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Original Research Article

After giving birth to a baby, breastfeeding becomes your responsibility: Infant feeding perceptions and practices among women in Yaoundé, Bamenda and Bandja, Cameroon, Africa

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The Ministry of Public Health of Cameroon advises mothers to follow the World Health Organization's recommendation of exclusive breastfeeding during the first six months of life and to continue breastfeeding along with appropriate complementary foods up to two years or beyond. Despite these recommendations, malnutrition due to inadequate feeding practices is still prevalent in Cameroon. Therefore, this study aims to explore infant feeding perceptions and identify factors influencing infant feeding practices in Cameroon. Forty-nine women aged 19 to 38 who had infants aged 6 days to 15 months were purposively selected from hospitals during the vaccination days and interviewed until saturation. The research tools included six qualitative group interviews, with each group comprising 6 to 10 women. The study was conducted in the rural area of Bandja and the urban areas of Yaoundé and Bamenda. Data were analysed using content analysis. In the study, breastfeeding was agreed upon as the best way to feed infants and was commonly practised for 1 to 2 years. Nevertheless, few infants were breastfed exclusively. Complementary foods were often nutritionally inadequate; many children were not given fruit, vegetables or foods of animal origin on a daily basis. Cultural beliefs, tradition, community norms and low educational and economic levels negatively influenced the implementation of appropriate infant feeding recommendations. The short duration of exclusive breastfeeding and the poor food diversity are the main problems. In response, it is necessary to strengthen the position of women, increase the period of maternal leave, introduce sustainable and practical education for both parents about breastfeeding, and provide good, local complementary foods.

Key words: Exclusive breastfeeding, malnutrition, feeding perceptions, Cameroon.

INTRODUCTION

Cameroon has an under-one year of age mortality rate of 61 and an under-five mortality rate of 95 per 1000 live births (WHO, 2014). Children are most vulnerable to undernutrition during their first 21 months of life. Moderate malnutrition contributes to more deaths than severe malnutrition (WHO, 2014). To combat malnutrition, the Ministry of Public Health of Cameroon advises mothers to follow the World Health Organization's recommendation of exclusive breastfeeding during the first six months of life and to continue breastfeeding along with appropriate complementary foods up to two years or beyond (Ministry of Public Health and UNICEF, 2006; National Institute of Statistics, 2012). Exclusive breastfeeding is defined as feeding a child only with breast milk and, if needed,

supplementing with vitamins, minerals and prescribed medicines (UNICEF, 2015). No additional foods or drinks such as water, cow's milk, juices, semi-solids or solids should be given before six months of age. Above all, breastfeeding is cheap, safe and always available without any preparation, important aspects for many mothers that cannot afford formula feeding especially in low income countries including Cameroon. Information should also be given on further suitable feeding strategies (Ministry of Public Health and UNICEF, 2006). Health staff should inform mothers about the advantages of breastfeeding and how to breastfeed. Complementary foods should be introduced gradually using local affordable and available food (Chiabi et al., 2011). However, despite these recommendations, malnutrition due to inadequate feeding practices is still prevalent in Cameroon. In 2014, it was reported that 20% of children younger than 6 months were breastfed exclusively and that 32% of those under five years old were stunted (National Institute of Statistics, 2015). Socio-cultural factors and poverty were shown to be important underlying factors contributing to inadequate feeding and therefore to malnutrition and child mortality (WHO, 2014; National Institute of Statistics, 2015). Thus, information about cultural beliefs, knowledge, practices and other factors that constitute barriers to adequate infant feeding are needed.

Objective

This study aims to explore infant feeding perceptions and identify factors influencing infant feeding practices in Cameroon.

MATERIALS AND METHODS

Setting

The study was conducted in the rural area of Bandja and the urban areas of Yaoundé and Bamenda, all of which were intentionally selected. Bandja is a rural area located in the western region and has approximately 8000 inhabitants. Yaoundé is the capital of Cameroon and is located in the central region; it has more than 3 million inhabitants. Bamenda is the capital of the north-west region and the third largest city in Cameroon, with more than 1.8 million inhabitants. The socioeconomic characteristics of the rural and the urban settings differs with urban areas having a relatively higher level of education and employment as being located in the industrial area, it attracts migrant workers this permitted us to obtained representative breastfeeding determinants that could be generalised in the whole country.

