

**Complementary Feeding at Tikur Anbessa Hospital.**

**A Study on Mothers' Knowledge and Practice**

*Zenit Getahun, MD Boggle Worku, MD*

**Department of Pediatrics and Child Health, Faculty of Medicine**

**Addis Ababa University**

**Abstract**

*A descriptive cross-sectional study on mothers' knowledge and practice related to complementary feeding was conducted in Tikur Anbessa Hospital, Addis Ababa, from September 1<sup>st</sup> to November 30<sup>th</sup>, 2003. A total of 370 mother-child pairs whose children were aged 0-24 months, were included in the study. 53.34% of children were started on complementary feeding before the age of four months. The most commonly used complementary food was milk formula, followed by cow's milk and cereal based gruel in 52.5%, 35.7% and 7.1% of the cases respectively. As believed by the mothers, inadequate supply of breast milk and mother's sickness and /or sickness of the child were the reasons to start complementary feeding. The majority of mothers used a bottle for feeding their children. The study demonstrated inappropriate infant feeding practices, which needs intervention.*

## Introduction

Human milk is the most appropriate of all available milks for the human infant. Breast-feeding is one of the oldest children rearing practice known to mankind. It is the most unique and important event in the lives of both the child and the mother. It is cheaper, always readily available at proper temperature and needs no time for preparation. The milk is fresh and free of contaminating bacteria, has anti-infective properties that protect the infant from infection in the early months. It also may tend to increase the period of infertility after delivery, which is important for birth spacing (1-3).

Introduction of breast milk substitutes in developing countries is often associated with a whole series of problems due to poor environmental water sanitation and inadequate facilities for proper cleaning of bottle and nipples. This is combined with low economic status and prohibitive price leading to frequent dilution of formula. There are several factors adversely affecting breast-feeding practices leading to early complementary feeding. These include an urban way of life, working mothers away from the house to earn additional income, the idea that bottle feeding is modern and better, the loss of confidence or feeling that the child doesn't get sufficient food, the lack of information and support, inappropriate health practices and separation of baby from mother immediately after birth (3-5). According to Ethiopian Demographic and health survey, breast-feeding is nearly universal, showing that 96% of children born in the five years preceding the survey have been breast fed at some time. The proportion of children breastfed at some time ranges from 93% in Addis Ababa to 99% in Harari (6). About 47% were exclusively breast-feeding infants under six months and more than 80% continued breast feeding into the child's second and third year (7).

A study done in the town of Jimma on knowledge and practice of child feeding showed that 98% of children studied were

started with breast-feeding. The median age to start the first complementary diet was 6 months and cow's milk was the first product used in 70% followed by cereal-based gruel in 11.9%. Fifty-seven percent of the children were given the supplementary feeding by bottle. Median duration of breast-feeding was 24 months. Mothers' work, inadequate breast milk and illness of mother were the most frequent reasons given for not breast feeding or early cessation. Children born in health facilities, those with higher income and first borns were more likely to breast feed for less than one year, while unemployed mothers and mothers with low educational level tended to breast feed longer. According the Jimma study, majority of the parents had acceptable knowledge of proper infant feeding (8-9).

A citywide household survey done in Addis Ababa showed exclusive breast-feeding rate of 32 % in those less than four months of age. Timely complementary feeding rate in the age group of six to nine months was 57.4% and 44% were bottle-fed. Only 18% from antenatal clinics, 15% from childcare centers and 19% from postnatal visits got advice on breast and complementary feeding. Maternal grandmothers played a significant role in giving advice on breast-feeding (10). A focus group study in Addis Ababa, on east-feeding found a low level of knowledge of breast feeding and supplementation among mothers. In this same study, survey of hospital delivery practice, as part of breast feeding survey showed that babies delivered by cesarean section and those delivered at night vaginally were given sterile water until roomed in. Such a practice may explain the relatively shorter period of breast-feeding observed in higher proportion of children delivered in health facilities (11). The objective of this study was to assess mothers' knowledge and practice and to explore the factors, which contribute, to mother's complementary feeding practice.

