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Ibadin OM
Ofili NA
Monday P
Nwajei CJ

Prelacteal feeding practices among lactating mothers in Benin City, Nigeria

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Ibadin OM (✉)
Department of Paediatrics,

Ofili NA
Department of Community Health,

Monday P, Nwajei CJ
Medical Intern, University of Benin Teaching Hospital, Benin City, Nigeria.

Abstract *Background:* Exclusive breastfeeding is the cornerstone of adequate early infant nutrition. Despite the acknowledged gains of Baby Friendly Hospital Initiative (BFHI) and other interventional measures in ensuring optimal infant nutrition, it is still a common practice for newborn babies to be given substances other than breast milk within the first day of life.
Methods: To re-examine why this is so, a prospective, cross-sectional study involving mothers with recent history of lactation was carried. It involved 403 mothers attending the well Baby Clinic of the University of Benin Teaching Hospital in 2009. A semi structured questionnaire was used in obtaining relevant information on pre-lacteal feeding.
Results: The prevalence of pre-lacteal feeding was 11.7%. Water only constituted the most common (44.3%) pre-lacteal feed. Other feeds administered included glucose drink, (37.2%), and honey (4.6%). The reasons for pre-lacteal feeding included perceived delayed lactation and the need to keep the body warm and mouth moist. The younger the respondents, the more likely she would practice pre-lacteal feeding (X^2 = 11.4; p = 0.022). Also significantly associated with pre-lacteal feeding is the route of delivery. Pre-lacteal feeding was commoner with surgical deliveries (X^2 = 7.0; p = 0.05). Pre-lacteal feeding was however un-associated with respondents' tribe, educational status, religion and place of delivery. Pre-lacteal feeding remains a challenge to adequate infant nutrition.
Conclusion/Recommendations: There is need for further enlightenment on the dangers inherent in the practice. Education of the populace would need to be improved upon if the initial gains accruing from BFHI are not to be reversed.

Key words: Pre-lacteal feeding Infant, Nutrition, Benin City.

Introduction

Breast-feeding is the most natural way of meeting the infant's nutritional demands.[1] Nursing mothers are therefore encouraged to exclusively breastfeed their babies for a period of at least 6 months. Human milk has since been found to be superior to other forms of supplementary feeds that the infant receives.[1]
Despite the existence of the UNICEF/WHO BFHI campaign to popularize exclusive breastfeeding and its global acceptability, it is still a common practice in some cultures to give babies other substances to drink within the first day of life before the actual commencement of breastfeeding.[2-4]

Such feeds or fluids when administered before lactation is established are known as pre-lacteal feeds (PLFs). Pre-lacteal feeds can be categorized as follows: a) Water only, b) water based (herbal concoction, rice water, juice), c) milk-based (i.e. milks other than breast milk).[4] Even among health workers pre-lacteal feeding is a common practice.[2] Reasons for giving PLFs fall into three main groups as shown by Akuse in a study conducted in 2002 in Kaduna.[2] These are:- a) perceived breast milk insufficiency, b) medical reasons (including prevention of dehydration, hypoglycaemia), c) non-medical reasons (these include cleansing and preparing the baby's gastrointestinal tract for digestion, to quench thirst; flush the bladder and afford the mother some rest). Caesarean delivery, vaginal delivery in hospital (versus at home), late initiation of breastfeeding, pre-lacteal water feeds, and delayed milk arrival were positively associated with the use of milk-based PLFs.[5] Other factors associated with the use of milk-based PLFs include primiparity, male infant, higher level of maternal education, and maternal employment outside of

the household.[5]
Studies have shown that most of the reasons why PLFs are given or prescribed have no scientific basis, instead they could have negative and adverse effects on the infants.[4,6,7] PLFs result in the baby receiving insufficient breast milk, lactation failure, diarrhoea and shortening of the duration of breastfeeding.[2] The use of breast milk substitutes could jeopardize subsequent breastfeeding success.[6] Because pre-lacteal feeding practices are determined by a number of variables including cultural practices, extent of success of exclusive breastfeeding advocacy campaigns and time of study, it is important that from time to time, PLF practice is reviewed. Results of such endeavors would set the stage for interventional measures meant to discourage pre-lacteal feeding and enhance optimal early child nutrition.

