

Prelacteal feeds: Prevalence and associated factors as seen at a University Teaching Hospital, Southeast Nigeria

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Received - 24 January 2019

Initial Review - 10 February 2019

Accepted - 21 February 2019

ABSTRACT

Background: Administration of prelacteal feeds (PLFs) is a common practice among mothers which has no scientific basis. It is rather fraught with disadvantages, particularly to the newborn. It constitutes a major impediment to the commencement of exclusive breastfeeding which is the foundation for proper infant nutrition. **Aim:** The objective of this study was to determine the prevalence, types, and reasons for administration of PLF. **Materials and Methods:** A cross-sectional descriptive study was conducted in the Well Baby Clinic of a Abia State University Teaching Hospital, Aba, Nigeria. Data on the sociodemographic characteristics, utilization of health services, mode of delivery, and administration of PLF were obtained from mothers. **Results:** A total of 444 mothers were enrolled over the study period, of which 43.2% administered PLF. Cesarean section delivery and women aged 29–39 years were significantly associated with PLF administration. Glucose water constituted the predominant PLF administered. Health workers were the most influential factor in the administration of PLF. Delayed lactation constituted the major reason for the administration of PLF. **Conclusion:** Sustained education of the populace and the training and retraining of health workers, particularly obstetric staff, could help to curb PLF administration.

Key words: Mothers, Prelacteal feeds, Prevalence, Well Baby Clinic

Optimal breastfeeding which is one of the most effective ways of preventing malnutrition starts with exclusive breastfeeding [1,2]. Colostrum, the first portion of milk issuing from breast after delivery, is highly nutritious and immunogenic [3,4]. Exclusive breastfeeding should commence within 30 min of delivery, or immediately, a mother wakes up from anesthesia in cases of cesarean section (CS). However, some mothers commence prelacteal feeds (PLFs) when breastfeeding is delayed for one reason or the other. PLFs are, therefore, foods or liquids fed to a newborn before the establishment of breastfeeding which are very commonly administered in different parts of the world [5-7]. The prevalence and reasons for the administration of PLF vary from place to place and include tradition, mother's or mother-in-law's advice, lack/delay in milk production, keeping the mouth and throat of baby moist, lack of breastfeeding knowledge, socioeconomic status, and advice from health-care providers [7-10] among others.

Administration of PLF has been noted to have no scientific basis and is indeed fraught with disadvantages, particularly to the newborn. It constitutes a major impediment to the establishment of breastfeeding, causing reduced milk supply, and even lactation failure [11]. By interfering with breastfeeding in the early days after delivery, PLF could deprive the neonate of colostrum with its immense nutrient and immunological benefits. This may predispose the newborn to infection and death [3]. PLF also

hinders early maternal-child bonding with adverse impact on psychosocial and cognitive development of the newborn [12].

PLF is specifically prohibited in the 10 steps to successful breastfeeding recommended by the WHO/UNICEF, unless it is medically indicated. Awareness of the magnitude of PLF practices and circumstances associated with them is required to determine measures to curb this impediment. To the best of the authors' knowledge, no previous studies have been carried out to determine the prevalence and associated factors of PLF in Abia State, Nigeria. The objective of this study, therefore, was to determine the prevalence, type of, and reasons for PLF and to document major persons influencing mothers' decision for PLF.

MATERIALS AND METHODS

This was a cross-sectional descriptive study conducted in the Well Baby Clinic (WBC) of a Abia State University Teaching Hospital, Aba, Nigeria from March 1 to August 30, 2017. Ethical clearance was obtained from the research and ethics committee. This academic hospital is a baby-friendly hospital that abides by all the steps to successful breastfeeding. The hospital policy reserves PLF for the rare situations where breastfeeding is contraindicated for the baby, for example, maternal death, severe maternal illness such as tuberculosis, venereal disease, or cancer, and infants, whose mothers are taking drugs that could be harmful to the

infants, medical conditions in the baby such as phenylketonuria or galactosemia.

A study population comprised mothers who brought their infants for immunization. The immunization exercise is organized every Wednesday of the week, and an average of 20 mothers with their babies were seen on each occasion by four registered nurses, two matrons, and a pediatric resident doctor on community medicine posting. Health education was usually administered by the nurses before commencement of immunization, while the doctor reviews the babies with growth or health challenges.

