

Research Article

Optimal Breastfeeding Practices in Muya Health Zone, Mbujimayi Town, Democratic Republic of Congo

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Received: March 18, 2024

Accepted: April 09, 2024

Published: April 18, 2024

Abstract

The optimal breastfeeding practices analysis in Muya health zone, Mbujimayi town/Democratic Republic of Congo (DRC) study aimed to determine the profile of optimal breastfeeding and, the causes of its early discontinuation. It was a cross-sectional analytical study of 80 breastfeeding women conducted over 3 months, from July to October 2023. It revealed that 85 percent of infants were put to the breast within one hour of birth; the average age for introducing supplementary feeding was 4.08 ± 0.767 months; 40 percent of infants were continuously breastfed; the average age for weaning was 11.50 ± 5.664 months; 75 percent of newborns received colostrum after birth, and 65 percent of infants were introduced supplementary feeding between 3 and 5 months of age. The breastfeeding discontinuation causes were mothers' poor knowledge of the age at which complementary food should be introduced [OR] 6.603 and low monthly household income [OR] 1.045.

Keywords: Breastfeeding, Optimal, Discontinuation, Supplementary Feeding.

1. Introduction

Breastfeeding is the best way to provide ideal nutrition for infant growth and development. Breastfeeding from birth can reduce infant mortality by 13%, and it is estimated that the lives of 1.2 million children could be saved each year worldwide through this practice [1]. According to UNICEF, only 46% of children worldwide continue to breastfeed for up to 23 months. This is a drop on previous years (74%), yet the first two years of life are decisive in improving a child's future [2].

In low-income and middle-income countries, only 37% of children younger than 6 months of age are exclusively breastfed [12]. Trends in breastfeeding practices in Africa show several figures. In the face of declining breastfeeding practices in Morocco in 2019, only 2.6% of children are weaned by age 2. As a result of this low proportion, milk insufficiency is the main reason for early weaning [3]. Dembele's study in Mali in 2019 showed that mixed breastfeeding is practiced in only 1.90% [4] and that of Toe in 2015 reveals that children weaned early represent 64.6% and among the reasons given, pregnancy represents 46.5% of the reasons for ab lactation of the child. This makes the problem even more worrying in this part of the continent [5].

In Madagascar, the permanent breastfeeding discontinuation is also a public health problem. The majority of women, i.e. 16.13%, stop breastfeeding before 24 months, and the reasons for this are the child's age (child too old), overworked mothers, the mother's illness, advice from neighbors and the child's diarrhea [6]. In the Democratic Republic of Congo (DRC), the MICS-Palu study, conducted in 2017 and 2018, indicates that only 50.1% of children are breastfed until the age of 2 and 81.7% of children have already received food other than breast milk between 6 and 8 months without being breastfed. Note that this practice is more frequent among children whose mothers have a lower level of education and without any level of education [7].

In Kasai Oriental, despite the advantages of breastfeeding, practices are sub-optimal in this region of the country. Many children do not start breastfeeding early enough and stop being breastfed too soon, as MICS-Palu 2017-2018 survey still reveals: continuous breastfeeding at 2 years of age represents 67.3%. A look at

the markers of continuous and exclusive breastfeeding and weaning practices shows that there is a real lack of available evidence on the issue in the Muya health zone, in the town of Mbujimayi. The documents consulted at the central office of this health zone show that the issue is certainly addressed, but often in a lapidary manner, without the possibility of answering several questions about breastfeeding in this health entity.

These questions include the rate of exclusive breastfeeding, the rate of continuous breastfeeding and the potential factors interfering with the discontinuation of breastfeeding. Assuming that rumors and poor knowledge of optimal breastfeeding are at the root of early and permanent cessation of breastfeeding in the Muya health zone, we undertook this research.

2. Materials and Methods

2.1. Study Setting

The study was carried out in the urban health zone of Muya, one of the 519 health zones of the DRC health system, located in the town of Mbujimayi, in the province of Kasai Oriental in the Democratic Republic of Congo (DRC). The health zone serves 419636 residents over an area of 27 km², divided into 19 health areas with 24 health facilities, including the Muya general referral hospital.

2.2. Type of Study and Sample

The study was of the cross-sectional analytical type, with the study population consisting of mothers of children aged between 6 and 23 months. A sample of 80 breastfeeding women was calculated (ENA for SMART) and drawn using a two-stage survey in 30 clusters.

2.3. Data Processing and Analysis

Data were collected in compliance with ethical principles (confidentiality and anonymity), with informed consent sought from participants. Using a programmed smartphone questionnaire, data transferred to the server were collected, cleaned in Microsoft Excel, and processed using the SPSS 29 software.

