



Prelacteal Feeding Practices of Mothers Attending Infant Welfare Clinic in a Tertiary Hospital in Port Harcourt, Nigeria

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Authors' contributions

This work was carried out in collaboration between both authors. Author PIO designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Both authors managed the analyses of the study and literature searches. Both authors read and approved the final manuscript.

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ABSTRACT

Background: Breastfeeding pattern established in the immediate neonatal period is a determinant of long term breastfeeding behaviour.

Objectives: To determine prelacteal feeding practices of mothers attending the Infant Welfare Clinic of a tertiary hospital in Port Harcourt, Nigeria.

Subjects and Methods: This was a cross sectional hospital based study carried out over a 3 month period. A structured, self-administered questionnaire was distributed to mothers whose babies were 0 to 6 months old, who visited the infant welfare clinics of the hospital for any of the child health services such as immunization, nutrition counselling, weighing and vitamin A supplementation. Questions asked included socio-demographics, the first feeds given immediately after birth, how long it took to commence breastfeeding and reasons for giving any feeds other than breast milk.

Results: A total of 207 mothers participated in this study, mean age 30.73±4.129SD. 146 (70.5%) mothers gave breast milk as the first feeds to their babies while 61(29.5%) gave prelacteal feeds.

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Fifty eight (28%) of the babies were put to breast within 2-12 hours after delivery. There was a significant positive relationship between time to first breast feed and administration of prelacteal feeds ($p = 0.000$).

Reasons for giving substances other than breast milk included poor or no lactation and caesarian section delivery. The commonest reason for not giving breast milk as the first feed was because breast milk did not flow. Factors which positively influenced giving breastmilk as the first feed included maternal level of education ($p=0.018$), delivery in government health facilities ($p=0.00$) and having vaginal delivery ($p=0.008$).

Conclusion: Prelacteal feeding practice is common among mothers in Port Harcourt. Time to first breast feed, mode of delivery and place of delivery were some of the factors that influenced use of prelacteal feeds.

Keywords: Prelacteal; feeding; practice.

1. INTRODUCTION

Human breast milk is accepted all over the world as the best source of nutrition for the human infant in the early days of life and is recommended by the World Health Organization (WHO) exclusively for the first six months of life with the introduction of age appropriate foods while continuing breast milk/breast feeding for two years and beyond [1]. This provides for adequate growth and reduces infant morbidity and mortality especially in developing countries [1]. The benefits of breast feeding are enormous both for mothers and their infants. Some of these are: for the infant, provision of superior nutrition for optimum growth, adequate water for hydration, protection against infection and allergies and promotion of bonding and development, and for the mother; more rapid weight loss after birth, aids uterine involution and reduces bleeding after delivery and reduces risks of diseases such as breast and ovarian cancers [1-3]. However there are certain factors that mitigate against the practice of breast feeding, one of which is the administration of prelacteal feeds after birth. Prelacteal feeds are foods or fluids given to the newborn infant before breastfeeding is initiated [4]. Some of these foods/fluids include water, infant formula, glucose drinks or other readily available fluids within the environment. Studies have shown that such feeds constitute a barrier to both exclusive breast feeding and overall duration of breast feeding [4,5]. The World Health Organization (WHO) and UNICEF have discouraged the use of prelacteal feeds except medically indicated because of their adverse effects on infant feeding. However such practices still exist in many developing countries [6-9].

Our hospital which is a tertiary institution was designated a Baby Friendly hospital several years ago and one of the WHO rules for a baby

friendly hospital is that no fluids or drinks be given to newborn infants except medically indicated. The aim of the study was to determine prelacteal feeding practices among mothers bringing their babies for various reasons such as immunization, growth monitoring and nutrition counselling to the infant welfare clinics of the hospital.

