

## The practice and determinants of prelacteal feeding among mothers patronizing a private hospital

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### Abstract

**Background:** A prelacteal feed is any food except mother's breast milk fed to a newborn infant prior to the establishment of lactation. Prelacteal feeding is a major barrier to exclusive breastfeeding. Little is known about the factors associated with prelacteal feeding of among mothers attending private health facilities.

**Objective:** To describe prelacteal feeding practices and factors influencing these practices among women attending a private health facility in Lagos, Nigeria.

**Methods:** One hundred and two mothers were surveyed using a questionnaire shortly after delivery.

**Results:** The overall prevalence rate of prelacteal feeding was 33.3%. Maternal age 21-30 years, no previous birth and high socioeconomic class were factors associated with high rate of prelacteal feeding. The most frequent reason for prelacteal feeding was perceived initial delay in breast milk flow presumed not enough for the infant.

**Conclusion:** The problem of prelacteal feeding is common among women attending a private health facility in Lagos.

**Key words:** Colostrum, Breastfeeding, Pre-lacteal feeding, Private Health Facility

### Introduction

Breast feeding is the natural method of meeting the nutritional demands of infants.<sup>[1, 2]</sup> The Baby Friendly Hospital Initiative of the WHO/UNICEF is based on the recognition that breast feeding activities in the hospital are important to the success of subsequent breastfeeding practices.<sup>[3]</sup> In spite of the recommendation of the Baby Friendly Hospital Initiative (BFHI) policy and practices by the government representatives in the health sector, many hospitals in the country are yet to adopt and implement the prescribed Ten Steps to Successful Breastfeeding.<sup>[3]</sup>

Prelacteal feeding is the giving of food or liquid to the newborn before breastfeeding is established or before breast milk "comes in," usually on the first day of life.<sup>[2, 4]</sup> Prelacteal feeding is a major barrier to achieving exclusive breast feeding,<sup>[2, 4, 5]</sup> as this practice has been shown to delay the initiation of breastfeeding and adversely interfere with exclusive breast feeding during the first six months of life.<sup>[2]</sup> Through reduction in the frequency of direct suckling at the breast, prelacteal feeding can lead to delayed lactation and reduced breast milk supply, both of which encourage mothers to continue feeding prelacteals.<sup>[2]</sup>

Prelacteal feeds include formula and animal milk, sugar, honey and herbs. Some of the known reasons for giving prelacteal feeds fall into three main classes: - a) perceived breast milk insufficiency, b) medical reasons including prevention of dehydration, hypoglycaemia, c) non-medical reasons (such as cleansing and preparing the baby's gastrointestinal tract for digestion, quenching of thirst, flushing the bladder and allowing the mother some rest).<sup>[1]</sup>

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Prelacteal feeding has been linked with negative neonatal health outcomes, including increased risk of illness and possibly mortality.<sup>[2, 5, 6]</sup> Colostrum, which is the milk produced in the first three days following birth, contains high amount of immunological agents.<sup>[2]</sup> Through interference with breastfeeding during this period, prelacteal feeding diminishes the immunological benefits a newborn infant receives, thus increasing susceptibility to infections.<sup>[2, 5, 6]</sup> In addition, prelacteal feeding can be a direct cause of illness by exposing infants to contaminated feeds, utensils, water, or hands.<sup>[2, 5, 6]</sup> Prelacteal feeding may also affect neonatal health by disrupting the priming of the gastrointestinal tract.<sup>[2]</sup>

It has been previously reported that factors such as higher level of maternal education, first time mothers, higher socioeconomic class, and maternal employment outside of the household were positively associated with the use of milk-based prelacteal feeds.<sup>[1]</sup> These factors may not be the same in every environment, hence this study aimed at assessing prelacteal feeding patterns among women utilizing private health services in Lagos, Nigeria. Although data on prelacteal feeding patterns among mothers are available, to the best of the authors' knowledge, no study had focused on mothers attending private hospitals. The objective of this study was to describe prelacteal feeding practices and identify potential factors associated with the practice of prelacteal feeding among women attending a private health facility in Lagos, Nigeria. The findings generated by this study may guide policies and actions concerned with increasing optimal infant feeding practices as a means of improving the nutrition and health of children.

## Methods

This was a descriptive cross-sectional study carried out over a five-month period (March to July 2013) among women who brought their children to the immunization clinic at Isalu Hospitals Limited for vaccination. Isalu Hospitals Limited is a private health facility located at Ogba, Ikeja and it caters for both high and low income earners. Ogba is about five kilometres west of Ikeja, the capital city of Lagos State. It is a densely populated area with a mixture of housing for high and low income earners.

Ethical clearance was not required for this study, but permission to conduct the survey was given by

the respective participants and the Medical Director of Isalu Hospital Limited. Written informed consent was obtained from the respondents after explaining the purpose of the study to them with assurance of voluntary participation.