3. Results

3.1. Socio-Demographic Characteristics of Individuals

Table 1. Distribution of cases by household socio-demographic characteristics (N=80).

| Variables | Modalities | Frequency | % |
|---|---|-----------|------|
| Gender of household head | Female | 20 | 25.0 |
| | Male | 60 | 75.0 |
| Size of household | Average: 4.50±1.253 [4.24–4.76] | | |
| Age of head of household (years) | 26 to 30 | 24 | 30.0 |
| | 31 to 35 | 36 | 45.0 |
| | 35 to 40 | 4 | 5.0 |
| | 41 to 45 | 8 | 10.0 |
| | 51 to 55 | 8 | 10.0 |
| | Average: 37.46±7.707 [35.48–39.67] | | |
| Level of education of head of household | Not enrolled | 4 | 5.0 |
| | Primary | 8 | 10.0 |
| | Secondary | 60 | 75.0 |
| | University | 8 | 10.0 |
| Age of mother (years) | 19 to 23 | 16 | 20.0 |
| | 24 to 28 | 52 | 65.0 |
| | 29 to 33 | 12 | 15.0 |
| | Average: 26.08±4.067 [24.89–27.12] | | |
| Mother's level of education | Not enrolled | 8 | 10.0 |
| | Primary | 20 | 25.0 |
| | Secondary | 52 | 65.0 |
| Main livelihood of household | Crafts (sewing, carpentry, knitting, masonry, etc.) | 16 | 20.0 |

| | | | |
|---|--|----|-------|
| | Street seller of small food products, etc.) | 12 | 15.0 |
| | Trade | 40 | 50.0 |
| | Civil servant | 12 | 15.0 |
| Monthly household income | Average: 210769.23±91219.325 CDF [16351.04–235764.35] Minimum: 100 000 CDF; Maximum: 360 000 CDF | | |
| Household income and satisfaction | Good | 8 | 10.0 |
| | Not enough (too little) | 40 | 50.0 |
| | Not at all sufficient | 32 | 40.0 |
| Relationship between respondent and child | Child's mother | 80 | 100.0 |

The socio-demographic characteristics of the individuals in our series shows that most heads of household are male (75%), having mainly attained secondary education (75%) with an average age of 37.46±7.707 years, while the mother of the infant had an average age of 26.08±4.067 years and mainly secondary education (65%). The household average size was 4.50±1.253 people, and trading was the main source of livelihood for 50% of households, with an average monthly income of 210769.23±91219.325 Congolese francs. This income is considered insufficient by 50% of households.

3.2. Breastfeeding Practices and Profile

The results relating to breastfeeding practices and profile are presented in Tables 2, 3 and 4 below.

Table 2. Breastfeeding practices (N= 80).

| Variables | Modalities | Frequency | % |
|---|---|-----------|------|
| Breastfeeding within one hour of birth (n=68) | Immediate or less than an hour | 56 | 82.4 |
| | Between 1 and 24 hours | 12 | 17.6 |
| Baby receives first milk (colostrum) | Child who received colostrum | 60 | 75.0 |
| Receipt of water or other liquid after birth | Child given water or other liquid after birth | 16 | 20.0 |
| Children fed in the previous 24 hours (n=32) | | 32 | 40.0 |
| Frequency of breastfeeding (n=32) | 1 to 3 times | 4 | 12.5 |
| | 4 to 5 times | 8 | 25 |
| | 6 to 8 times | 8 | 25 |
| | 8 times or more | 12 | 37.5 |
| Receipt of other foods besides breast milk (n=64) | Child receives no other food | 8 | 12.5 |
| | Child receives other foods | 56 | 87.5 |

Immediate breastfeeding within one hour of delivery was practiced by 82.4% of mothers, and 75% of children received colostrum, while 20% of children received water or another liquid after delivery. Only 32 children (40%) had been breastfed in the 24 hours prior to the survey, 37.5% had been breastfed 8 or more times, and 87.5% of children were already receiving other foods apart from breast milk.

Table 3. Breastfeeding profile (N= 80).

| Variables | Modalities | Frequency | % |
|--|--|-----------|------|
| Number of children fed breast milk after delivery | Child who received milk after delivery | 68 | 85.0 |
| Age of introduction of supplementary feeding | 3 to 5 months | 52 | 65.0 |
| | 6 months old | 28 | 35.0 |
| | Average: 4.08±0.767 [3.85–4.29] | | |
| Continuity of breastfeeding (child continues to be breastfed at the time of our study) | The child continues to breastfeed | 32 | 40.0 |
| Age of total weaning (n=48) | Average: 11.50±5.664 [4,868-6.253] | | |

After delivery, 85% of infants were fed breast milk. The introduction of supplementary breast milk before six months occurred on average at 4.08±0.767 months. The rate of continuous breastfeeding was 40%, with weaning occurring on average at 11.50±5.664 months.