2. METHODS

This was a cross sectional hospital based study carried out at the infant welfare clinics of the University of Port Harcourt Teaching Hospital (UPTH) over a 3 month period. The hospital provides pediatric and child health services to both inpatients and outpatients in and around the state and is one of the accredited Baby Friendly Hospital Initiative (BFHI) centers in Nigeria. The Infant Welfare Clinics of the hospital are run daily from 8 am to 4 pm except at weekends. Activities in the clinic include routine immunization, growth monitoring and nutritional counseling. Mothers who presented with children 0-6 months for routine immunization or other services were randomly recruited for the study over the period. Only mothers who gave informed consent for the study participated. Data were collected using a simple structured self-administered questionnaire. Information obtained included biodata, socio-demographics, place of antenatal care and delivery, mode of delivery, type of first feeds given to their babies, and reasons for any feeds other than breast milk. Investigators were on ground to assist mothers who had difficulties in reading or writing. Mothers were not allowed to take away the questionnaires and same were retrieved as soon as they had been filled. Parental educational status and occupation were used to determine social class using Oyediji's method [10]. Data collected were entered into an excel spread sheet and analyzed using the Statistical Package for Social Sciences version

20.0 software. Chi-square test was used to test for association between independent variables. P values < 0.05 were considered statistically significant.

3. RESULTS

Two hundred and seven mothers participated in the study. The mean age of the mothers was 30.73 ± 4.13 . One hundred and forty six (70.5%) mothers had tertiary level of education while 55 (26.6%) had secondary level of education. Two hundred and one mothers (97.1%) had antenatal care, most of whom were in recognized Government owned health facilities including UPTH (111; 53.9%). One hundred and fifteen (55.6%) mothers delivered vaginally while 98 (47.3%) delivered by caesarian sections either elective or emergency. Table 1 shows the general characteristics of the mothers.

The ages of the babies ranged from 0-6 months with the modal age group of 0-1 month. Age distribution was 0- 1 month (103; 50.5%), >1 -2 months (19; 9.2%), >2- 3 months (23; 11.1%), >3- 4 months (13; 6.3%), >4 – 6 months (49; 23.7%).

Forty seven mothers (22.7%) put their babies to the breast within one hour of delivery while 38 (18.4%) put their babies to breast after 24 hours.

One hundred and forty six (70.5%) mothers gave breast milk as the first feed to their babies. The prevalence of prelacteal feeding was 29.5%. Other substances given included water, glucose drinks and infant formula. Table 2 shows different first feeds given to babies and time to first breast feed. There was a significant positive relationship between time to first breast feed and administration of prelacteal feeds ($p = 0.000$).

Reasons for giving substances other than breast milk included poor or no lactation and caesarian section delivery (Table 3).

Table 4 shows association between different variables and administration of prelacteal feeds.

There was a significant association between place of birth and administration of prelacteal feeds $p=0.000$. Babies born outside UPTH were more likely to receive prelacteal feeds.

Maternal level of education and mode of delivery were also significantly associated with administration of prelacteal feeds ($p<0.05$).

There was no significant association with maternal age, baby's sex and social class ($p \geq 0.05$).

One hundred and thirty six mothers (65.7%) were exclusively breast feeding at the time of this report. Of the 71 (34.3%) mothers who were not exclusively breast feeding, reasons given included; not enough breast milk (43; 60.6%), inability to cope because of work (18; 25.4%), preference for mixed feeding (7; 9.9%) and medical reasons (2; 2.8%). Mothers who did not administer prelacteal feeds were more likely to sustain exclusive breast feeding $p = 0.000$ (Table 5).

4. DISCUSSION

The study shows a prevalence of prelacteal feeding of 29.5% among the mothers studied. This prevalence was lower than previously reported prevalence over time as shown from the Nigeria Demographic and Health Survey data for the period (2003–2013) [11]. The survey showed higher but fluctuating prevalence of prelacteal feeding practices over time. The difference may be due to the differences in the study groups i.e. house hold surveys versus this study done in a Baby Friendly hospital. It was also low when compared to findings from other developing countries [12,13]. The prevalence was however higher than 11% reported in Benin, Nigeria [12]. These different rates could be due to differences in cultural beliefs and practices in different communities even within the same country. Studies have shown a relationship between prelacteal feeding patterns and cultural practices of nursing mothers [14,15].

