

# Early Cessation of Breastfeeding: A Neglected Nutritional Challenge among Infants

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**Abstract Background:** Breastfeeding (nursing) strike and early-weaning occur when infants often older than 3 months refuse to nurse for no apparent reason. This condition can be distressing to both the infant and mother. It is most times difficult for mothers to detect the cause of this phenomenon. This often puzzling state of infants feeding strike could lead to poor infant feeding practices thereby predisposing the infant to malnutrition and infections. **Methods:** This cross-sectional descriptive and analytical study enrolled 421 mothers who had nursed at least one child for 12 months or more. Appropriate statistical tools were used to determine prevalence of breastfeeding strike and maternal socio-demographics that are associated with refusal of breastfeeding in infants before 6 months of age. **Results:** Prevalence of breastfeeding strike in our study was 2.8%. Though statistical significance was not attained probably due to small sample size (n= 88), older mothers, those with more children, higher occupational grades and higher educational attainment were more likely to experience infant refusal of breastfeeding before 6 months of age. **Conclusion:** Despite the low prevalence reported in our study, breastfeeding strike is of great public health and family importance. There is need for more study to determine factors responsible for nursing strike in various cultural contexts in order to better educate mothers on how to prevent this present but covert phenomenon. **Keywords:** Breastfeeding (nursing) strike, infants, Enugu.

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## 1. Introduction

The importance of breast feeding to the infant, the mother, the family and the community at large has been well documented in literatures. [1,2] On the strength of these benefits, the World Health Organization (WHO) recommends mothers worldwide to exclusively breastfeed infants for the first 6months of life and thereafter give nutritious complementary foods while breastfeeding is continued for up to two years and beyond. [3] Even though several studies have shown various maternal and infant factors that mitigate against the full implementation of these breastfeeding recommendations, others studies have also shown positive attitude towards breastfeeding among most mothers despite infant challenges. [4] Among the infant challenges, [5,6] one that is of serious emotional concern for many mothers is the sudden refusal of breast milk of their infants without any apparent cause. This has been termed **breastfeeding or nursing strike**. This issue which has received little or no attention among health workers and researchers is becoming a frequent complaint by mothers attending postnatal clinics in our center. It

constitutes a worrisome development to the mother and the family and as well a nutritional challenge to the infant. If not promptly and properly addressed, breastfeeding strike especially when protracted may lead to poor nutritional practices that could predispose the infant to both nutritional and health issues. [7] This study therefore aimed to determine the prevalence of breastfeeding strike among mother-infant dyad attending the postnatal clinic of the Enugu State University Teaching Hospital. It also sought to assess factors associated with short-duration and/or longer lasting refusal of breastfeeding by infants before 6 months of age in the state. It is hoped that findings of this study will be utilized as a template in formulating a lasting solution to the problem of nursing strike among infants.

## 2. Methodology

### 2.1. Study Area

This study was conducted in the postnatal clinic of the Enugu State University Teaching Hospital, which is a public medical institution in Enugu State, south-east Nigeria. Enugu State is located on latitude 6° 27'N and

longitude 7° 30'E [5]. It is made up of 17 Local Government Areas (LGA) with its capital carved from Enugu North, Enugu South and Enugu East LGAs. The majority of the inhabitants are Igbo by tribe, and Christianity is the dominant religion. The minimum monthly income, similar to the national average was ₦18,000 (110 US\$). Literacy rate is 66%, fertility rate 4.5 births per woman and the male to female ratio is 1:1 [8].

## 2.2. Study Population

This cross-sectional descriptive and analytical study which was carried out over an eight months period involved apparently healthy infants (who have not had any form of illness warranting hospital visit in the previous 2 weeks)  $\leq 1$  year with their mother who attended the postnatal clinic from March to November 2015. The mother-infant dyads that fulfilled the study inclusion criteria were consecutively enrolled. The *inclusion criteria* includes: (i) Infants  $\leq 1$  year who after history and physical examination were found healthy and had not to have any illness in the previous 2 weeks. (ii) Infants  $\leq 1$  year whose mothers have given informed written consent. *Exclusion criteria*: (i) All infants delivered prematurely i.e. born before 37 completed weeks of pregnancy. (ii) Low birth weight infants i.e. infants whose birth weight were  $< 1.5$ kg. (iii) Infant  $\leq 1$  year who on history and physical examination were found to have organic or congenital abnormalities. (iv) Infant whose mothers have died and (v) Mother-infant dyads of multiple births i.e. twins, triplets etc. (vi) Infants  $\leq 1$  year of age whose mothers refused given consent.