The inclusion criteria for this study were the mother in the age group of 16–45 years having infants aged ≤1 year and provided their consent for the study. Mothers who had contraindication to breastfeeding and non-biological mothers of the babies (e.g., surrogate mothers, stepmothers, and grandmothers) were excluded from the study. Subjects were recruited until the sample size of 460 was attained. This was calculated using the Cochran’s sample size formula [13], with a prevalence of 11.7% from a previous study [6] and allowing for a 5% discrepancy to the true prevalence, and within 95% confidence interval.

The study was conducted by administering structured questionnaires (designed by the authors) to the mothers present at the WBC. A pilot testing of the data collection using the questionnaires was conducted on 10 respondents few weeks before the actual study. Thereafter, it was revised to ensure clarity and ready comprehension of the questions by the respondents before commencing with the index study. Information retrieved from the mothers were their sociodemographic characteristics, utilization of health-care services during pregnancy and delivery of the index baby, administration of PLF, nature of PLF, reasons for it, and persons who influenced their administration of PLF.

The sociodemographic characteristics included age, religion, job status, and level of education. Levels of education were defined as follows [14]: Primary: Completion of the formal primary school classes with a First School Leaving Certificate, secondary: Completion of the Nigerian Secondary School education with a West African School Certificate or the National Examination Council Certificate, and tertiary: Completion of a university, college of education, or a polytechnic.

Data were analyzed using the SPSS version 20. Frequency tables were generated for all major variables of interest, while Chi-square test was used to compare variables. A confidence interval of 95% was used, and for all analyses, $p < 0.05$ was taken as statistically significant.

RESULTS

A total of 460 respondents were enrolled into the study, of which 16 had inadequate data and were discarded. 444 were used for subsequent analysis. 192 of the respondents administered PLF to their babies giving a 43.2% prevalence rate for PLF. The respondents were predominantly Christians 432 (97.3%) while Muslims were 12 (2.7%). The age range of the mothers was 20–44 years, with a mean age of 30.24 years. Majority (54.1%) of the mothers were

aged 30–39 years while 38.3% were 20–29 years. Overwhelming majority (96.9%) had secondary and primary educations. >70% of the respondents had income earning jobs (Table 1).

Majority of the mothers that administered PLF were aged <39 years. There is a statistically significant association between age and administration of PLF ($p = 0.007$). Level of education and income earning job status were not significantly associated with PLF statistically (Table 2).

Table 3 shows that there is a statistically significant association between mode of delivery and practice of PLF ($p = 0.005$). Of the 128 respondents that delivered in the hospital, 100 (78.1%) of them delivered at private clinics, while only 28 (21.9%) had their babies at the teaching hospital.

Of the 192 mothers that gave PLF to their babies, 66 (34.4%) were not influenced by anybody, while 96 (50.0%) and 30 (15.6%) were influenced by health workers and baby’s grandmothers, respectively. Concerning types of PLF, glucose water was the

Table 1: Sociodemographic characteristics of the respondents

Variables	Number of respondents (%)
Age (years)	
20–29	170 (38.3)
30–39	240 (54.1)
40–49	34 (7.6)
Total	444 (100.0)
Levels of education	
Primary	14 (3.2)
Secondary	248 (55.8)
Tertiary	182 (41.0)
Total	444 (100.0)
Income earning job	
Yes	322 (72.5)
No	122 (27.5)
Total	444 (100.0)

Table 2: Sociodemographic characteristics of the 444 respondents in relation to administration of PLF

Characteristics	Administration of PLF			p-value
	Yes	No	Total	
Age (years)				
20–29	84 (49.4)	86 (50.6)	170 (100.0)	0.007
30–39	84 (35.0)	156 (65.0)	240 (100.0)	0.007
40–49	24 (70.6)	10 (29.4)	34 (100.0)	0.007
Total	192 (43.2)	252 (56.8)	444 (100.0)	
Levels of education				
Primary	4 (28.6)	10 (71.4)	14 (100.0)	0.276
Secondary	100 (40.3)	148 (59.7)	248 (100.0)	0.276
Tertiary	92 (50.5)	90 (49.5)	182 (100.0)	0.276
Total	196 (44.1)	248 (55.9)	444 (100.0)	
Income earning job				
Yes	138 (42.9)	184 (57.1)	322 (100.0)	0.850
No	54 (44.3)	68 (55.7)	122 (100.0)	0.850
Total	192 (43.2)	252 (56.8)	444 (100.0)	