It is also important to note that this study, was based on self-reports, which have been reported as a likely source of measurement bias [16], as it was dependent on mothers' ability to recall first feeds. However the fact that only mothers who were nursing infants aged 0-6 months with majority of the babies in the 0 – 2 month age group, participated may have reduced this bias.

Many of the mothers had either secondary or tertiary education, corroborating findings that mothers' level of education correlates with their use of health services [17,18]. A previous study in Benin on prelacteal feeds showed similar maternal characteristics [19].

The study showed that the higher the level of education the less likely the mothers were to give prelacteal feeds. This is in keeping with findings

from a demographic survey done in Nigeria which showed significantly lower rates among mothers with secondary or higher levels of education [11]. Other authors also reported that when compared to the mothers with no education, mothers with some level of education were less likely to provide prelacteal feeds [4,12]. This could be attributed to the fact that educated mothers are more likely to have antenatal care and hence better access to information on breast

feeding and its beneficial effects. However, findings were at variance with reports from Benin, Nigeria which showed no significant relationship between maternal education and prelacteal feeding [19]. This disparity cannot be readily explained as both the Benin study [19] and the present study had similar characteristics in terms of educational status of the participants. This may point to other factors such as culture influencing practice.

Table 1. Maternal characteristics

Place of antenatal care	Frequency	Percent
Government owned health facility	171	82.6
Private health facility	25	12.1
Others- Traditional birth attendant, home, maternity homes, etc	11	5.3
Place of delivery		
Government owned health facility	149	72
Private health facility	41	19.8
Others- Traditional birth attendant, home, maternity homes, etc	12	5.8
Total	207	100
Type of delivery		
Normal delivery	115	55.6
Caesarian section	88	42.5
Elective	45	21.7
Emergency	43	20.8
Assisted vaginal delivery	4	1.9
Total	207	100
Mothers education		
Tertiary	146	70.5
Secondary	55	26.6
Primary	5	2.4
None	1	0.5
Total	207	100

Table 2. Types of first feeds given to babies and time to first breast feed

Variable	Frequency	Percentage
First feed given to babies		
Breast milk	146	70.5%
Glucose drinks	40	19.3
Infant formula	10	4.8
Water	9	4.4
Others	2	1.0
Total	207	100.0
Time to first breastfeed		
Within 30 mins	23	11.1
30mins – 1 hour	24	11.6
>1-2 hours	45	21.7
>2-12 hours	58	28
>12-24 hours	14	6.8
>24 hours	41	19.8
Never breastfed	2	1

Table 3. Reasons for administration of prelacteal feeds

Reason	Frequency	Percent
Breast milk not flowing	55	26.6
Caesarian section delivery	3	1.4
Baby was too hungry	1	0.5
Breast milk was sour	1	0.5
Retracted nipples	1	0.5

Table 4. Relationship between different variables and administration of prelacteal feeds

Variable	Administration of prelacteal feeds		P-value
	No (%)	Yes (%)	
Delivery place			
UPTH	111 (53.9)	23(11.1)	P=0.000
Other Government facility	13 (6.3)	7(3.4)	
Private hospital	13 (6.3)	29(14.0)	
Others – Home, maternity home, TBA	8 (3.9)	3(1.5)	
Delivery mode			
Vaginal	89(43)	15(7.2)	P =0.008
Assisted vaginal	1(0.5)	3(1.5)	
Emergency cs	32(15.5)	13(6.3)	
Elective cs	24(11.6)	19(9.2)	
Maternal education			
None	0 (0)	1 (0.5)	X2 24,36P= 0.018
Primary	2 (1.0)	3 (1.5)	
Secondary	39 (18.8)	16 (7.7)	
Tertiary	105 (50.7)	41 (19.8)	
Social class			
High	25	8	P=0.842
Middle	75	33	
Low	46	20	
Baby's sex			
Male	74	31	P=0.995
Female	72	30	
Maternal age (years)			
<16-20	0	0	X267,09, p=0.17
21-25	8 (3.9)	11 (5.3)	
26-30	62(30)	27(13)	
31-35	54(26.1)	15(7.2)	
≥36	22(10.6)	8(3.9)	