This study therefore seeks to determine the current practices of pre-lacteal feeding among lactating mothers in Benin City. The study shall also address some of the determinants of pre-lacteal feeding among lactating mothers.

Subjects and methods

Study Area

This study was carried out in the Well Baby Clinic (WBC) of the University of Benin Teaching Hospital (UBTH) located in the General Practice Clinic (GPC) of the Hospital. The WBC holds on every working day of the week. About 50 lactating mothers with babies (aged one year and below) are seen daily.
UBTH is a UNICEF/WHO designated Baby Friendly Hospital implying that clients should be aware of the benefits of exclusive breast-feeding (EBF) and the other packages contained in the Baby Friendly Hospital initiative (BFHI). Collection of data was carried out in the mornings when respondents with their babies were expected to be in the clinic.

Respondents were those in the reproductive age bracket of 16-45 years, who were lactating and had babies aged one year and below. However, those who had contra-indications to breastfeeding were excluded. Also excluded were those who declined participation in the study and those who were not biological mothers of the index babies. (e.g. grandmothers, step-mothers, surrogate mothers, etc). Ethical clearance for the study was obtained from the Ethics Committee of UBTH. Respondents were informed about the nature and benefits of the study and their consents obtained before administration of the questionnaires made up of both open ended and closed questions meant to achieve the objectives of the study. A total of 403 lactating mothers were recruited into the study. Every mother that met the criteria for inclusion at the WBC was recruited into the study that took place between April and September, 2008. Each subject had an equal chance of being selected as consecutive sampling method was used until the desired sample size was achieved.

The data collected were entered into a computer for analysis using the Statistical Package for Social Sciences (SPSS) version 13.0 software. Chi-square test was used to test for association between independent variables. Winpepi programs version 2.16 was also used for the calculation of Chi Square test.

Result

Social Characteristics of study subjects

Four hundred and three mothers of child bearing age (respondents) were recruited into the study. The modal age bracket of these respondents was 26-30 years.
One hundred and forty three (35.5%) were Binis while 62(15.4%) were Ibos. Disposition of other ethnic groups is as shown in table 1. Also shown in table I is the occupational distribution of the respondents.

Table 1: Bio data and social characteristics of study subjects

Age bracket (years)	Number (%)
16 – 20	10(2.5)
21 – 25	107(26.6)
26 – 30	153(38.0)
31 – 35	102(25.3)
36 – 40	27(6.7)
41 – 45	4(1.00)
Tribe/Ethnicity	
Bini	143(35.5)
Ibo	62(15.4)
Ishan	61(15.1)
Yoruba	47(11.7)
Urhobo	33(8.2)
Itsekiri	13(3.2)
*Others	44(10.9)
Occupation	
Business woman	164(40.7)
House wife	54(13.4)
Hair dressing	46(4.4)
Civil servant	31(7.7)
Schooling	24(6.0)
**Professional	12(3.0)
*Others	46(4.4)

* Others as shown in the table (under Ethnicity), comprise Isoko, Etsako, Ika, Igbanke and tribes such as Hausas.
** Professionals include doctors, lawyers, engineers, etc.

Table 2 reveals the distribution of respondents according to educational status and religion. Two hundred and thirty two (57.6%) respondent had secondary education while only four (1.0)%) had no formal education. Christianity was the dominant (96.3%) religion among the respondents. Religious disposition of the remaining 15 (3.7%) is as shown in Table 2. Of the 403 respondents, 401(99.5%) were married. One (0.2%) each was single or separated.

Table 5: Relationships between Respondents' Social Characteristics and Administration of Pre-lacteal Feeds.