## Materials and methods

This is a descriptive cross sectional study with analytic component to evaluate mother's knowledge and practice of complementary feeding. The study area is Tikur Anbessa Hospital, located in Addis Ababa, Ethiopia. The department of pediatrics and child health in the hospital gives services for child health and also conducts immunization programs. All mothers with children between 0-24 months of age, coming from Addis Ababa, who showed up at regular out patient department appointments high-risk in fan clinic or immunization unit from September 1<sup>st</sup> to November 30<sup>th</sup>, 2003 were included in the study. A total of 370 mother child pairs were enrolled in the study. A detailed structured questionnaire was prepared and pre-tested in similar manner prior to the interview. Mothers/caretakers were asked to give oral consent and then interviewed to obtain general socio-demographic information, current child feeding practice and related issues, by the physicians and nurses who were responsible for the provision of health service at that time. The interviewers were oriented on the content of the questionnaire, giving special emphasis on some questions, which needed further elaboration. Each completed questionnaire was checked for completeness and accuracy by the principal investigator for timely needed corrections to be made. Data entry and analysis were completed using EPI-info version-6 statistical packages. The degree of association with the determinant factors was assessed and statistical significance was defined when p - value was less than 0.05. The department research and publication committee approved the study.

## Results

A total of 370 mothers who have children between the age of 0-24 months and who reside in Addis Ababa were enrolled in the study. The socio-demographic data are shown in Table 1. Twenty three percent of them carried mothers and 43.4% of the single mothers stopped breast feeding their children before six months of age and this difference was statistically significant (P=0.02). Twenty nine percent of mothers who

attended secondary school or less and 14.4% of mothers with higher education stopped breast feeding before their babies were six months of age and this difference was also found to be statistically significant (P=0.02). Twenty two percent of mothers who stayed at home and 23.4% of mothers who worked outside their home stopped breast-feeding their children before six months of age, however this difference was not found to be statistically significant (P=0.72). Fifty four percent of mothers whose monthly income was less than 500 Birr and 45.6% who had a monthly income of greater than or equal to 500 Birr stopped breast feeding their children before six months of age and this proportion was not found to be statistically significant (P=0.18). Ninety three percent of the mothers gave birth at health institutions and 92.2% of them had antenatal care follow up. Only 70% of mothers were counseled on breast-feeding and infant feeding practices during ANC clinics and during immunization of the baby. Mass media and leaflets were stated as source of information in 4% of the respondents. Neighbors and grandmothers also played a role in giving advice. We found that 2.4% of the mothers had never breast fed their children. Of the 301 children who were already started on complementary feeding, 53.5% were younger than four months, 43.2% between 4 - 6 months and 3.3% were beyond 6 months of age (Table 2). The mean duration of exclusive breast-feeding (EBF) was 2.89 months. Of those who were totally weaned, 50.96% were allowed to stop breast-feeding gradually while 40.4% stopped breast-feeding abruptly. Mothers were asked their opinion about the appropriate age for starting complementary feeding and 88.3% said that their children should start complementary feeding between the ages of four to six months while 4.9% said they believed it was before the age of four months. Only 6.2% of the mothers said that complementary feeding should start after the age of six months. The mean duration of exclusive breast-feeding suggested by the mothers was 4.9 months and the mean duration of total breast-feeding suggested by the mothers was 22.9 months (table 3). Breast milk was given as the first feeding in 60%

