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*Full Length Research Paper*

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# Relationship between feeding practices and nutritional status of children under the age of two years in Mugunga, Democratic Republic of Congo

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**Malnutrition is the most common childhood nutritional disorder characterized by stunting and wasting children below two years old due to inappropriate feeding practices. Infant and young child feeding practices can improve child survival and promote healthy growth and development. This study aims to assess the relationship between feeding practices and nutrition status of children under two years old in Mugunga, Democratic Republic of Congo. This was a descriptive case study involving a total of 206 women/care givers and their under two years old children who attended MCH clinic at Mugunga Health Centre between June and July 2017 in Mugunga, one of slums surrounding Goma Town, in the East of the DR Congo. Breastfeeding initiation immediately after birth was only 7.3% and just 7.8% of children were exclusively breastfed for the first six months. The main reason for putting an end to child breastfeeding exclusively before six months was that the women observed that the babies remained hungry after breastfeeding session. And the main reason for stopping breastfeeding before two years was as a result of another pregnancy. Fewer children meet the minimum dietary diversity of 5.3% and the minimum acceptable diet of 7.3%. There was a high level of malnourished children compared to the acceptable level. Data analysis shows that the main reason for not meeting the minimum dietary diversity and the minimum acceptable diet were as a result of poverty and lack of knowledge concerning good complementary feeding practices. Our findings show that there is a relationship between feeding practices and nutritional status for children. Thus, there is need for intervention in order to improve feeding practices in Mugunga.**

**Key words:** Feeding practices, breastfeeding, complementary feeding, nutritional status, Mugunga.

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## INTRODUCTION

Infant and young child feeding is a key area to improve child survival and promote healthy growth and development. Inappropriate feeding practices are a major cause of the onset of malnutrition in young children. Children who are not breastfed appropriately have repeated infections, does not grow well, and are almost six times more likely to die at the age of one month than children who receive at least some breast milk (Dos Santos, 2011). From six months onward, when breast

milk alone is no longer sufficient to meet all nutritional requirements, infants enter a particularly vulnerable period of complementary feeding during which they make a gradual transition by eating adult food. The first 2 years of a child's life are particularly important, as optimal nutrition during this period lowers morbidity and mortality rate, reduces the risk of chronic diseases, and fosters better development. The incidence of malnutrition increases during the period of 6 to 18 months of age in most countries, and the deficits acquired at this age are difficult to compensate for later in the child's life. Optimal breastfeeding and complementary feeding is so critical that it could save about 800,000 under 5 children's lives

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every year (WHO, 2014).

## METHODOLOGY

This was a descriptive case study involving a total of 206 women/care givers and their under two year's old children who attended MCH clinic at Mugunga Health Centre in June and July 2017 in Mugunga, one of slums surrounding Goma Town, in the DR of Congo. A random sampling method was used to select study participants using a box of cards of which had a number of Yes and No markers. Every caregiver of an infant or young child 0 - 23 months meeting the eligibility criteria, consenting to participate in the study and picking a yes card have been interviewed.

The sample size of 206 participants was calculated based on Fisher et al. (1998) formula as stipulated by Mugenda and Mugenda (1999). In order to assess feeding practices, a semi-structured questionnaire consisting of closed and open ended questions was used to elicit responses from the study participants based on the WHO standard, IYCF practices assessment questionnaire (WHO, 2008a). Nutritional status of children was assessed by anthropometric methods.

## RESULTS

Many (40.7%) of the respondents were aged 30 years and above while the predominant maternal marital status was married (42.7%). 34.9% of the participants were housewives compared to employed (2.4%). Only 7.3% of the respondents had attended secondary schools compared to 48.5% of the respondents who were confirmed to never go to school. A large percentage (47.1%) of the interviewed mothers/care giver said they live with more than 10 persons in the same house. During the interview, we found out that many families (45.6%) have more than two children below 5 years of age and the predominant way of obtaining food was buying (59.7%) and no food aid was given (0.00%) in that period. Breastfeeding initiation immediately after birth was only 7.3% compared to 62.1% of women who breastfed after 2 h. Many of the children (41.3%) were breastfed 6 to 8 times per day. Just 7.8% of children were exclusively breastfed for the first six months compared to all.

