TECHNICAL REPORT

THE STATE OF EXCLUSIVE BREAST-FEEDING AND COMPLEMENTARY FEEDING PRACTICES IN SELECTED ZONES OF TIGRAY AND AMHARA REGIONS OF ETHIOPIA

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SUMMARY

INTRODUCTION

Breast-feeding in Ethiopia is almost universal with 96% of the children ever breast-fed. Earlier studies have shown that almost 100% of the rural mothers were breast-feeding. However, the duration of exclusive breast-feeding and age of introduction of complementary foods varied across different regions. In a nation wide Rural Nutrition Survey conducted in 1992, North Gonder and Tigray regions were found to experience the longest period of exclusive breast-feeding 12.1 months. In Ethiopia, women’s nutritional status also needs special consideration as three in ten women fall below the cut-off of 18.5. Therefore, the present cross-sectional study was designed to investigate the current practice of exclusive breast-feeding and age of introduction of complementary foods in regions with a high prevalence of exclusive breast-feeding and to observe the relationship between infant growth and maternal nutritional status.

OBJECTIVE

The general objective of the project was to assess the prevalence, duration of and factors affecting exclusive breast-feeding, prevalence of bottle feeding, the age of introduction and quality of complementary feeding and Health status of breast-feeding children in two selected areas in Ethiopia.

METHODS

A cross sectional study was conducted in Tigray region and North Gonder zone from March to May 2001. A multi stage sampling procedure was used and three woredas from each area were selected. These were Wukro, Adwa and Enderta from Tigray and Chilga, Dabat and Gonder-zuria from Gonder. In the urban areas, two kebeles were selected randomly using random number tables. For selection of the rural sites, the regions were stratified into three sub groups of approximately the same size consisting of equal number of farmers associations (PAs) and from each sub-region two farmers associations were randomly selected. From each district two urban kebeles and six farmers associations were randomly selected. In each of the sampled urban kebeles and PAs, all households or every second household depending on the width of the PAs with children less than or equal to three years of age
were included in the study. The sample consisted children less than or equal to three years of age (n = 1179 in Tigray and 1222 in Gonder).

Data was collected using a structures questionnaire on demographic variables including age, sex, marital status, and educational status and employment status. Data on duration of exclusive breast-feeding, breast-feeding in general, age of introduction of complementary foods, type and frequency of complementary foods and incidence of disease in the last fifteen days was collected. In addition to the structured questionnaire, Physical measurements i.e. anthropometric measurement of the mother and child pair was included.

Data entry and statistical analysis was conducted using “SPSS” computer software. Anthropometric data was calculated using “Anthro” software. Student's t-test was computed to determine differences between groups. Association between the different variables was examined using cross tabs and chi-square test.

RESULTS

The majority of the household heads in the study areas 79% in Tigray and 80% in Gonder were men. Seventy-nine percent of the mothers in Tigray and ninety-six percent of the mothers in Gonder were married or had been married sometimes in life. One third of the survey population lives in urban centers, while 2/3 live in rural areas. The predominant religion was Orthodox Christian both in Tigray and Gonder regions, 99% and 92% respectively. Illiteracy among mothers is relatively very high in both regions.

The majority of the study children were found in the age group 7-24 months in both regions. Only 18.4% and 18.6% of the children in Tigray and Gonder respectively, were greater than 24 months of age. No major difference was observed in the age distribution of children among the different woredas in the regions.

Birth weight was not recorded for the majority of the children, 89% in Tigray and 97% of the children in Gonder. A significantly higher proportion of mothers in Tigray (59%) initiate breast-feeding soon after birth than those in Gonder (34%). Late initiation of breast-feeding up to three days is highest among Gonder children about 20% compared to those in Tigray (11.8%). The proportion of children put on bottle or another mothers breast was relatively low, 0.5% and 1.3% in Tigray and Gonder.
respectively. Generally, the practice of delayed initiation of breast-feeding was more pronounced in Gonder compared to Tigray region.