Study design, data collection and participants

Information about infant feeding was collected through nominal qualitative group interviews using the procedures described by McMillan et al. (2016). In a nominal group, people are gathered together but answer questions individually. Forty-nine women were intentionally selected during the vaccination days at hospitals and interviewed until data saturation, when both the participants and researchers felt that no more information could be obtained. The research tools included six nominal qualitative group interviews, with each group made up of 6 to 10 women. Six group interviews were held to include a total of 49 mothers (6 to 10 per group). These interviews were performed in hospitals without personnel present. A semi-structured interview guide was used. The interviews took on average 60 minutes and were conducted in English, French, Pidgin and the Bandja dialect. Interviews were audio taped and transcribed verbatim (translated into English). The first author led all interviews. Background information was also collected.

Analysis

Data were analysed using qualitative content analysis (Graneheim and Lundman, 2004). Information derived from the transcribed texts was read several times to attain an overall understanding. Meaning units relating to the informants' experiences and thoughts were identified and then condensed. Condensed meaning units were compared to determine differences and similarities and grouped into categories sharing a commonality. Finally, categories were grouped into sub-themes and themes. During the analysis, there was movement between meaning units, condensed meaning units and categories.

Trustworthiness

An open-minded approach and a well-prepared interview guide were used to keep preconceptions contained and to explore and obtain new knowledge. The trustworthiness of the analytical process was strengthened by the joint work of the authors, whose repeated discussions about different cultural backgrounds improved reflexivity throughout the research process (Elo et al., 2014). The inclusion of informants with different backgrounds and living in different social settings increased the credibility of the study. The findings are reinforced by informants' quotations.

Ethical considerations

Ethical approval was obtained with reference number N°060/CNE/SE/2010. Written informed consent was obtained from all mothers before the study. Confidentiality was ensured for all mothers.

RESULTS

Mothers' characteristics and infant feeding practices

The mothers ranged in age between 19 and 38 years

Table 1. Characteristics of mothers in Yaoundé, Bamenda and Bandja, Cameroon

		Yaoundé	Bamenda	Bandja
Number of women		22	19	8
Age (years)[a]		26 (20-36)	26 (19-38)	20 (22-37)
Education	Primary school	4	7	3
	Secondary school	10	12	5
	University	8	0	0
Occupation[b]	Low	9	2	7
	Intermediate	9	17	1
	High	4	0	0
Marital status	Married/co-habiting	17	14	7
	Single	5	5	1
Number of children[a]		2 (1-4)	2.4(1-7)	5(2-8)

[a] Mean (min-max)
[b] Low = housewife, farmer; Intermediate = seamstress, tailor, hair stylist, vendor, secondary school student; High = own business

(Table1).

More than two-thirds of the mothers had at least a secondary school education and more than half had an intermediate occupation. Most of the participants had 1 to 8 children (Table 1), with the youngest aged between 6 days and 15 months.

Breastfeeding was generally agreed upon as the normal and best way to feed infants and was commonly practised. The majority of the mothers gave colostrum to their babies. Most women knew about and seemed generally supportive of the recommendation that mothers spend about six months exclusively breastfeeding. Despite this, the mothers stated that few infants, including their own, were breastfed exclusively for that duration. Water, sugar water and different kinds of foods (liquid 'pap') were usually introduced early, often during the first week. Pap (or 'bouillie') is liquidized corn porridge with a variety of extra ingredients, such as soya beans, groundnut, lemon, oil, crayfish, milk or egg. Half of the mothers had given their children pap or similar foods between 2 and 5 months of age.

Pounded or mashed food was introduced at six months. The mothers had many different methods for infant food preparation, usually including corn fufu (sticky maize porridge) and okra sauce with crayfish, pounded potatoes with beans and carrots, cocoyam pudding and groundnut soup. When resources were limited, fruit, milk products (milk, yoghurts and cheese), meat, fish and egg were not always given.