## 2.3. Data Collection

Data collection was done medical students who were trained in the art of clerkship and maternal interviewing. Daily quality control of collected data was done by principal researchers and corrections effected where applicable. The data collection tool was a pre-tested

interviewer administered questionnaire which was completed by questioning the mothers. Information regarding maternal age, occupation, highest educational attainment and number of children was obtained and appropriately categorized. Maternal age was categorized as *<25 yrs, 26-30 yrs, 31-35yrs, > 35 yrs old*; Highest educational attainment was categorized as *Primary school or none* for those with  $\leq 6$ years of education, *Secondary* for mothers with  $> 6$  yrs but  $\leq 12$  yrs of education and *Post secondary* for those with  $> 12$  yrs education; Occupation was grouped into *Senior grade* for respondents working at senior level and/or skilled professions such as lecturers, doctors, directors, matrons, bankers etc, *Intermediate grade* for senior school teachers, nurses, civil servants, clerks etc, *Low grade* for primary school teachers, petty traders, low scale farmers, etc and *unemployed* house wives and students; Number of living children was categorized as *1-2, 3-4, > 5*. Data were also collected on experience of refusal of breastfeeding by infants before 6 months of age; the pattern of refusal and duration the refusal lasted. Mothers were also asked to recall if their infants at refusal of breastfeeding was on only breast milk or had other complementary feeds, on which breast was breastfeeding refused and what they felt was the likely cause of the sudden refusal of breastfeeding when it occurred.

## 2.4. Data Analysis

The Predictive Analytics Software (PASW) Statistic 19.0 statistical package was used for data analysis. The Pearson chi-square ( $\chi^2$ ) and Fischer's exact test where appropriate was used to study the association between maternal socio-demographic factors and refusal of breastfeeding in infants. Results were calculated, presented in percentages and displayed in Table 1 and Table 2. For all statistical tests performed, it was ensured that the assumptions for carrying out these specific tests were met. Statistical significance was set at P-value  $< 0.05$ .

Table 1. Socio-demographic and variable summary of Respondents

Socio-demographics	N (%)	Study variables	N (%)
<b>Maternal age (years)</b>	<b>N=421</b>	<b>Breastfeeding refusal before 6 months</b>	<b>N=421</b>
$\leq 25$	91 (21.6)	Yes	88 (20.9)
26-30	177(42.0)	No	333 (79.1)
31-35	111(26.4)		
$> 35$	42 (10.0)	<b>Pattern of Breastfeeding refusal</b>	<b>N= 84</b>
		Sudden	33 (39.3)
<b>Maternal educational attainment</b>	<b>N=421</b>	Gradual	51 (60.7)
Post-secondary	299 (71.0)	<b>Age at Breastfeeding refusal</b>	<b>N= 88</b>
Secondary	121 (25.2)	$< 1$ months	17 (19.3)
Primary or none	16 (3.8)	1-3 months	20 (22.7)
		4-6 months	51 (57.9)
<b>Occupation of mother</b>	<b>N=421</b>	<b>Duration of Breastfeeding refusal</b>	<b>N= 88</b>
Senior grade	103 (24.5)	$< 4$ weeks	37 (42.0)
Intermediate grade	113(26.8)	5-12 weeks	15 (17.0)
Low grade	27 (6.4)	Permanent	36 (41.0)
Unemployed	178 (42.3)	<b>Breast from which breastfeeding was refused</b>	<b>N=88</b>
<b>Number of living children</b>	<b>N=404</b>	Right	8 (9.0)
1-2	276 (68.3)	Left	7 (8.0)
3-4	104 (25.7)	Both	73 (83.0)
$\geq 5$	24 (5.9)		

## 2.5. Ethical Consideration

Ethical clearance was obtained from the Enugu State University Teaching Hospital Ethics Committee prior to

beginning this study. Informed consent was obtained from every mother in her own right and on behalf of her child before recruitment. Participation in the study was entirely voluntary and no financial inducement was provided.

Voluntary withdrawal from the study at any stage of interaction was guaranteed for all subjects without any adverse effect for the mother or the baby. All information was handled with strict confidentiality.