Almost two-third of the study mothers either completely or partially throw away colostrums in both regions. The use of prelacteal feeds (the first fluid/food after delivery) was significantly more common in Gonder (79%) than in Tigray (28.5%). A significantly higher proportion of mothers, 67% in Gonder gave butter (non-spiced raw) to their newly born infants compared to 12% in Tigray. Giving sugar with water was a common practice in Tigray, while in Gonder, they gave water from malted cereals ("Bekil"). Use of diluted cow’s milk as a prelacteal feed was very minimal in both regions. A higher proportion of mothers in Tigray (62%) said that, they gave prelacteal feeds because breast milk was not ready. Sixty-six percent of the mothers in Gonder claimed that they gave prelacteal feeds to the infants because it is their culture.

The proportion of children under three years of age who were exclusively breast-fed at the time of the survey were 18.7% & 23.6% in Tigray and Gonder respectively. The rate of exclusive/almost exclusive breast-feeding (EX/AEX-BF) among children less than or equal to 12 months of age was 52.2% in Tigray and 61.5% in Gonder at 6 months of age.

Longer duration of EX/AEX-BF up to 12 months was observed in 16% of the children both in Tigray and Gonder. After six months of age, the rate of exclusive breast-feeding/almost exclusive breast-feeding decline sharply. Perceived lack of breast milk by about 65% of the mothers in Tigray and 60% of the mothers in Gonder was the main reason for not exclusively breast-feeding.

The great proportion of the study children, 98% and 97% in Tigray and Gonder respectively breast-feed their children on demand. Ninety-seven percent in Tigray and about 96% in Gonder breast-feed their children during the night. About 9% of the children in Tigray and 5% in Gonder were being bottle-fed at the time of the survey.

With regards to complementary feeding, only cereal based complementary foods in the form of Kitta (unleavened bread), gruel (liquid drink made of cereal), porridge, bread, pasta, macaroni were given to 56% of the children in Tigray. In Gonder a better combination of cereal and legume mix was given to 51% of the children. Use of complementary fluids was three times more common in Gonder than in Tigray. Mothers in Enderta, Tigray were less inclined to use complementary fluids than mothers in Wukro and Adewa. The majority of the mothers 47% & 32% in Tigray and Gonder introduce
complementary food to their infants at the age of 6 months. A higher proportion of the children, 49% and 40% were fed three times a day in Tigray and Gonder respectively.

During the survey, 13.2% of children under three years of age in Tigray and 6.8% in Gonder were malnourished (WHZ < -2 z-score). The mothers’ nutritional status as measured by BMI was found to be low. More than one third (39.4%) of the mothers in Tigray had low BMI (<18.5%). About 23% in Gonder were also malnourished (BMI < 18.5) at the time of the survey. Association of the nutritional status of the children with that of the mothers revealed that, mothers with low BMI had more wasted children (WHZ < -2z-score), 17.4% & 11% in Tigray and Gonder respectively, than that of the well-nourished mothers.

Thirty-six percent of the mothers in Tigray and 27% in Gonder who claim to have plenty of milk were having Body Mass Index less than 18.5. A significantly higher proportion of the Mothers, 85% & 94% in Tigray and Gonder respectively do not take any additional food during pregnancy and lactation.

Based on information gathered from mothers, 76% and 61% of children in Tigray and Gonder respectively were fully vaccinated. Reported illness in the last two weeks prior to the survey showed that 47% of the children in Tigray and 52% in Gonder were ill. Diarrhoea is the most common illness in 41% and 31% of the children in Tigray and Gonder respectively. Cough/common cold and fever were also reported by order of occurrence. During diarrhoeal episode, the majority of mothers, 55% in Tigray and 48% in Gonder took their children to the nearest clinic. About 16% of the children were given traditional medicine in Tigray as a treatment for diarrhea. Use of Oral Rehydration Therapy (ORT) was higher in Tigray 11% compared to that of Gonder (6%). The proportion of mothers who withhold food and drinks during diarrheal episode was almost two folds in Gonder, 17% compared with Tigray, 9%.