PLF: Prelacteal feeds

Table 3: PLF practice and maternal utilization of health-care services by the 444 respondents

Variable	Administration of PLF			p-value
	Yes (%)	No (%)	Total (%)	
Place of antenatal care				
Hospital	138 (42.1)	190 (57.9)	328 (100.0)	0.535
Maternity	20 (45.5)	24 (54.5)	44 (100.0)	0.535
Health center	34 (48.6)	36 (51.4)	70 (100.0)	0.535
Church	0 (0)	2 (100)	2 (100.0)	0.535
Total	192 (43.2)	252 (56.8)	444 (100.0)	
Place of delivery				
Hospital	128 (41.0)	184 (59.0)	312 (100.0)	0.422
Maternity	26 (46.4)	30 (53.6)	56 (100.0)	0.422
Health center	34 (53.1)	30 (46.9)	64 (100.0)	0.422
Church	0 (0.0)	4 (100.0)	4 (100.0)	0.422
Home	4 (50.0)	4 (50.0)	8 (100.0)	0.422
Total	192 (43.2)	252 (56.8)	444 (100.0)	
Mode of delivery				
SVD	154 (39.7)	234 (60.3)	388 (100.0)	0.005
CS	38 (67.9)	18 (32.1)	56 (100.0)	0.005
Total	192 (43.2)	252 (56.8)	444 (100.0)	

SVD: Safe vaginal delivery, CS: Cesarean section, PLF: Prelacteal feeds

most frequent (56.3%) followed by drinking water (27.0%) and artificial formula milk (16.7%), respectively. Delayed lactation (80.1%), maternal illness (4.2%), maternal HIV disease (4.2%), cesarean section delivery (4.2%), and multiple births (3.1%) were the major reasons given for administration of PLF.

DISCUSSION

Delay in initiation of breastfeeding beyond an hour after birth has been proven to be associated with increased risk of neonatal mortality. Babies who are not breastfed exclusively are at increased risk of infection-related mortality during the 1st month of life, especially from sepsis, respiratory and gastrointestinal tract infections [3]. Administration of PLF, therefore, is a definite contributor to neonatal morbidity and mortality by hindering early initiation of breastfeeding and exclusive breastfeeding.

The prevalence rate of PLF of 43.2% obtained in this study is comparable to 49.8% recorded in an urban city in Nigeria during the National Demographic Health Survey conducted in 2013 [8]. It is, however, higher than the 11.7% obtained from Benin, South-South Nigeria [6], but lower than the 57.8% and 85.2% obtained from Egypt [5] and a rural community in North-West Nigeria [7], respectively. Studies have shown that administration of PLF is by far a more common practice in rural communities where awareness of exclusive breastfeeding and the importance of colostrum as the essential and effective nutrition of the newborn might not have been created [7]. Effective health education and communication have been identified as paramount in the development of health-care system in Nigeria [10].

In this study, significantly more of the younger mothers aged 29–39 years administered PLF to their babies. This is in keeping

with observations from the previous studies [15,16]. Younger mothers are less experienced and skilled in newborn care and are less likely to be educated in appropriate care of the newborns. In contrast, older mothers are more likely to have had more pregnancies and more appropriate education on newborn care, including early initiation of breastfeeding and avoidance of PLF [7].

We found no statistically significant difference among the various educational levels, in terms of the administration of PLF. This observation is at variance with some previous reports which noted decreased incidence of the administration of PLF among the less educated as a result of inability to afford the cost of these feeds [8]. However, keeping in with the observation in a study conducted in Northern Nigeria, where education and age of the mothers were not significantly related to the administration of PLF [7]. Income earning status of the respondents did not impact on the administration of PLF statistically. This varies with previous reports which indicate that respondents who have income earning jobs are more likely to administer PLF because they are more likely to afford the cost than non-income earners [7].