Variable	Total (%)	Administration of prelacteal feeds: Yes (%)	No (%)	Likelihood ratio X^2	p-value
Mother's age [in brackets (years)]					
16-20	10(100.0)	04(40.0)	06(60.0)		
21-25	107(100.0)	14(13.1)	93(86.9)		
26-30	153(100.0)	20(13.1)	133(86.9)	11.40	0.022
31-35	102(100.0)	07(6.9)	95(93.1)		
>36	31(100.0)	02(6.5)	29(93.5)		
Tribe					
Bini	143(100.0)	15(10.5)	128(89.5)		
Ishan	61(100.0)	08(13.1)	53(86.9)	0.87	0.832
Ibo	62(100.0)	09(14.5)	53(85.5)		
Others	137(100.0)	15(10.5)	122(89.1)		
Educational Status					
None	04(100.0)	0(0.0)	04(100.0)		
Primary	52(100.0)	05(9.6)	47(90.4)	1.74*	0.628
Secondary	232(100.0)	30(12.9)	202(87.1)		
Tertiary	115(100.0)	12(10.4)	103(89.6)		

* Likelihood-ratio Chi Square, 0.0000001 added to zero to permit computation.

Religion: Forty six (11.9%) of the 388 Christians and one (12.5%) of the eight Moslems practiced pre-lacteal feeding. None of remaining seven who practiced other forms of religion did so. However there was no significant association between mothers' religion and practice of pre-lacteal feeding.

Route of delivery: Regarding the route of delivery responses were available for only 392 respondents. Twelve (23.1%) of the 52 respondents who had their babies through caesarian section practiced pre-lacteal feeding while only 35(10.3%) who had spontaneous vertex delivery did so. A significant association existed between route of delivery of index child and practice of pre-lacteal feeding. (X^2 = 7.0, df=1, p=0.05). Mothers who had surgical deliveries were more likely to practice pre-lacteal feeding.

Discussion

The prevalence of pre-lacteal feeding amongst the respondents was 11.7%. This value is low relative to figures obtained from previous studies conducted in rural Bangladesh[6] and India[8] where prevalence values of 77% and 45% were obtained respectively. Although these studies were carried out after the commencement of the UNICEF/WHO BFHI in 1992, a possible explanation for the large disparity between the prevalence rate in this study and these previous studies,[6,8] could be attributed to differences in the cultural values and practices of these different communities. However, it could also be assumed that the BFHI has become a more generally accepted and established practice at the time and place of this study compared to the periods and places of these previous studies.[6,8]

The study further revealed that the major reason why these mothers administer pre-lacteal feeds was delayed lactation (53.3%). The findings from this study were in keeping with those noted in a previous community-based study in Chittagong district of rural Bangladesh.[6] However, in the Bangladeshi study, social customs accounted for the major reason why pre-lacteal feeds were administered. The findings contained in our study are consistent with those noted in another study conducted in rural Bilbeis, Egypt in 1992 where lack of milk in the mother's breasts and maternal exhaustion were the two most commonly stated reasons for pre-lacteal feeding[8.] Our findings were also consistent in part with the findings of a UNICEF sponsored study among healthcare workers in Kaduna, where insufficient breast milk was the major reason nurses administered PLFs – a fallout of which is the fact that such health workers could actually reinforce the practice of pre-lacteal feeding. Other reasons advanced were non-medical reasons such as gastro-intestinal tract preparation and quenching of thirst.[2] A possible explanation for the similarity in reasons for PLFs administration as seen in this study and previous studies could be due to limited mother's knowledge of breastfeeding practices and perception of infant feeding.