and 24.3% gave cow's milk based. Cow's milk and plain water or water with sugar was the first item given by 4.2% and 5.4% of them others respectively. Items other than the above listed such as "Abish" water and tea was given in 1.1% of cases. Among mothers who had initiated breast-feeding 47.6% started breast-feeding within 12 hours of birth and 8.4% between 12-24hours of birth and the remaining 40% of them others initiated breast-feeding after 24 hours of birth. Thirty five percent of mothers who weaned their babies reported that their reason for initiation of complementary feeding was that they felt that the child was at the right age to start and 28.6% gave the fact their reason was that they didn't have enough breast milk as a reason. Sickness of the mother and/or sickness of the child was the reason in 14.6% of the respondents and 8.9% gave difficulty because they had to work as their reason. About 5.3% gave child refusal and 5.4% maternal breast problem were given as reasons to initiate Complementary feeding (table 4) the type of complementary food for the majority of mothers (52.5%) was formula milk. About 35.7% of the mothers gave cow's milk alone or in combination with other foods. Seven percent of the mothers used cereal based foods in combination or alone. In only 1.7% of the respondents, fruits and vegetables were used as complementary food (table 5). The complementary food was given by bottle by 54.17% of the mothers, 36.8 % of the mothers used spoons and cups and 7.29% of the mothers used bottles and cups in combination (table 6).

## Discussion

According to Ethiopian Demographic Health Survey 96% of children were breast fed at sometime in their life (6). This is in agreement with the current study, which shows a prevalence of 97.6%. Studies of infant nutrition in developing countries showed prolonged pattern of breast-feeding for 18-24 months and early introduction of supplementary feeding, in the first months of life, to be the usual practice. (1-3) Our study shows a similar pattern to studies done elsewhere in developing countries (1-3).

About 54% of the children started complementary feeding before the age of four months and 97.6% of them were on complementary feeding before they were six months of age in contrast to the expectation of prolonged pattern of breast-feeding. Since six months of age is the earliest recommended age to start complementary feeding, almost all children in this study were initiated on complementary feeding earlier than the recommended period. Initiating complementary feeding is a stressful time for both the baby and mother, as their strong bond, which was started in the womb and continued after birth will start to weaken; so it should be a gradual process (3-4). The current study shows that about 40% of babies were allowed to stop breast-feeding within twelve hours after birth and started complementary feeding. The appropriate age for initiating complementary feeding, inadequate breast milk and sickness of the mother/child were the main reasons for early cessation or supplementation in descending order. The current study shows that cow's milk based formula is the major complementary diet used in 52.5% followed by cow's whole milk in 35.7% and 54.17% of children were given this by bottle. In many other studies cow's milk, solid foods and cereal based gruel were the commonest weaning food used in the community (5,6). The association of breast-feeding with marital status was found to be statistically significant while maternal work outside the home was not found to be statistically significant when compared with mothers staying at home. Children born to unemployed mothers and mothers with low educational level tended to breast fed longer when compared with mothers with higher education and high income. The current study also shows that mothers with low education has breast fed their children for a longer period of time than those who attended higher education and this difference is statistically significant. Even though 92.2% of the mothers who were interviewed had antenatal follow up and 93.2% of them gave birth at health institutions, only 70% of them admitted that they got advice on breast feeding and infant

feeding practice. Only 4% of the respondents stated that their source of information was mass media and leaflets. Neighbors and grandmothers also played some role. This finding is similar to the citywide household survey in Addis Ababa, which showed lower level of information from health workers. Mothers were asked about their opinion on the appropriate age for complementary feeding and 88.3% of them said that their children should start complementary feeding- between four to six months of age while the actual practice was that 53.5% of the children were started on complementary feeding before four months of age. The mean duration of exclusive breast-feeding reported by the mothers was 4.9 months while the study demonstrated exclusive breast-feeding for 2.89 months only. Though 88.4% of mothers stopped breast-feeding their children before six months of age, the suggested mean duration of total breast-feeding was 22.9 months. The trends away from breast-feeding practices towards artificial feeding, usually employing a bottle, similar to other studies, was demonstrated in the current study (12-14). The relatively increased health service seeking behavior of mothers reflected by high attendance of Antenatal Clinic and delivery at health institutions was not accompanied by the attitudinal change of