All of the mothers recognized the importance of a gradual transition from breastfeeding to family foods. Most mothers stated a total breastfeeding duration of between one and two years as suitable.

The qualitative content analysis resulted in one main theme: 'Complex interaction of cultural beliefs, tradition, economy and community norms influencing infant feeding,' and four sub-themes: 'Health aspects of breastfeeding', 'Cultural beliefs, tradition and modernity', 'Economic effects on infant feeding on different levels', and 'Community norms', all of which included several categories (Table 2).

Health aspects of breastfeeding working in two directions

Breastfeeding seen as positive and protective

Breastfeeding was described by all women as preferable to infant formula because of the nutritional content of the breast milk; the positive effects on infant health, growth and intellect; and its affordability and safety.

Some also mentioned that breastfeeding could have positive effects on the relationship between the mother and the child. Mothers from Yaoundé also mentioned advantages for the mother through breastfeeding, e.g., that it worked as a contraceptive and could protect them from breast cancer.

Most mothers saw breastfeeding as the cheapest and healthiest option for feeding infants. A mother who could stay at home and breastfeed was considered able to feed the infant better than a mother who had to leave the infant during school or working hours. Breast milk was thought to be clean and to not contain any microbes.

Breastfeeding could sometimes be negative and harmful

On a few occasions, breastfeeding was mentioned in negative terms. The majority of the mothers perceived disease to be a common obstacle to breastfeeding and generally stated that breastfeeding could be harmful to the infant if the mother was sick. If the mother had a contagious disease (especially HIV), it was considered best not to breastfeed in order to avoid transmitting the disease to the infant. When the infant carried the disease, the mothers believed that infant formula and other supplements should be avoided. Breastmilk was considered the best option in this situation, both nutritionally and hygienically.

One woman said that exclusive breastfeeding for six months could be somewhat of a punishment for the infant if it did not fulfil the infant's needs.

Table 2. Themes and categories for infant feeding perceptions and practices in Yaoundé, Bamenda and Bandja, Cameroon.

Theme[a]	**Complex interaction of cultural beliefs and tradition, economy and community norms influencing infant feeding**			
Sub-themes[b]	**Health aspects**	**Cultural beliefs and tradition**	**Economy**	**Community norms**
Categories[c]	Breastfeeding seen as positive and protective	Mixed view on colostrum	Money can affect mother's nutritional status	Children are women's responsibility
	Breastfeeding could sometimes be negative and harmful	Tradition and modernity	Money gives a choice	Father and baby are rivals
		Important to breastfeed, but not too long	Mother's work affects feeding possibilities	Breastfeeding makes women less attractive
		Breast milk can be destroyed		

[a] Themes were derived by grouping sub-themes.
[b]Sub-themes were derived by grouping of categories.
[c]Categories were derived by grouping meaning units from interviews.

Cultural beliefs, tradition and modernity

Cultural beliefs and modernity

Breastfeeding was recommended by health staff, and all the mothers were told at the hospital to exclusively breastfeed for six months. One of the women described how midwives encouraged and even forced women to breastfeed after delivery.

Most of the mothers gave colostrum to their babies because they were told at the hospital that it was important due to its nutritional value and ability to make the infant strong. Mothers with low education levels and a low occupation in Yaoundé and Bandja mentioned that colostrum helped in "*cleaning the infant's stomach*", and mothers from Bamenda and the Bandja village mentioned the content of antibodies and immunological properties as important. However, there were also some poorly educated women with a low occupation in Yaoundé and Bandja who believed that colostrum was bad and that one should wait for the "good milk" to come, i.e., the white, mature milk: "*You can't give the first yellow milk. You throw it away because it's not good for the baby. You should wait until the good comes"* (Bandja).

For some women, there seemed to be a conflict between traditional views and the recommendations from the doctors: "*We give breast even if the milk cannot come out, even if the milk is yellow and not completely well done. The doctor says that this milk is rich in nutrients*" (Yaoundé).