Table 5. Relationship between prelacteal feeds and sustained exclusive breast feeding

Prelacteal feeds	Exclusive breast feeding		P value
	Yes	No	
Yes	61	33	0.000
No	146	38	
Total	207	71	

TBA- traditional birth attendant

The finding that socioeconomic class did not influence administration of prelacteal feeds was at variance with reports from the Nigerian Demographic Health Survey [11]. The reason for this disparity may be the relatively lower numbers of mothers in the low social class in this study. It

also differed from the Nepal study [4] which showed lower prelacteal feeding practice rates amongst the poorest wealth groups and also at variance with findings by Wadde et al. [20] and Dawa et al. [21] in India which showed higher rates of prelacteal feeding in the lower

socioeconomic groups. These findings again may represent variations in cultural practices in different communities.

Mothers who delivered in the UPTH were less likely to use prelacteal feeds. This is not unexpected as the hospital is baby friendly and mothers are more likely to receive breast feeding education in such centers. Information about breastfeeding given by health professionals to pregnant woman during antenatal visits encourage good breastfeeding practices and mitigate against harmful practices like prelacteal feeding [22].

Compared to mothers who delivered vaginally, more than half of the mothers who had operative deliveries administered prelacteal feeds to their babies. This has been reported by other authors [9,23,24]. Cesarean delivery has been documented as an important barrier to breastfeeding initiation and this is attributed to the routines of postoperative care which delay or interrupt the contact between mothers and their newborns [23,24]. This delay encourages use of prelacteal feeds. Authors have suggested that reducing the rates of cesarean section deliveries is likely to reduce the prevalence of prelacteal feeding [9].

The study did not also show any relationship between maternal age and administration of prelacteal feeds. This was in contrast to the findings in Benin [19]. It is possible that other factors such as education and place of delivery could have blunted any effects of maternal age in this study. The infants' sex did not also affect administration of prelacteal feeds positively or negatively. This is similar to findings in Egypt demographic and health survey 2008. Other authors have shown that females were more likely to be given prelacteal feeds [24,25].

The commonest reason for prelacteal feeding was insufficient milk production or delayed lactation and water was the main prelacteal feed. This has been reported by other Nigerian authors [19,26]. In many developing countries, portable water is often in short supply, thus water as a prelacteal feed may in addition to inhibiting breastfeeding, also be harmful to the newborn. WHO reports that diarrhea and malnutrition linked to ingestion of contaminated water causes significant morbidity and mortality in young children [27]. Furthermore the study showed that the earlier breast feeding was initiated, the less the likelihood of administration of prelacteal feeds. Delayed breastfeeding initiation has been

reported as a reason for premature introduction to prelacteal feeding with the associated risk of depriving children from the protective effects of colostrums [28]. Similarly, prelacteal feeding has been linked to sub-optimal breastfeeding practices such as not giving colostrum to newborns and delayed initiation of breast feeding [28]. In a population based cohort study from the Honduras water and milk based prelacteal feeds were associated with delay in the time at which the child was offered the breast for the first time [29]. It could be inferred that when breast feeding initiation is delayed there is a tendency to initiate prelacteal feeds and once prelacteal feeds are introduced there is a tendency to delay breast feeding. This vicious cycle has been noticed and reported and is one of the reasons why WHO discourages prelacteal feeding [30,31].

There was also significant association between nonuse of prelacteal feeds and maintenance of exclusive breast feeding. This has also been reported by other authors [32,28,33]. This buttresses the fact that administration of prelacteal feeds should be strongly discouraged and mothers need support to promote and protect breastfeeding especially in the immediate post partum period.

5. CONCLUSION

The prevalence of prelacteal feeding was 29.5%. Factors such as maternal education, place of delivery, mode of delivery and time to first breast feed were significantly associated with administration of prelacteal feeds. Exclusive breast feeding rates were lower in mothers who administered prelacteal feeds to their babies. Policies should be put in place to educate mothers both in formal and informal settings and also to support them to promote and protect breastfeeding before, and in the immediate post-partum period.

CONSENT

Written consent was taken from the parents of the participants.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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