Table 4. Mothers' attitudes to breastfeeding.

| Variables | Modalities | Frequency | % |
|---|--|-----------|-------|
| Reasons for not breastfeeding within one hour of birth (n=12) | Mother did not produce milk after delivery | 4 | 33.3 |
| | Mother too weak or ill | 4 | 33.3 |
| | Lack of food | 4 | 33.3 |
| Reasons for giving colostrum (n= 60) | Colostrum promotes baby's growth | 8 | 13.3 |
| | Colostrum protects the child against disease | 44 | 73.3 |
| | Because the health worker or a family member recommended I give it to the child | 4 | 6.7 |
| Reasons why mother gave water or other liquid after delivery (n=16) | Because of tradition | 8 | 50.00 |
| | Lack of breast milk | 4 | 25.00 |
| | Don't know | 4 | 25.00 |
| Reasons for not giving colostrum (n=20) | I was unable to breastfeed | 8 | 40.00 |
| | Bad milk | 8 | 40.00 |
| | Don't know | 4 | 20.00 |
| Reason for early weaning (n=48) | Age (child already grown) | 8 | 16.7 |
| | Other (the child is satisfied with the maize and manioc flour paste, the mother is not used to breastfeeding until this age) | 8 | 16.7 |
| | Insufficient milk | 4 | 8.3 |
| | New pregnancy | 28 | 58.3 |

Mothers' reasons for not breastfeeding within the first hour after giving birth included not having produced milk after delivery (33%), being too weak or ill (33%) and lack of food (33). However, most mothers (73%) believed that colostrum protects the child against disease. The results also show that 50% of mothers had given water or another liquid to the child after delivery because of tradition, and those who had not given colostrum claimed that the mother was unable to breastfeed because of a caesarean section (40%), poor milk (40%) and the others gave various reasons. A new pregnancy was a major reason for early weaning (58.3%).

3.3. Analysis of Breastfeeding Discontinuation

Factors such as monthly household income, level of education of head of household, gender of head of household, early administration of water or other liquid to child after birth, child already receiving other foods, knowledge of age of introduction of complementary feeding, knowledge of the child's weaning age, prenatal consultation (ANC) follow-up and introduction of complementary feeding were subjected to a chi-square test (5% chi-square) with the dependent variable "breastfeeding discontinuation".

Table 5. Association between socio-demographic characteristics and continuity of breastfeeding.

| Potential cause | X ² | p-value | Significance |
|---------------------------------------|----------------|---------|--------------|
| Monthly household income | 11.250 | 0.01 | * |
| Mother's age | 0.539 | 0.463 | - |
| Education level of head of household | 9.412 | 0.002 | * |
| Household's main means of subsistence | 4.183 | 0.041 | - |
| Mother's level of education | 0.147 | 0.1702 | - |
| Gender of head of household | 4.444 | 0.035 | * |

Monthly household income, level of education of the head of household, main means of household subsistence ($p < 0.05$) would potentially be factors associated with whether or not breastfeeding continued.

Table 6. Association between breastfeeding continuity and breastfeeding practices.

| Potential factors | X ² | p-value | Significance |
|--|----------------|---------|--------------|
| Breastfeeding within one hour of birth | 0.261 | 0.609 | - |
| Colostrum reception | 0.000 | 1.000 | - |
| Child received water or other liquid after birth | 9.412 | 0.002 | * |
| Child receives other foods | 13.333 | 0.000 | * |
| Knowledge of the advantages of exclusive breastfeeding for the child | 1.875 | 0.171 | - |
| Knowledge of the benefits of exclusive breastfeeding for the mother | 0.370 | 0.543 | - |
| Knowledge of age of introduction of complementary feeding | 11.868 | 0.001 | * |
| Knowledge of the child's weaning age | 13.333 | 0.000 | * |
| ANC follow-up | 6.875 | 0.009 | * |
| Introduction of complementary feeding | 17.778 | 0.000 | * |

Perceptions and practices of infant feeding (introduction of complementary food before 6 months, no ANC follow-up, administration of water and other foods) were significantly associated with breastfeeding continuity ($p < 0.05$).