A situation described by all women was that, after delivery, the milk sometimes took time to come. If the mother discarded the colostrum or if the milk took time to come, a common option was to give plain bottled water or water with sugar/honey:"*First, I gave water with glucose, because the milk did not come out and only after that breastmilk"* (Yaoundé).

Tradition and modernity – competitors and/or partners

When seeking advice, two alternatives were presented to the women: modern or traditional medicine. It was clear that the advice given by the medical staff was well received, although not always followed by the mothers. Another option was to get traditional treatments, often involving different herbs. This alternative could also be provided at the hospital as a complement to medical treatment.

Cultural beliefs, community norms

The women generally felt that people in their surroundings encouraged them to breastfeed, especially in the beginning, and that breastfeeding was perceived as logical, normal and a sign of love. However, many said that if breastfeeding went on for too long (e.g., more than a year or when the infant could walk), it was considered excessive and was not positively perceived. The women said that children who were breastfed too long were often seen as capricious, irresponsible, dependent, and stuck to their mother. Some said that people might question the mother's reasons for the prolonged breastfeeding: "*Maybe the mother wants sexual pleasure*". Some women revealed that sometimes people could physically remove the breast from the mouth of an older infant in order to prove their point that the infant was too old for breastfeeding.

Beliefs and tradition

There are some common superstitions in Cameroon about breastfeeding, e.g., that breastmilk can be destroyed by

"bad people", some foods (bush meat), traditional or modern medicine, and by sexual intercourse and pregnancy. The women mentioned these beliefs, some of which they believed in themselves and some of which were more often described as old-fashioned ideas. When someone stopped breastfeeding due to a curse or other reasons, modern medicine had to be complemented by traditional methods.

Economic effects on infant feeding on different levels

Money can affect a mother's nutritional status

Most mothers did not believe that economic status influenced breastfeeding, although there were mothers from all settings and levels of education who saw a connection between the nutritional status of the mother and the composition of the breastmilk. They believed that mothers who could not afford to buy a variety of foods had lower amounts of nutrients in their milk; hence, their infants could suffer from malnutrition or not grow as expected despite being fed according to recommendations. Women in good economic conditions were also able to go to the medical centre or hospital more often for advice about infant feeding, while others were hindered by insufficient money and/or lack of time.

Money gives a choice

It was believed that women in good economic conditions could choose to give infants formula instead of breastfeeding. The mothers with high education in Yaoundé all agreed that breastfeeding was best for the baby, but they also mentioned that they and their friends, women with good resources and high educational attainment, chose infant formula to 'show off' or to call attention to their good economic status. Some of them also mentioned that they liked to feed their babies like European women or 'white women'.

Infant formula was otherwise mostly described as an option if the mother could not breastfeed at all. It was, however, seen as problematic because poor hygiene could threaten the health of the infant, and its high cost could make it difficult to afford enough food for the infant:"*Infant formula is not good because it is expensive. This is dangerous to the baby as he or she will starve*" (Bamenda).

Economic status was generally thought to have a larger effect on later feeding. Having money made it possible to give varied complementary foods and bottled mineral water rather than filtered or boiled water from taps or rivers. Some mentioned that prolonged breastfeeding could be due to strained circumstances, leaving the mother no choice but to breastfeed, as it could be difficult or impossible to afford sufficient complementary foods for the infant's needs. On the other hand, women from all educational levels believed that only a small amount of money would be needed to buy appropriate foods at the local market when introducing complementary food.

Mother's work affects feeding possibilities

It was common for the mothers to have commitments such as school or work that could affect infant feeding. Some women felt torn between the need to breastfeed and these other commitments. One woman said, "*I started school when my daughter was four [months] and she was breastfed, so it was not easy to go to school and to come back at six thirty and my breast were big and sometimes milk stained my clothes, so you are forced to stay at home and it is like a jail, so I cannot prioritise breastfeeding to a hundred percent"* (Yaoundé).

Community norms

Children are women's responsibility

In Cameroon, women generally carry most of the responsibility for the children. Marriage was not seen as influencing infant feeding very much. It was rather the attitude and involvement of the father that was important, whether married or not: "*The child is the woman's child. Even if you are married the husband may not take his responsibility*" (Yaoundé).
The role of the father was considered to be mostly concerned with financial support.