Consecutive mothers who brought their children for vaccination were recruited. The sample size calculation was based on the estimated prevalence of prelacteal feeding of 57.8% reported by El-Gilany *et al*<sup>[6]</sup> among Egyptian singleton newborns and their mothers. The power of the sample size was set at 90% at the 5% level of difference between the two groups of 1.96 standard deviation in a two-tailed test. The studied sample size was one hundred and two mothers whose children were aged less than or equal to twelve months on the date of interview. Babies who were low birth weight or preterm or were admitted to the NICU after birth were excluded from study. Therefore, all the eligible and consenting mothers were conveniently recruited.

The mothers were interviewed with a questionnaire which included general information, socio-demographic status, number of births, and introduction of prelacteal feeds. Social classification was done using the scheme proposed by Oyedele<sup>[7]</sup> and the respondents were grouped into five classes (I to V). Classes I and II were regrouped as upper social stratum while class III and classes IV and V were grouped together as middle and lower social strata, respectively.

Data were analyzed using the Statistical Package for Social Science (SPSS) 18.0 version. Frequency and percentage were calculated for categorical variables and comparison of the categorical variables was done using Pearson's Chi-squared test as indicated. P values < 0.05 were considered significant.

## Results

### *Characteristics of study subjects*

The characteristics of the 102 mothers and their infants are shown in Table I. Majority of the mothers were older than 30 years of age, had tertiary education, and were working mothers belonging to the upper socioeconomic strata. Male and female children were nearly equally represented in the cohort. Of the total births, 91.1% took place at a privately-owned facility. Similar number of mothers also received antenatal care at a privately-owned health facility. The proportion of delivery by caesarean section was 33.3%.

### Prevalence of prelacteal feeding

Eighty-eight mothers (86.3%) received prenatal feeding advices while 66 (64.7%) received postnatal feeding advices. Thirty-four of the 102 nursing mothers gave prelacteal feeds to their babies, giving an overall prevalence rate of prelacteal feeding of 33.3%. These mothers claimed they were advised by the health workers at the places of delivery to introduce prelacteal feeds. The rates of prelacteal feeding according to infant and parental factors are shown in Table II.

Table I: Socio-demographic characteristics of mothers and children

Charateristics	Frequency	Percentage
<b>Gender of infant</b>		
Male	53	52
Female	49	48
<b>Mother's Parity</b>		
1	40	39.2
>1	57	55.9
No response	5	4.9
<b>Maternal Age (Years)</b>		
>30	62	60.8
21-30	37	36.3
No response	3	2.9
<b>Mother's educational status</b>		
Secondary	3	2.9
Tertiary	97	95.1
No response	2	2.0
<b>Father's educational status</b>		
Secondary	1	1.0
Tertiary	98	96.1
No response	3	2.9
<b>Socioeconomic status</b>		
Upper	90	88.2
Others	11	10.8
No response	1	1.0

The proportions of male and female infants who had prelacteal feeds were similar. A higher percentage of infants whose mothers had no previous birth was given prelacteal feeds. In addition, the prevalence rate of prelacteal feeding was higher among mothers between age 21-30 years, secondary education and those without prenatal and postnatal feeding advice. Infants from

upper socioeconomic class had higher rates of prelacteal feeding. The infant of the only father with secondary level of education also received prelacteal feeding.

The reasons for prelacteal feeding are shown in Table III. The most frequent reason for prelacteal feeding was perceived inadequate flow of breast milki. None of the mothers gave multiple reasons for the use of prelacteal feeds.

### Discussion

The first step in the Baby Friendly Hospital Initiative is to put the infant to the breast as soon as practicable after delivery, preferably within 30minutes of birth.<sup>[8]</sup> The prevalence of pre-lacteal feeding amongst the respondents was 33.3%. This value is higher compared to rates previously reported among mothers attending the Well-Baby Clinic of a public tertiary hospital in Benin, Nigeria.<sup>[1]</sup> The reported prevalence value from the current study was lower than 77% and 45% reported in rural Bangladesh<sup>[9]</sup> and India<sup>[10]</sup> respectively. A possible explanation for the large disparity between cited studies and the present study could be the differences in cultural practices of these different populations.

In the present study, the male to female ratio among infants that had prelacteal feeds was similar. This suggested that gender is not considered a reason for giving prelacteal feeds by mothers. This was contrary to the observation of Tushar *et al*<sup>[11]</sup> who reported that about double the number of females as compared to males received prelacteal feeds. The reasons deduced by Tushar *et al*<sup>[11]</sup> for this anecdotal finding was that cultural belief may be responsible for the eagerness of the mothers to give breast milk to boys than girls.

The finding in the present study revealed that three-quarter of the mothers with previous births did not practice prelacteal feeding. Previous births might just mean more children and therefore, large family size and more newborn care experiences. The corollary is that mothers with no previous birth are likely to have less newborn care experiences. This further emphasizes the fact that first time mothering favour the practice of prelacteal feeding because of lack of maternal experience in newborn care.