Our study reveals that there is no significant relationship between place of attendance of the antenatal care of the mothers and administration of PLF. The implication is that all the respondents, irrespective of their places of antenatal care attendance, did not differ significantly from administering PLF to their babies at birth. The greatest proportion of mothers (73.9%) had their antenatal care in a hospital. It has been noted that health-care professionals sometimes do not communicate effective proper feeding practices of the newborn to antenatal care attendees. Some of these health care workers also occasionally give PLF to their own newborns [7]. This is a worrisome situation.

CS delivery was significantly associated with PLF administration. This has also been reported in a previous study [15]. CS delivery is often associated with the administration of infant formula [17]. Surprisingly, majority of the respondents (50%) who administered PLF in this study were influenced to do so by health care workers. Such reports have been noted previously [7,10]. This trend is most unacceptable and immediate and effective steps should be taken to halt it. However, the fact remains that CS delivery is never a contraindication to early initiation of breastfeeding [17]. Obstetric nurses should be trained and retrained on the practice of early initiation of breastfeeding in mothers that had CS. This will go a long way in discouraging PLF administration after CS.

Studies also have shown that mothers, family, and friends who influence newly birthed mothers to give PLF, unfortunately, base their information on personal experience and hearsay [18].

Glucose water (56.3%) was the major PLF administered in this study. Drinking water and glucose water constituted over 81% of the PLF in the study from Benin, Nigeria [6]. This is at variance with reports from Northern Nigeria [19] and a rural community in Ethiopia [20], where ordinary water and boiled water were the main PLF given, with only very few mothers giving glucose water.

In another study from North-Central Nigeria, infant formula was the main type of PLF, while water was the least administered [7]. Glucose water, infant formula, and herbal concoctions were the major PLF given to newborns at Egypt [5]. Cultural beliefs, financial status, and levels of education of the mothers may influence their choice of PLF.

The reason for administration of water as the main PLF in Northern Nigeria and Ethiopian studies could be because they are rural communities where the mothers were much less educated and lacked financial resources to purchase other PLF including infant milk formula. In our study, as well as that conducted in Egypt [5], the mothers were urban dwellers, with over 96% having secondary and tertiary education, and therefore, more financially endowed. Administration of water as PLF has been noted previously to be common among the less educated and poor communities [21]. Administration of glucose water could be fraught with danger to the health of the newborn because it could be prepared in high concentrations resulting in hazardous health consequences in the newborn including hyperglycemia, osmotic diarrhea, and rebound hypoglycemia. Moreover, water used in the preparation of the glucose water can be contaminated resulting in neonatal sepsis [3].

We could not document the anthropometrical indices of the babies of the mothers involved in this study. This would have helped us to correlate the outcome between babies who had PTL and those who had successful breastfeeding from birth. We further recommend that measures to reduce the prevalence of PLF administration should include sustained and intensive education of the public, through mass media and seminars, on the benefits of early initiation of breastfeeding after birth and the dangers of PLF. There should be training of all those involved in obstetric practice on newborn feeding practices, including those in health-care institutions and informal places of delivery, such as churches. Furthermore, regular training and retraining of all cadres of health workers, using practical workshops on early initiation of breastfeeding will help stop PLF. After such workshops, senior obstetric staffs should supervise the junior ones to ensure compliance with all the steps to successful breastfeeding.

There is need to focus on all classes of actively reproductive women of different educational levels and financial status, educating them on appropriate newborn care, emphasizing early initiation of breastfeeding, and avoidance of PLF. Appropriate feeding practices of the newborn should be included in the school health education curriculum of adolescents.

CONCLUSION

The prevalence of PLF administration in our study was high. Significant factors associated with PLF administration are women of younger age and delivery by CS. Health workers constituted the greatest influence for the administration of PLF.

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Funding: None; Conflict of Interest: None Stated.

How to cite this article: Onyearugha CN, Okoronkwo NC. Prelacteal feeds: Prevalence and associated factors as seen at a University Teaching Hospital, Southeast Nigeria. *Indian J Child Health*. 2019; 6(2):83-86.

Doi: 10.32677/IJCH.2019.v06.i02.008