Father and baby are rivals

Even when the father did provide economic support for the family, he could have a negative influence on the feeding. When asked about obstacles to breastfeeding, the father of the child was frequently mentioned. A few women felt that the father did not want to share a bed with the infant for too long, preventing the infant from breastfeeding on demand during the night.

There was also an element of jealousy described: sometimes the man did not want his wife to expose her breasts in public or he felt neglected, and the infant could suffer from the father's jealousy:"*Some men think forbidding their wives from breastfeeding is normal because the woman belongs only to them*" (Yaoundé).

Breastfeeding makes women less attractive

In all groups, women had concerns that their partner would no longer be attracted to them and would leave if their breasts "*got saggy*" from breastfeeding. Many mentioned that they had heard of women who did not breastfeed for fear that it would encourage their husband to look for another woman. Some women said that men complained that breastfeeding smelled bad.

Women from all educational levels reported that many of their friends had stopped breastfeeding to avoid domestic conflict. One woman strongly expressed her opinion against this: "*No one can discourage women who like their baby from breastfeeding. If you love your children, you don't listen to advice from other people"* (Yaoundé).

DISCUSSION

The most important finding in the present study was that, despite a generally positive attitude towards breastfeeding and largely adequate knowledge about feeding recommendations, few mothers complied with the recommendations due to cultural beliefs, traditions, community norms and economic factors.

All women practised breastfeeding, although with different timing and duration. Most reported a total duration of between one and two years, consistent with earlier surveys (Ministry of Public Health, 2009). The pride connected to motherhood and breastfeeding seemed to shift to a disgrace when, in the eyes of society, breastfeeding went on for too long. Some women especially those in the rural areas and those with low level of education expressed a concern that the duration of breastfeeding could affect the social development of the child. This meant that, even if the mother wanted to continue breastfeeding, it was likely that she was socially influenced to stop earlier because community norms.

Providing colostrum was common and acceptable among almost all of the mothers, although some women in the rural areas and those with low level of education, expressed their doubts. A few even believed that colostrum is an immature or dirty secretion and discarded it. This practice of not giving colostrum is disappearing but has been common in Cameroon (Pemunta and Fubah, 2015) and neighbouring countries (Wuehler and Nadjilem, 2011).

Most mothers gave their babies water within the first few days because "milk did not flow", putting the infant at risk for disease through contamination, as clean water was not always readily available. Affluent women gave their babies bottled water, while those with poor economy used filtered or boiled water from the tap or rivers. The water can be unsafe in itself, especially after storage (Clasen 2014), or due to the utensils or hands used when feeding the infant. Child mortality and morbidity because of infections and diarrhoeal diseases due to unsafe water and poor hygiene are still highly prevalent in Cameroon and neighbouring countries especially among those with poor economy (Tambe et al., 2015; Pemunta and Fubah, 2015). Almost two-thirds of Cameroonian women deliver in a health facility and stay 2 to 3 days after delivery (National Institute of Statistics, 2015). It is crucial that infants are not given water as part of a hospital routine, as this gives a "seal of approval" to the custom.

Most of the mothers participating in the study did not practice exclusive breastfeeding. Despite a strong campaign for exclusive breastfeeding (Ministry of Public Health and UNICEF, 2006), the 2009 World Breastfeeding Trends initiative (WBTi) in Cameroon found low rates of exclusive breastfeeding (Ministry of Public Health, 2009), consistent with other African countries (WHO, 2014). Complementary foods were introduced early, as is the tradition in Cameroon especially in the rural area of Bandja and among those with low level of education (Mananga et al., 2014; National Institute of Statistics, 2015). Mothers assumed that an infant crying after breastfeeding indicated hunger. Concern about milk supply is one of the most common reasons for introducing infant formula in many countries (Chiabi et al., 2011; Clayton et al., 2013, Zhang et al., 2015; Mokori et al., 2016). Another concern is the quality of the breastmilk if the mother is malnourished. Though it is true that the composition of the milk can vary according to the mother's nutrient intake, when the mother is moderately malnourished, it is better to continue breastfeeding and not give infant formula (Stuebe et al., 2009). As in other research from Cameroon, pap was the first complementary food (Chiabi et al., 2011) and was mainly based on maize flour, sometimes with soya beans but often without meat, fish or eggs due to the high costs of these foods. In fact, only 43% of infants 6 to 12 months of age in Cameroon get appropriate amounts of animal protein food for optimum growth and health, and the prevalence of iron deficiency ranged between 63-68.4% % among children (WHO, 2015; Engle-Stone et al., 2013).