### 3. Results

Four hundred and twenty one (421) of the 450 respondents who met the inclusion criteria for this study gave consent and participated in this study. Table 1 shows

the characteristics of respondents enrolled in this study. Mothers experience and pattern of Breastfeeding strike and early self weaning are also summarized in Table 1. Forty-three (78.2%) of the 55 respondents were willing to restart breastfeeding in the infant with more of these been unemployed (44.9%,  $P=0.644$ ), post-secondary school educated (79.1%,  $P=0.718$ ), with less children i.e. 1-2 (66.7%,  $P=0.750$ ) and aged between 26-30 years (41.9%,  $P=0.951$ ).

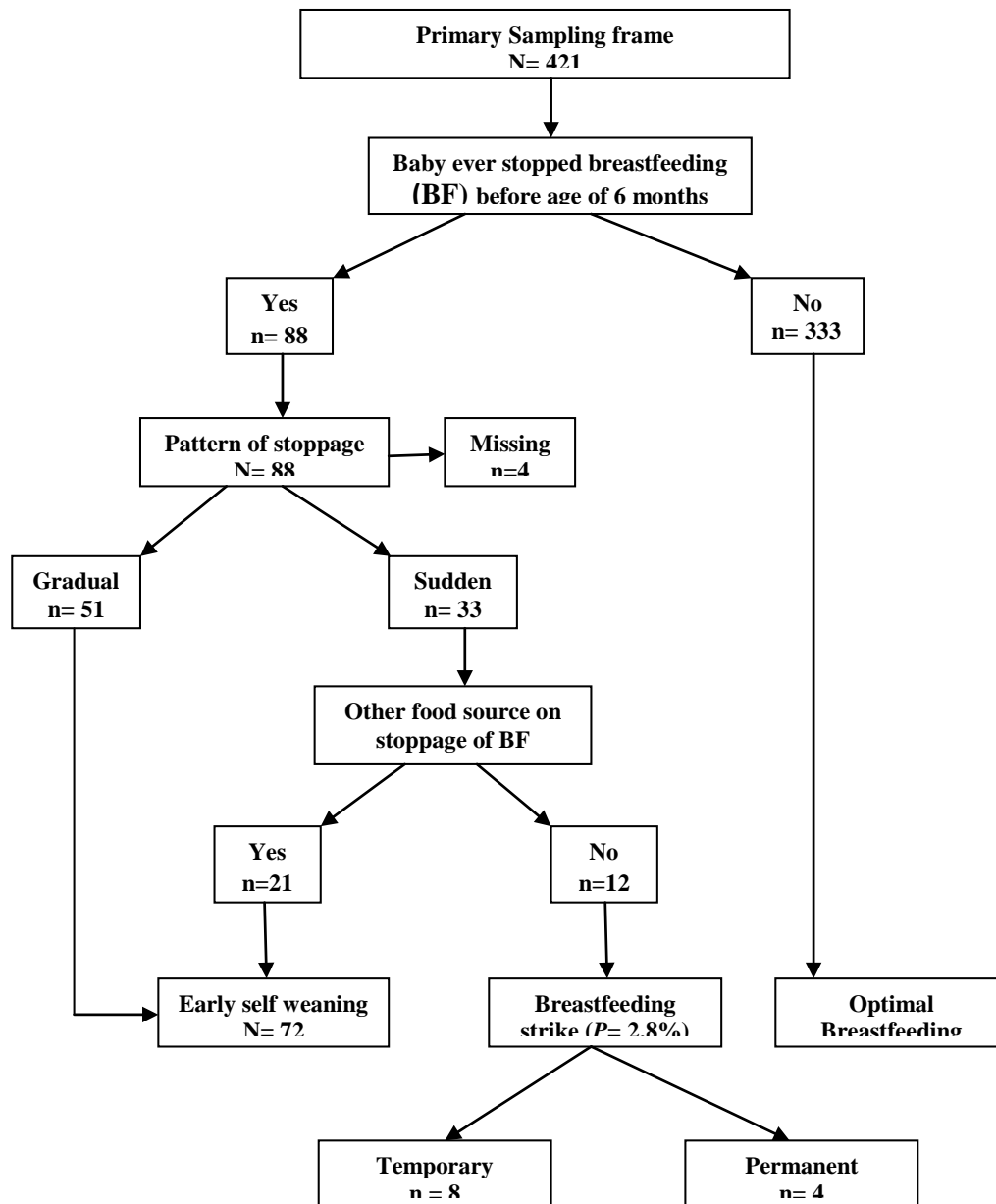


Figure 1. Breast feeding trends in Babies of respondents (© Osuorah DIC, Ekwochi U, Ndu UK, 2015)