Searching for the association between the dependent variable and the independent variables, according to logistic regression led to the following results:

Table 7. Presentation of logistic regression data.

| Potential causes | X ² | p | OR | 95% CI | |
|---|----------------|-------|-------|--------|--------|
| | | | | Low | Upper |
| Education level of head of household | 9.412 | 0.998 | 0.000 | 0.000 | - |
| Monthly household income | 11.250 | 0.004 | 1.045 | 0.131 | 8.346 |
| Introduction of supplementary feeding | 17.778 | 0.037 | 0.113 | 0.015 | 0.878 |
| Knowledge of age of introduction of complementary feeding | 11.868 | 0.164 | 6.603 | 0.463 | 94.128 |
| Knowledge of child's weaning age | 13.333 | 0.998 | 0.000 | 0.000 | - |
| Prenatal consultation follow-up | 6.875 | 0.067 | 0.145 | 0.018 | 1.149 |

Factors interfering with breastfeeding discontinuation among breastfeeding women were monthly household income [OR] 1.045 and knowledge of the age of introduction of complementary feeding [OR] 6.603.

4. Discussion

4.1. Socio-Demographic Characteristics of Lactating Women in the Muya Health Zone

The individuals in our series come from households with an average size of 4.50 ± 1.253 persons [4.24-4.76]. Trade is the main source of livelihood for these households, with an average monthly income of 210769.23 ± 91219.325 Congolese francs (CDF). This result is almost like that found in the MICS 2017-2018 survey showing that the average household size was 4.8 [7]. It is different to that of Sidibe in his study of knowledge and practical attitudes of mothers of children aged 6-23 months on food diversification at the Sibiribougou CSCOM who found that mothers of children were majority housewives in 67.80% of cases [10]. This breastfeeding woman had an average age of 26.08 ± 4.067 years [24.89-27.12] and 65% secondary education. This result is almost like that found by Chiabi et al. in their study of dietary diversification in infants aged 6 to 24 months at the Garoua regional hospital in Cameroon in 2020 showing that the average age of the mothers was 27.2 years (± 6.5) [11].

4.2. The Profile of Optimal Breastfeeding in the Muya Health Zone

Our results revealed the following profile of optimal breastfeeding:

- ✓ 85% of infants were put to the breast within one hour of delivery.
- ✓ An average age of introduction of supplementary feeding of 4.08 ± 0.767 months.
- ✓ 40% continuous breastfeeding.
- ✓ A mean weaning age of 11.50 ± 5.664 months.
- ✓ Three out of four newborns receive colostrum from birth.
- ✓ One mother in two gives water or another liquid to her child after delivery, because of tradition.
- ✓ Mothers who do not give colostrum say they are unable to breastfeed following a caesarean section, or suspect the milk is bad (40%) and for other reasons.
- ✓ A new pregnancy is a cause of early weaning in 58.3% of cases.

These results differ slightly from those found by the MICS 2017-2018 survey, which reveals the following profile: a rate of putting children to the breast within one hour of delivery of 46.9%; an average age of introduction of supplementary feeding of 2.8 months and a proportion of exclusive breastfeeding of 53.5% for the country and 55% for the province of Kasai Oriental; a proportion of continuous breastfeeding of 50.1% and an average weaning expressed as a percentage of 4.9% for the province of Kasai Oriental [7]. The study found that breastfeeding women did not latch on within an hour of giving birth, on the pretext of not having produced milk after delivery 33.3%), being too weak or ill (33.3%) and not having enough to eat (33.3%). The majority of breastfeeding mothers (73%) expressed positive perceptions of colostrum, recognizing its ability to protect the child against disease.

Our results differ slightly from those found by Toe in 2015, who indicate that early weaned children represent 64.6%, and among the reasons given, pregnancy represents 46.5% of the reasons for child ab lactation [5]. These figures differ significantly from those obtained by Halima and Abdourahamane in their study conducted in Niger, where they found an average proportion of mothers (48%) who put their children to the breast early, within one hour of delivery; some mothers initiated breastfeeding within 24 hours of birth (39%); the same study showed that 11% of mothers waited 48 hours or even 72 hours before putting their child to the breast for the first time, and at the same time, 98% of these children were able to benefit from colostrum [8].

The study by Ben Slama et al. on exclusive breastfeeding and mixed breastfeeding: knowledge, attitudes, and practices of primiparous mothers showed that 41.5% of these women exclusively breastfeed, and 58.5% use artificial milk alone or in addition to breast milk. Among breastfeeding mothers, 43.0% did not breastfeed for the first time until the day after delivery and had no information about colostrum [13].