It is clear that increased food diversity among children in Cameroon would be beneficial to their health. There is a need for appropriate food preparation guidelines for healthy infants in Cameroon. Studies conducted in neighbouring sub-Saharan countries advised that all mothers/parents need to be educated about how to cook safe and nutrient-dense complementary food, measures that are already being applied in the Sahel region (Wuehler et al., 2011; Wuehler and Ouedraogo, 2011; Pemunta and Fubah, 2015).

While women with poor resources breastfed and gave traditional food to their infants, affluent women often gave imported formula or foods, which was perceived by some mothers as superior to breastfeeding and traditional local foods. Affluent mothers are influenced by modernity and Western food, and they can afford imported formula/food that are available only in urban areas. Using local food for infants is recommended in Cameroon, as it is cheaper than imported food. In the present study, affluent women and those with high level of education received more information and were also able to afford a greater variety of complementary food, clearly showing an economical or educational gradient in infant feeding in Cameroon, as described earlier (Pemunta and Fubah, 2015).

If the mother had a contagious disease, the women stressed that it was appropriate not to breastfeed in order to avoid transmitting the infection. There are, however, very few diseases for which no longer breastfeeding is the best course of action, and it is important that healthcare personnel are clear in their advices to mothers. According to the regulations from the Ministry of Public Health and UNICEF (2006), the only diseases where cessation of breastfeeding should be advised are HIV, tuberculosis and hepatitis B and C. In all other cases, mothers should be educated and encouraged to continue breastfeeding. For HIV positive mothers, it is advised to exclusively use replacement infant formula only if the conditions for formula feeding are feasible, acceptable, accessible, affordable, sustainable and safe. Employed mothers or

those who go to school are distanced from the infant to a greater extent than mothers working at home or in nearby fields. In our study, most rural women worked on their own farm, which enabled them to bring the infant with them. This might have had an effect on exclusive breastfeeding, as women had to walk long distances to and from the farm, spending long hours away from home. In addition, Mothers working away from the home felt torn between commitments, juggling the traditional role as a mother with that of a modern woman. It was reported that working status can prevent breastfeeding (Khassawneh et al., 2016). A period of maternity leave longer than the present three months could help to improve the duration of exclusive breastfeeding in Cameroon. The WBTi recommends that working women should be educated on breastmilk expression, milk preservation techniques and the use of baby feeding cups so that they have a constantly available supply of breastmilk (Ministry of Public Health, 2009). Some mothers revealed that, fathers would be jealous or uncomfortable when they breastfed, and some women were worried that if their breasts fell because of breastfeeding, the man would look for other women. Male participation in antenatal meetings could increase their knowledge about breastfeeding and the need to provide infants and mothers with appropriate resources, food and support. This idea of considering men in regard to promoting breastfeeding in Cameroon has been previously suggested (Kakute et al*.,* 2005; Pemunta and Fubah, 2015).

The influences of beliefs, community norms, tradition, education and economic status on infant feeding found in the present study can be transferred to other similar settings.

Conclusions and policy recommendations

The short duration of exclusive breastfeeding and the poor food diversity during complementary feeding due to strong beliefs, community norms and tradition were the main problems. It is necessary to strengthen the position of women, increase the period of maternal leave, provide sustainable and practical education for both parents about the implementation of breastfeeding, and make available good and local complementary food. Education and information about the amount and quality of food given to infants should be appropriate and provided with regards to socio-economic and cultural factors.

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Conflict of interest

The author declares that he has no conflict of interest.

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