#### 3.1. Prevalence of Breastfeeding Strike among Infants and Perceived Reasons for the Strike

Of the thirty-three infants that suddenly stopped breastfeeding before 6 months of age, 21 (63.6%) were on mixed feeding pattern (i.e. were either on predominant or complementary breastfeeding) when the child abruptly stopped breast feeding while 12 (36.4%) were mainly on

exclusive breastfeeding. This gives a breastfeeding strike prevalence of 12/421 (2.8%) among infants of respondents. About two-third (66.6%) of the breastfeeding strike were temporary while the rest (33.4%) were permanent (see Figure 1). The reasons for possible breastfeeding strike are displayed in Figure 2. The most common perceived reasons for breastfeeding strike were listed by mothers as: introduction of formula feed and/or non-milk based feed just prior to onset of breastfeeding strike, inadequate milk flow, illness in infant and teething.

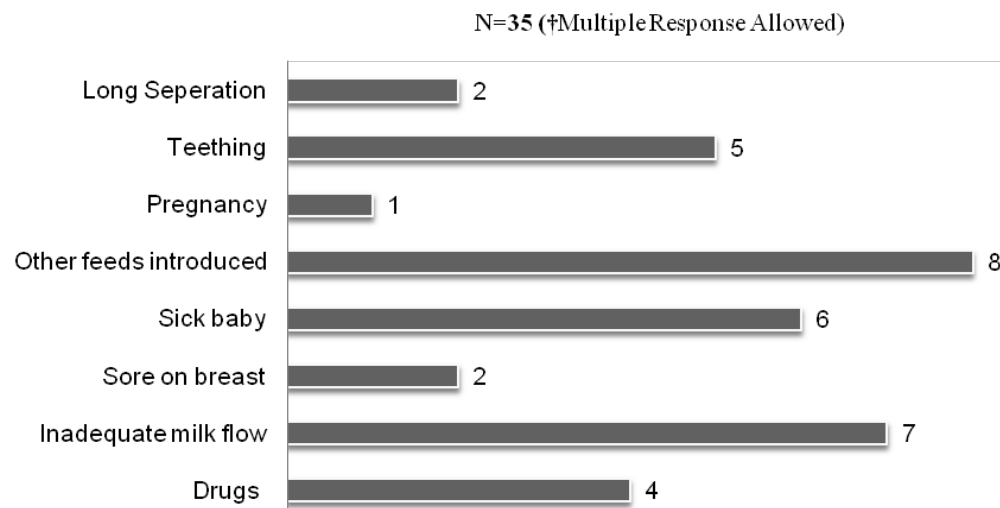


Figure 2. Perceived reasons for Breastfeeding strike of their babies among Respondents†

### 3.2. Maternal Socio-demographic Factors and Refusal of Nursing in Infants before 6 Months

Table 2 shows a chi-square analysis to determine the association between maternal variables considered in this study and experience of breastfeeding refusal before 6 months of age in infants. Mother in the older age bracket had more of their infants refuse breastfeeding compared to those in younger age category. Similarly mothers with

more number of children experienced refusal of breastfeeding in their infants than those with fewer children. Finally mothers with higher educational attainment and those with higher occupational grade experienced more breastfeeding refusals by their infants when compared to those of lower educational and occupational grade respectively. None of this however attained statistical significance ( $P < 0.05$ ).