The main reason for stopping exclusively breastfeeding of baby before six months was that women find out that baby continued to be hungry after breastfeeding's session. But the main reason for stopping breastfeeding before two years was because of another pregnancy.

No child has received complementary food after the required time, but most of them received it before the optimum age of six months. Only 5.3% meet the minimum dietary diversity. Almost all the children (93.7%) meet the minimum meal frequency while only 7.3% meet

the minimum acceptable diet. More than half percent of children (60.2%) consumed iron-rich or iron-fortified food the previous day and fewer children (9.2%) were fed with the bottle.

The predominant under-nutrition status among the children was stunting (42.2%) followed by 27.6% then underweight (25.2%).

The results of chi-square test showed that there is a significant relationship between feeding practices and the child nutritional status.

## Discussion

In the present study, socio demographic characteristics results as presented in Table 1 show that a big percent of mother/care giver come from a poor community and live in poverty. According to Table 2 results, the rate of breastfeeding initiation time (7.3%) and the exclusive breastfeeding period (7.8%) remain very low. These findings are supported by other studies in different part of the world which stipulate that the prevalence of initiation breastfeeding time and the exclusive breastfeeding at six months are generally low in developing countries (Roig et al., 2011; Engebretsen et. al., 2007).

In contrast to Sawadogo's et al., (2011) findings; in his study assessing breastfeeding practices in Addis Ababa in which he confirmed that 90% of the children in the study population continued breastfeeding into the child's second year and beyond, in our study data show that a continued breastfeeding rate at two years has highly decreased (7.3%). Table 3 shows that the main reason for discontinued breastfeeding was due to new pregnancy.

Data from this study as presented in Table 4 show a low percentage of children who meet the minimum dietary diversity (5.3%) and also for the minimum acceptable diet (7.3%). This finding is not in contrast to many of data from different study. For example a study conducted to assess dietary diversity of complementary foods and its relationship to micronutrient deficiencies in Mongolia by Lander et al., (2010) found out that most children consumed less than 2 food groups out of the recommended 7 groups. Similarly, Sawadogo et al., (2011) in a study among young children in Burkina Faso found that complementary food diversification was low and limited to cereals.

Nutritional status results as presented in Table 5 confirm that in developing countries in general and in the Democratic Republic of the Congo in particular, child nutritional status remain poor (Do Santos A., 2011).

Evidence from this study in Table 6 showed a relationship between poor feeding practices and poor nutritional status. This is in accordance with many researches conducted in some developing countries. For instance a study by Muchina (2010) in Nairobi found out that stunting remained associated with the mode of

**Table 1.** Sociodemographic characteristics.

<b>Characteristics( n = 206)</b>	<b>N</b>	<b>(%)</b>
<b>Sex of the House hold head</b>		
Male	118	(57.3)
Female	88	(42.7)
<b>Age of the Mother</b>		
<18	46	(22.3)
18-30	76	(37.0)
>30	84	(40.7)
<b>Maternal marital status</b>		
Single	39	(19)
Married	88	(42.7)
Divorced	24	(11.6)
Widowed	55	(26.7)
<b>Occupation</b>		
Housewife	72	(34.9)
Employed	5	(2.4)
Small scale Trading	70	(34)
Casual labour	45	(21.9)
Student	14	(6.8)
<b>Education</b>		
No education	100	(48.5)
Primary	91	(44.2)
Secondary	15	(7.3)
Tertiary	0	(0,0)
<b>House hold size</b>		
<5 peoples	30	(14.6)
5-10peoples	79	(38.3)
>10	97	(47.1)
<b>Number of children below 5years</b>		
0	0	(0,0)
1	28	(13.6)
2	82	(39.8)
3	96	(45,6)
<b>Ways of obtaining food in the family</b>		
Food aid	0	(0.0)
Farming	16	(7.8)
Buying	123	(59.7)
Farming+buying	67	(32.5)