Pre-lacteal feeding was not carried out by the respondents alone, other individuals also did. A number of mothers were influenced to administer pre-lacteal feeds. Healthcare providers also influence mothers to administer PLFs and also do administer PLFs to infants themselves.[9-11] This situation majorly arose in cases of delayed lactation, maternal illnesses and infants' ailments e.g. neonatal jaundice. It is therefore necessary that healthcare workers undergo training and subsequent retraining programs in lactation management, with emphasis on the dangers of giving PLFs and discountenancing the misconceptions surrounding EBF.[2]

Table 2: Respondents' status by education and religion

Educational Status	Number (%) n = 403
None	4(1.0)
Primary	52(12.9)
Secondary	232(57.6)
Tertiary	115(28.5)
Religion	
Christianity	388(96.3)
Islam	8(2.0)
African Tradition	2(0.5)
Others	5(1.2)

Prevalence of Pre-lacteal feeding.

Forty seven (11.7%) of the 403 respondents practiced pre-lacteal feeding while the remainder, 356(88.3%) did not. The prevalence of pre-lacteal feeding was therefore 11.7%. Of the 47 respondents who practiced pre-lacteal feeding 21(44.7%) did so on their own volition while in 26(55.3%) pre-lacteal feeding was carried out by relations and friends.

Types of Pre-lacteal Feeds.

Water only constituted the most common (19/47 or 44.2%) pre-lacteal feeds administered. This was closely followed by glucose drinks, 16/47 or (37.2%); while the least administered pre-lacteal feed was honey accounting for 4.6% of cases. (Table 3).

Table 3: Types of Pre-lacteal feeds utilized

Types of Feeds	Number (%) n = 43
Water only	19(44.2)
Glucose drink	16(37.2)
Nonhuman milk	06(13.6)
Honey	02(4.6)
Total	43(100.0)

Forty seven respondents practiced pre-lacteal feeding but four of the respondents gave no responses

Pre-lacteal Feeds Administration

Pre-lacteal feeds were administered by both the respondents themselves and also by someone else. Of the 47 children who received pre-lacteal feeds, only 21(44.7%) had it administered by the respondents themselves.

Reasons for Administration of Pre-lacteal Feeds

The main reason for the administration of pre-lacteal feeds was delayed lactation observed in 24(53%) of the 47 respondents that did so. Reasons proffered by the remaining 23 concerned respondents are as shown in Table 4.

Table 4: Reasons for Pre-lacteal feeds administration

Reasons	Frequency
Delayed Lactation	24(51.1)
Keep body warm	5(10.6)
Keep mouth moist	4(8.5)
Insufficient milk	3(6.4)
Cultural practice	3(6.4)
Clear intestines	1(2.1)
Others	5(10.6)
No response	2(4.3)

Some respondents gave multiple responses

Knowledge of Disadvantages or Demerits of Pre-lacteal Feeding

Majority, 241/403 or 59.8% of the respondents asserted there were no disadvantages associated with pre-lacteal feeding, while 22(5.5%) claimed they do not know if there were any dangers associate with this practice. However, 140 or 34.7% of the respondents were of the opinion that there were possible dangers inherent in the practice.

Demerits of Pre-lacteal feeding as Volunteered by Respondents

Demerits or disadvantages of PLF as volunteered by the respondents included infection, 73(39.5%); diarrhea, 63 (34%); poor growth, 35(18.9%) and vomiting, 14(7.6%).

Place of Delivery of Index Child

The highest proportion of respondents, 318 or 79.0% gave birth to their index children in hospitals (79.0%). However 58(14.4%), 16(4.0%) and 11(2.6%) delivered in churches/spiritual homes and at traditional birth attendants' places respectively.

Relationship between Respondents' Social Characteristics and Administration of Pre-lacteal feeds.

Age: The age group with the highest proportion of respondents that practiced pre-lacteal feeding was 16-20 years (40%), while the age bracket with the least proportion of respondents who practiced pre-lacteal feeding in the index children was > 36 years (02 or 6.5%). (Table 5). There was an association between the age of respondents and the practice of pre-lacteal feeding in the index child ($p= 0.022$). The younger the respondents were, the higher the tendency to practice pre-lacteal feeding.

