	268		
Place of delivery					
Clinic	9 (21.4%)	33 (78.6%)	42		
Health center	16 (18.0%)	73 (82.0%)	89	0.128	
Hospital	17 (23.3%)	56 (76.7%)	73		
Health post	17 (11.6%)	129 (88.4%)	146		
Mode of delivery					
Cesarean section	9 (25.0%)	27 (75.0%)	36		
Vaginal delivery	50 (15.9%)	264 (84.1%)	314	0.168	

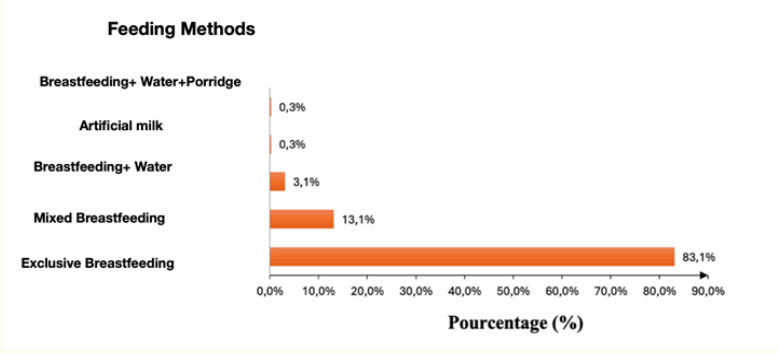

Figure 2: Distribution of children by feeding method.

Discussion

The overall breastfeeding rate observed in our study was 99.7%, with 83.1% of infants exclusively breastfed—reflecting good breastfeeding practices. This finding aligns with the 2019 Senegal Demographic and Health Survey (DHS), which reported that nearly all infants under six months were breastfed (99%), but only 41% received EBF [4]. Global disparities in BF practices are well documented. In China, Zhao., *et al*. reported a similar BF rate (98.3%) but a lower EBF rate among infants under 6 months (28.7%) [5]. Similarly, in Morocco, Sana reported an EBF rate of 26.5% and an overall BF rate of 70.5%, both lower than our findings [6]. The high BF rate in our setting may be due to the SPI's role as a mother-child reference center actively engaged in BF promotion.

No significant association was found between BF and maternal age. In Malaysia, Jalil., *et al*. reported a higher average maternal age (31.9 years) and a significant association with BF (p = 0.003) [7]. Noirhomme., *et al*. suggested that older mothers tend to breastfeed longer [8]. Similar findings were reported in Mauritania [9]. Older mothers may have more experience with infant feeding.

We observed a significant association between maternal education level and BF practice: higher education was paradoxically linked to poorer BF outcomes. Similar results were found in Ethiopia by Yeneabat., *et al*. where highly educated mothers were 2.34 times more likely to cease BF early compared to uneducated mothers [10]. In several low-income countries, increased education levels are associated with reduced BF rates [2]. This may reflect greater exposure to marketing of breastmilk substitutes, underlining the need for strict enforcement of the code regulating their commercialization.

In our sample, housewives had higher BF rates, while employed mothers more often used mixed feeding. However, this was not statistically significant (p = 0.061). In Malaysia, maternal occupation was linked to BF attitudes but not to BF practices [7]. Other studies (in Senegal, Mali, and Belgium) have shown maternal employment to negatively affect BF [8,11,12]. In contrast, Diawara in Mali found that housewives did not necessarily have better BF practices [13]. Internet access, which was common among participants, was significantly associated with BF (p = 0.021). Mothers using the internet as an information source had better BF practices, possibly due to improved awareness of BF benefits.

Charji showed that EBF rates improved with prenatal consultations [14]. Increasing prenatal contacts can enhance maternal counseling on infant feeding. Thus, prenatal consultations, vaccination, and other routine health contacts offer valuable opportunities to promote EBF.

We found no association between BF and place of delivery—consistent with Jalil., *et al*. [7]. In Côte d'Ivoire, Coulibaly., *et al*. reported lower EBF rates among mothers delivering in private facilities, likely due to higher socioeconomic status and easier access to formula [15]. We also found no link between mode of delivery and BF, unlike Jalil., *et al*. (p = 0.004) [7]. In Marrakech, obstetric experience also influenced BF [14]. Vaginal delivery was associated with higher BF rates than cesarean section, which has long been recognized as a BF barrier due to anesthesia effects and postoperative pain.

EBF was significantly higher among mothers with at least three children (p = 0.012). These mothers were more likely to exclusively breastfeed, while those with fewer children used mixed feeding. Similar results were seen in Malaysia (p < 0.001) [7].

The average delay in mother-infant reunion after birth was relatively long (5 ± 17.4 hours), contributing to suboptimal early initiation of BF (55.7%). In India, a study reported an even lower early initiation rate (43.8%) [16]. Allowing early skin-to-skin contact may promote timely BF initiation.

In Senegal, despite the implementation of the Baby-Friendly Hospital Initiative (BFHI), awareness remains insufficient. Sustainable policies should be implemented, adapted to local contexts, including maternal education programs, community-based health education, policy support, and economic measures. National guidelines on BF and infant and young child feeding (IYCF) should be widely disseminated.

A key limitation of this study is its single-center design in an urban area of Dakar, limiting generalizability. Future studies should include multiple sites, including rural areas.

Conclusion

Proper breastfeeding practices are essential for improving population health. In Senegal, while exclusive breastfeeding rates are globally satisfactory, early initiation remains insufficient. This highlights the need to strengthen obstetric practices that support immediate breastfeeding. Maternal education, paternal involvement, and access to reliable information are key levers. Targeted awareness campaigns and capacity-building interventions are essential to improve both the timing and quality of breastfeeding. Efforts should focus on strengthening community health interventions, promoting breastfeeding in both urban and rural settings, and providing ongoing training for healthcare professionals.

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