health practices by these mothers. This finding clearly demonstrates the discrepancy between the knowledge and attitude in infant feeding practice in the studied population. Health workers should promote initiation of early exclusive breast-feeding as well as encourage and continue to educate mothers on starting complementary feeding not before 6 months of age. Bottle-feeding has to be discouraged. Studies have shown that the knowledge and attitude of health workers has a significant effect on infant feeding practices (12-15). Intensive health education related to breast and complementary feeding practice is necessary to improve the situation. The antenatal care facilities and the postnatal clinics should improve their health education services and the messages they convey. It would be wise to increase the use of Mass Media to deliver messages related to promotion of breast-feeding and infant feeding practices. Studies on a large scale needs to be done to explore the true associations of socio demographic characteristics of the mother's breast-feeding and complementary feeding practices.

**Table1. Distribution of mothers socio-demographic characteristics with respect to breast feeding practice in Tikur Anbessa Hospital (September to November 2003)**

Socio-demographic characteristics	Number	Breast feeding	Not breast feeding	P- value	OR	95 % CI
Marital status *				0.02	2.57	1.00-6.56
Married	339	77%	23%			
Single	23	56.7%	43.3			
Education				0.02	0.40	0.16-0.96
High school or less	320	71.1%	28.9%			
Higher education	50	85.6%	14.4%			
Occupation				0.72	0.91	0.54-1.56
Working outside home	135	76,6%	23.4%			
Working at home	235	78%	22%			
Family income birr/month				0.18	0.76	0.49-1.17
< 500	205	45.6%	54.4%			
≥ 500	165	53.3%	46.7%			

\* 7 mothers were divorced and 1 mother was a widow (not included in the analysis).

OR=odds ratio CI=confidence interval

**Table 2. Distribution of age of children when complementary feeding started in Tikur Anbessa Hospital (September to November 2003)**

Age in months	Number	Percentage
0-4	160	53.34
4-6	130	43.33
6-12	6	2.00
13-24	4	1.33
Total	300*	100

\* 300/370 children were on complementary feeding during the study and the rest were on exclusive breast feeding.

**Table 3. Mother's opinion on duration of exclusive breast-feeding in Tikur Anbessa Hospital (September to November 2003)**

Suggested duration of EBF in months	Number	Percentage
0-4	19	5.14
4-6	327	88.37
6-12	24	6.49
Total	370	100

**Table 4. Mother's reason for initiating complementary feeding in Tikur Anbessa Hospital (September to November 2003)**

<b>Proposed reason</b>	<b>Number</b>	<b>Percentage</b>
Lack of breast milk	86	28.57
Appropriate age for weaning	106	35.22
Sickness of mother or child	44	14.62
Inconvenience for work	27	8.97
Child refusal	16	5.32
Problem related to breast	16	5.32
Others	6	1.98
Total	301*	100

\* Only 301 mothers responded.

**Table 5. Major types of complementary foods used in Tikur Anbessa Hospital (September to November 2003)**

<b>Type of food</b>	<b>Number</b>	<b>Percentage</b>
Formula milk	156	52.5
Cow's milk	106	35.7
Cereal based food	21	7.1
Fruit and vegetables	5	1.7
Plain water or water with sugar	6	2.0
Adult food	2	0.7
Others	1	0.3
Total	297*	100

\* Only 297 mothers responded

**Table 6. Feeding methods used during complementary feeding in Tikur Anbessa Hospital (September to November 2003)**

<b>Feeding methods</b>	<b>Number</b>	<b>Percentage</b>
Bottle	156	54.17
Spoon and cup	106	36.8
Bottle and cup	21	7.29
Gavages (by hand)	5	1.74
Total	288*	100

\* Only 288 mothers responded

### **Acknowledgements**

We would like to acknowledge those who participated in collection of the data. We also would like to thank mothers who were willing to participate in the study.

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