Tribe: Pre-lacteal feeding was commoner among the Ibos (14.5%) and Esan people (13.1%) however there was no significant association between tribe/ethnicity and practice of pre-lacteal feeding. (Table 5).

Mothers' educational status: There was no significant association between mothers' educational status and practice of pre-lacteal feeding (Table 5).

Water-only (44.2%) was the main pre-lacteal feeds administered. This finding was however at variance with those contained in a previous study carried out in Kaduna, Nigeria in 2002, in which infant formula was the main type of PLF administered and plain water (i.e. water-only) was the least administered PLF by healthcare workers.[2] This difference could possibly be due to variations in the social characteristics of the subjects in the two studies.

A high proportion of the respondents were in the second and third decades of life. This implied that such persons would probably be in their active reproductive periods in life. There was an association between the age of respondents and the practice of pre-lacteal feeding. The highest proportion of respondents who practiced pre-lacteal feeding fell within the age group of 16-20 years (40.0%). It was very obvious that the tendency to practice pre-lacteal feeding declined as maternal age increased. Our findings are consistent with those from a study conducted in Honduras.[5] 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 tended to adhere better to instructions and teachings received from health education talks.

Less than one percent of the respondents had no formal education. This finding is perhaps a reflection of the result of the increased advocacy for the girl child education in the study locale. Also, the study was conducted in an urban centre where there are lots of educational centres where education even up to the tertiary level could be acquired. However, there was no association between the educational status of the respondents and practice pre-lacteal feeding. This finding is at variance with that in a previous study conducted in India in which the effects of maternal literacy was found to be significantly associated with the practice of pre-lacteal feeding.[8]

The religious inclination of the respondents is in keeping with what is obtainable in the population of the study locale where Christianity predominates. However, there was also significant association between the religious inclinations of respondents and the practice of pre-lacteal feeding.

Virtually every respondent was married (99.5%). This may be traceable to the cultural practices in the study location that abhors child birth outside marriage. Also, a high proportion of the respondents had their antenatal care and delivery at a registered health facility (93.8% and 79.0%) respectively). Again, majority of the respondents had their delivery via the vaginal route. Findings in this study showed that surgical deliveries were associated with increased incidence of pre-lacteal feeding. A substantial proportion of respondents who had caesarean section administered pre-lacteal feeds. This finding is consistent with those contained in other studies which identified caesarean delivery[5] as a factor that was positively associated with the administration of pre-lacteal feeds.

One had expected that majority of the respondents would have ample knowledge of the possible dangers associated with pre-lacteal feeding irrespective of their educational status, and also, that awareness of these dangers would influence their practice of pre-lacteal feeding. This assumption is predicated on the fact the study locale is a tertiary health facility that was designated a UNICEF/WHO baby friendly hospital, and as such, the mothers who patronized her services are expected to have had adequate health education with regards to pre-lacteal feeding. Unfortunately, a sizeable number of respondents (59.8%) claimed that there were no demerits associated with the practice of pre-lacteal feeding. However, infections (39.5%), diarrheal diseases (34.0%), poor growth (18.9%) and vomiting (7.6%) were the dangers associated with pre-lacteal feeding as volunteered by the respondents. These findings were however in agreement with those obtained in a previous UNICEF sponsored study in Kaduna.[2] Apart from the already outlined risks, pre-lacteal feeding also carries the danger of jeopardizing subsequent breastfeeding success[5]; leads to lactation failure, results in the infant receiving insufficient breast milk. It also shortens the duration of breastfeeding.[2]

Against expectations the knowledge of dangers associated with pre-lacteal feeding was independent of the educational status of respondents. Why this should be so is not readily apparent.

Conclusion

Pre-lacteal feeding is common, reasons responsible for the perpetuation of the practice are non medical and untenable. Substances utilized are not superior to breast milk and the major determinants could be targeted in interventional measures meant to reduce the practice to the barest minimum. The BFHI as agent for entrenching optimal early infant feeding would need to be reinvigorated and health education in schools strengthened.

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