Table II: Prelacteal feeding rates according to infant and parental factors

Characteristics	Prelacteal feeding		p-value
	Yes	No	
Gender of infant			0.889
Male	18 (34.0)	35 (66.0)	
Female	16 (32.7)	33 (67.3)	
Mother's parity			0.05
1	19 (47.5)	21 (52.5)	
>1	14 (24.6)	43 (75.4)	
No response	1 (20.0)	4 (80.0)	
Maternal age (years)			0.003
>30	13 (21.0)	49 (79.0)	
21 - 30	19 (51.4)	18 (48.6)	
No response	2 (66.7)	1 (33.3)	
Mother's education status			0.286
Secondary	2 (66.7)	1 (33.3)	
Tertiary	32 (33.0)	65 (67.0)	
No response	0 (0.0)	2 (100.0)	
Father's education status			0.173
Secondary	1 (100)	0 (0.0)	
Tertiary	33 (33.7)	65 (66.3)	
No response	0 (0.0)	3 (100.0)	
Socioeconomic status			0.399
Upper strata	32 (35.6)	58 (64.4)	
Others	2 (18.2)	9 (81.8)	
No response	0 (0.0)	1 (100.0)	
Received prenatal feeding advice			0.572
Yes	26 (29.6)	62 (70.4)	
No	8 (61.5)	5 (38.5)	
No response	0 (0.0)	1 (100.0)	
Received postnatal feeding advice			0.005
Yes	15 (22.7)	51 (77.3)	
No	15 (57.7)	11 (42.3)	
No response	4 (40.0)	6 (60.0)	

Figures in parentheses are percentages of the number in the group

Table III Reasons for giving prelacteal feeds to their babies

Characteristic	N	(%)
Abdominal pains following caesarean section	3	8.8
Babies could not latch on the nipple very well	6	17.7
Not lactating enough	22	64.7
Sore nipples	3	8.8

The present study showed that the tendency to practice prelacteal feeding declined as maternal age increased. The highest proportion of mothers who practiced prelacteal feeding was in the age group of 21 - 30 years. A possible explanation for this trend could be that as maternal age rises, nursing mothers perfect the skills of infant care and acquire the much needed patience to nurse their young in the proper way. It could also be asserted that this group of relatively older mothers tends to adhere better to health instructions and teachings received from health education.

The study also revealed that the practice of prelacteal feeding is surprisingly higher among infants from the upper socioeconomic class. This finding is consistent with that of Roy *et al*<sup>[12]</sup> among recently delivered Indian women. The observed high rate of prelacteal feeding practice among upper socioeconomic class may in turn depend on wide availability of infant formula over the counter as well as in the general market. With such alternative at hand, the initial delay in milk production might be misconstrued to mean insufficiency of breast milk and this might have influenced their decision. On the contrary Dawal *et al*<sup>[13]</sup> reported that prelacteal feeding practices were more common among the lower socioeconomic class than the upper socioeconomic class. The reasons for these observed difference among studies is not clear.

From the present study seventy percent of mothers who received prenatal feeding advice from healthcare workers at the places of antenatal care did not use prelacteal feeds. A similar finding was observed by Tushar *et al*<sup>[11]</sup> among Indian infants. This finding emphasizes the importance of health education in the reduction of the practice of prelacteal feeding. Existing literature has suggested that term, appropriate for gestational age babies do not require prelacteal feeds to maintain their blood sugar level within normal limit.<sup>[11]</sup>

The most frequent reason for prelacteal feeding was perceived insufficiency of milk production. A similar reason had earlier been reported as the most frequent for the practice of prelacteal feeding in Nigeria<sup>[14]</sup> and elsewhere.<sup>[15]</sup> El-Gilany and Abdel-Hady<sup>[6]</sup> in a study of Egyptian singleton newborn infants and their mothers, observed that, the advice of health care providers was cited as the reason by two-fifth of mothers. All the thirty-four mothers who introduced prelacteal feeds in the

present study were so advised by the healthcare givers. This highlights the importance of medical and paramedical education and the continuation of in-service training in breastfeeding practice. This finding was corroborated by a previous Nigerian study which reported that the majority of healthcare givers prescribed prelacteal feeds routinely and in special circumstances, respectively.<sup>[15]</sup> The reasons given by these health workers for such prescriptions were perceived milk insufficiency, prevention of dehydration, hypoglycemia, and neonatal jaundice, and well as cleansing the baby's gut and the need to create time for the mother to rest.<sup>[15]</sup>

### Conclusion

This study showed that the prevalence of prelacteal feeding was high among mothers attending a private health facility in Nigeria. No previous birth, maternal age 21-30 years, and upper socioeconomic class were characterized by high rate of prelacteal feeding. For better impact on the prevention of prelacteal feeding, appropriate education of mothers during antenatal care is desired for successful exclusive breast feeding practices

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### Authors' Contributions

The study was conceived by all the authors. ASO and NOF collected the data. ASO and NOF analyzed the data. ASO wrote the initial draft of the manuscript and all the authors reviewed and approved the final manuscript for submission.

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