Table 2. Maternal variables and refusal of breastfeeding before six months of age

Maternal variable	Breastfeeding refusal before 6 months			P
	Frequency	Yes	No	
<b>Age (years)</b>	<b>N= 421</b>	<b>N= 88</b>	<b>N= 333</b>	
< 25	91 (21.6)	16 (17.6)	75 (82.4)	0.743
26- 30	177 (42.0)	41 (23.2)	136 (76.8)	
31- 35	111 (26.4)	22 (19.8)	89 (80.2)	
> 35	42 (10.0)	9 (21.4)	33 (78.6)	
<b>Educational attainment</b>	<b>N= 421</b>	<b>N= 88</b>	<b>N= 333</b>	
Post-secondary	299 (71.0)	71 (23.7)	228 (76.3)	0.071
Secondary	106 (25.2)	14 (13.2)	92 (86.3)	
Primary or none	16 (3.8)	3 (18.8)	13 (81.2)	
<b>Occupation</b>	<b>N= 421</b>	<b>N= 88</b>	<b>N= 333</b>	
Senior grade	103 (24.5)	21 (20.4)	82 (76.9)	0.149
Intermediate grade	113 (26.8)	30 (26.5)	83 (73.5)	
Low grade	27 (6.4)	2 (7.4)	25 (92.6)	
Unemployed	178 (42.3)	35 (19.7)	143 (80.3)	
<b>Number of living children</b>	<b>N= 404</b>	<b>N= 86</b>	<b>N= 318</b>	
1-2	276 (68.3)	56 (20.3)	220 (97.7)	0.727
3-4	104 (25.7)	25 (24.0)	79 (76.0)	
≥ 5	24 (5.9)	5 (20.8)	19 (79.2)	

## 4. Discussion

Breastfeeding strike is a present but often overlooked infant feeding problem. This is probably because most mothers and healthcare workers mistake nursing strike for self weaning (which is a more gradual and longer lasting process), [9] which is supported by the fact that no academic literature was identified on this subject. Though the prevalence of breastfeeding strike in our study was 2.8%, it was noted that 21% of infants weaned early from breast milk for various reasons before the age of 6 months.

Gray-Donald et al [10] in a controlled clinical trial on the effect of formula supplementation on the duration of breast-feeding identified supplementation as a marker of shorter breast feeding duration. This early termination of breast feeding not only predisposes an infant to poor nutritional practices and infection but also increase the likelihood of several maternal diseases. Data from several large cohort studies reported protective associations between duration of breast-feeding and incidence of type 2 diabetes, [11] and myocardial infarction, [12] and also reduced prevalence of the metabolic syndrome, [13] hypertension and hyperlipidemia. [14] It is therefore vitally

expedient that breastfeeding and its sustenance for as long as possible receives all the attention from mothers, clinicians, researchers and other stakeholders to ensure its protection and promotion.

Several perceived reasons were given by the respondents for the occurrence of breast refusal in our study. The most common were the introduction of other feeds, inadequate milk flow and infant illnesses. In a similar study in Tehran<sup>15</sup> where 3.6%, 8.3% and 13.8% infants stopped breastfeeding at less than 1, 1-2 and 3-5 months respectively, milk insufficiency (39%), pregnancy (17%) and maternal illness (10.7%) accounted for the most common reasons to stop breastfeeding. Unlike our study, introduction of other feeds (6.9%), and child illnesses (3.8%) were less frequent reasons given by respondents in that study. The difference in trend seen between both studies may be related to the subtle difference in study outcome. While our study focused on causes of breastfeeding strike in the first 6 months of life, the Tehran study looked more broadly into early weaning in infants up to 2 years of age. Gray-Donald et al in an experimental study downplayed the effect of introduction of other feedings on duration of nursing. In their study, after adjusting for maternal and infants confounding factors like health problems and maternal commitment to breastfeeding, the association between duration of breastfeeding and formula supplementation was rendered insignificant. [10] The findings of this study underscore the importance of psychosocial wellbeing of mothers in sustenance of breastfeeding.

Finally, no maternal socio-demographic variable considered in this study was significantly related to early weaning in infants. This may be due to the sample size of mothers whose children weaned from breastfeeding before 6 months in our sample population (n=88). A similar study that looked into early weaning with a larger sample demonstrated that high family income, use of drugs (oral contraceptive pills) and high mother's education adversely influenced duration of breastfeeding. [15] For more reliable results with good external validity, more large scale studies in socially and culturally diverse settings within and outside Nigeria may be needed to correctly determine maternal factors that determine early weaning among infants.

## 5. Conclusion

Breastfeeding strike and early weaning is a common but neglected nutritional challenge among infants that can work against the World Health Organization global goal of increasing exclusive breastfeeding to at least 50% by

2025. [16] More researches are needed to probe into causes of early cessation of breastfeeding in order to develop strategies to prevent this nutritional challenge in infants, especially in countries where a lack of breastfeeding contributes to infant morbidity and mortality.

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