**Table 2.** Breastfeeding practices.

<b>Variable</b>	<b>N</b>	<b>(%)</b>
<b>Initiation breastfeeding time</b>		
Immediately after birth	15	(7.3)
Within two hours after birth	42	(20.4)
After more than two hours	128	(62.1)
The second day after birth	12	(5.8)
Cannot remember	9	(4.4)
<b>Frequency of breastfeeding sessions</b>		
Less than 5 times per day	37	(18)
6 to 8 times per day	85	(41,3)
More than 8 times per day	24	(11.6)
As often as the baby wants	60	(29.1)
<b>Length of time for each breastfeeding</b>		
Less than half an hour	111	(53,9)
Half an hour	32	(15.5)
More than half an hour	13	(6.3)
I don't count	35	(17)
As long as the baby want (Until the baby is satisfied)	15	(7.3)

<b>Duration of exclusive breastfeeding</b>		
≤3 months	17	(8.2)
Between 3 to 5 months	148	(71.9)
Between 5 to 6 months	25	(12.1)
Up to 6 months	16	(7.8)
> 6 months	0	(0.0)
<b>Period intended to breastfeed the Baby</b>		
Up to 6 months	16	(7.8)
7 to 12 months	118	(57.3)
13 to 18 months	57	(27.6)
19 to 24 months	15	(7.3)
> 24 months	0	(0.0)

**Table 3.** Reasons for discontinuation of exclusive breastfeeding or to stop breastfeeding before two years \*.

<b>Variables</b>	<b>N</b>	<b>(%)</b>
Not enough breast milk	22	(10.6)
Baby continued to be hungry after breastfeeding	42	(20.3)
Baby refused breast milk	22	(10.6)
New pregnancy	112	(54.3)
Maternal health problem/deaf	14	(6.7)
I returned to work/business	11	(5.3)
Being pressured to wean the baby	12	(5.8)
Breastfeeding is too tiring	4	(1.9)

\*Mothers'/caregivers were allowed to give more than one response.

**Table 4.** Complementary feeding practices.

<b>Variable</b>	<b>N</b>	<b>(%)</b>
Introduction to solid, semi-solid or soft foods		
Yes	27	(100)
No	0	(0)
Minimum dietary diversity		
Meet	11	(5.3)
Don't meet	195	(94.7)
Minimum meal frequency		
Meet	193	(93.7)
Don't meet	13	(6.3)
Minimum acceptable diet		
Meet	15	(7.3)
Don't meet	191	(92.7)
Consumption of iron-rich or iron-fortified food		
Received	124	(60.2)
Do not received	82	(39.8)
Continued breastfeeding at 2 years and beyond		
Received	15	(7.3)
Don't received	191	(92.7)
Bottle feeding for infant		
Fed with	19	(9.2)
Not fed with	187	(90.8)

The results of chi square test showed that there is a significant relationship between feeding practices and the child nutritional status.

complementary feeding practices among children aged between 12-23 months. Another study conducted in India by Kumar et al. (2006), showed that improper feeding practices was a significant risk factor for wasting and underweight.

## **Conclusion**

Our findings show that there is a relationship between feeding practices and the under nutrition status of children. Thus, there is a need to institute interventions to

**Table 6.** Effects of feeding practices on the nutritional status.

Variable	Wasting		Chi square, p value	Stunting		Chi square, p value
	Present	Absent		Present	Absent	
<b>Exclusive breastfeeding</b>						
< 4 months	39	12	$X^2=84.96$	57	6	$X^2=89.00$
4 to 5 months	12	124	p value :< 0.001	21	96	p value :< 0.001
Up to 6 months	6	13		9	17	
<b>Minimum dietary diversity</b>						
< 1 food group	37	7	$X^2=102.18$	60	10	$X^2=85.24$
2 to 3 food groups	11	132	p value :< 0.001	20	98	p value :< 0.001
≥4 food groups	9	10		7	11	
<b>Minimum meal frequency</b>						
≤2 times	37	9	$X^2=83.92$	63	10	$X^2=93.71$
3 to 4 times	17	93	p value :< 0.001	17	98	p value :< 0.001
>4 times	3	47		7	11	

P-value<0.05 is statistically significant

improve feeding practices in Mugunga especially on initiation breastfeeding time, the period of introduction to complementary food which is in most cases very early, diversification of food used to make complementary food and to encourage mothers to continue breastfeeding up and beyond two years.

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