4.3. Causes of Early Discontinuation of Optimal Breastfeeding in the Muya Health Zone

The dependent variable, discontinuation of breastfeeding, was cross-tabulated with other independent variables, including monthly household income, level of education of head of household, sex of head of household, child having received water or other liquid after birth, child already receiving other foods, knowledge of age of introduction of complementary feeding, knowledge of age of child weaning, ANC follow-up and introduction of complementary feeding, in order to investigate the association.

Because of their level of significance ($p < 0.05$), these variables were found to be determinants of breastfeeding discontinuation in the Muya health zone, Mbujimayi. They are:

4.3.1. Monthly Household Income [OR] 1.045

To confirm this determinant, Table 5 of our results clearly reveals that many households (90%) indicate that their monthly income is at the limit and is not enough (50%), and for others (40%) it is insufficient. This places the household, in general, and the mother of the child in a state of vulnerability that would interfere with the mother's discontinuation of breastfeeding. This corroborates Manderson and Liamputtong who found in their study that social and cultural factors such as lack of family support or social pressure, contribute to a high rate of breastfeeding discontinuation after six months, with an average of 45% of women concerned [9].

4.3.2. Knowledge of the Age of Introduction of Complementary Feeding [OR] 6.603

This determinant is further supported by the widespread practices in this study setting, according to which 65 percent of mothers introduce supplementary feeding to infants between 3 and 5 months of age. As we know, these practices are not in harmony with World Health Organization (WHO) standards promoting exclusive breastfeeding up to 6 months of age. Moreover, only 40 percent of infants aged between 6 and 23 months continued to be breastfed during the survey we carried out among breastfeeding mothers. This

indicates a real trend away from not only exclusive breastfeeding, but also continuous breastfeeding. All in all, the presumption that rumours and poor knowledge of optimal breastfeeding are behind the early cessation of breastfeeding in the Muya health zone has been confirmed.

5. Conclusion

The breastfeeding profile in the Muya health zone is characterized by an 85 percent rate of putting infants to the breast within one hour of delivery, an average age for introducing supplementary feeding of 4.08 ± 0.767 months, a continuous breastfeeding rate of 40 percent, an average age for weaning infants of 11.50 ± 5.664 months, and colostrum administration to 75 percent of newborns from birth.

Analysis of the trend towards early discontinuation of optimal breastfeeding among mothers in the Muya health zone incriminated mothers' knowledge of the age of introduction of complementary feeding [OR] 6.603. Lack of knowledge of the optimal age means that the practices widespread in this study area are deviant: 65% introduce supplementary feeding to infants between 3 and 5 months of age, which is not in line with WHO standards. We also noted that only 40% of infants aged 6 to 23 months in the Muya health zone are continuously breastfed. This reflects a tendency to abandon both exclusive and continuous breastfeeding.

In addition to mothers' knowledge, we found that monthly household income [OR] 1.045 was a key determinant of the discontinuation of optimal breastfeeding and most households (90%) found their monthly income borderline insufficient.

6. Recommendations

The main recommendations are to:

- ✓ Put in place policies to support households in strengthening their livelihoods, with a view to helping improve income levels (Action by provincial government and various development stakeholders).
- ✓ Intensify social communication interventions for nutrition, based mainly on the promotion of breastfeeding, with a view to promoting good knowledge of the health, diet, and nutrition of their children (Action by the Muya health zone management team).

Declarations

Acknowledgments: We would like to thank the authorities of the Faculty of Public Health at the Official University of Mbujimayi (UOM) and the Center for Infinite on Well-Being Research (CRIBE) for their support and guidance.

Author Contributions: Both the authors contributed to the conception and design of the work, drafted the manuscript, revised it critically for important intellectual content, gave final approval of the version to be published and agreed to be accountable for all aspects of the work.

Conflict of Interest: The authors declare no conflict of interest.

Consent to Publish: The authors agree to publish the paper in International Journal of Recent Innovations in Academic Research.

Data Availability Statement: The datasets used or analyzed during the current study are available from the corresponding author on reasonable request.

Funding: This research received no external funding.

Institutional Review Board Statement: This study was conducted in accordance with the Declaration of Helsinki and approved by the ethic committee of Official University of Mbujimayi.

Informed Consent Statement: Informed consent was obtained from all subjects involved in this study.

Research Content: The research content of manuscript is original and has not been published elsewhere.

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Citation: Tshitenda Tshimanga Bruno and Badibanga Ntumba Patrice. 2024. Optimal Breastfeeding Practices in Muya Health Zone, Mbujimayi Town, Democratic Republic of Congo. *International Journal of Recent Innovations in Academic Research*, 8(4): 42-49.

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