**DISCUSSION**

In Ethiopia, especially in the northern part of the country exclusive breast-feeding up to 4 months was said to be common (CSA, 1992). In previous studies, the definition of exclusive breast-feeding was quite different from the present definitions. In the present study many mothers 28.5% & 79% in Tigray and Gonder respectively, give prelacteal feeds for the first one to three days to the newborn infants although they continue to give breast milk only for more than 6 months. Therefore, we referred to these mothers as almost exclusively breast-feeding based on the WHO definition. If these mothers were educated on the
harmful effects of giving prelacteal feeds, the majority of the mothers would continue to exclusively breast-feed their infants for 6 months and meet current recommendations. However, the practice of giving prelacteal feeds is mainly based on cultural practices and bringing about a change in the practice will really need a devoted effort and community mobilization.

The use of prelacteal and postlacteal feeds (food or liquid offered before and after delivery respectively), was a common practice in Gonder by 79% of the mothers compared to those in Tigray, 28.5%. The main reason given in Gonder was that the practice is cultural and perceived non-readiness of breast milk in Tigray. It has been perceived that breast will not be ready immediately after birth and the mother have to wait for two to three days before initiating breast-feeding. She even not attempts to try to initiate due to perceived non-readiness of breast milk soon after birth. The problem of delayed initiation of breast-feeding was more pronounced in Gonder than in Tigray. However, this is a serious problem that has to be dealt with and affects exclusive breast-feeding a great deal. Women’s attitudes and beliefs are very much influenced by culture, however, health workers have to teach, inform women on the benefits of early initiation of breast-feeding to exert influence over cultural practices. Good breast-feeding practices that need to be encouraged were breast-feeding on demand and night feeding of children that was being practiced in both regions.

Colostrum is the first milk, which is very beneficial for the development of the immune system of the newborn. The habit of feeding colostrums to the newborn was very minimal in both regions. The main reason is that colostrum is regarded as “bad milk” which causes stomach cramps for the newborn.

The current recommendation of the World health organization is that, after the initial period of exclusive breast-feeding, “children should continue to be breastfed for up to two years of age or beyond, while receiving nutritionally adequate and safe complementary foods. In our study the mean duration of breast-feeding was 28.7 months and 32.7 months in Tigray and Gonder respectively. This positive attitude needs to be encouraged and promoted.

A study conducted in Addis Ababa had shown that timely complementary feeding rate in the age group 6-9 months was 57.4%, however, in our study complementary feeding practice within this age group was 68.9% and 65.2% in Tigray and Gonder respectively, showing an improving trend compared to the delayed introduction of complementary foods previously reported in these regions. However, the
predominant use of only cereal based complementary foods in the form of porridge and gruel and the rare consumption of animal products, fruits and vegetables show the poor quality of the diet in both regions. The cereal legume mix porridge or gruel is preferable rather than the only cereal based complementary foods.

Poor maternal supplementary food intake was observed in both regions, however, the amount and composition of the weight gained during pregnancy are major determinants of the extra energy and nutrient needs, and the amount of weight gained significantly influences pregnancy outcomes, resulting in low birth weight infants.

The rate of malnutrition, wasting (expressed by WHZ) was found to be significantly higher in Tigray (13.2%) compared with that of Gonder (6.8%) among the study children.

At the time of the survey, the majority of the mothers, 68% & 72% in Tigray and Gonder were illiterate. The higher illiteracy rate will also negatively affect the nutritional status of the children. Maternal malnutrition has also contributed to the nutritional status of the children.

From the study children 76% & 61.4% were fully vaccinated in Tigray and Gonder respectively as reported by their mothers. Compared to the national average of fully immunized 29.87%, this is an astonishing achievement attributed to the health facilities in these regions. More than half (52%) of the children in Tigray and nearly half (47%) in Gonder were sick two weeks prior to the survey. The main cause being diarrhoea, followed by cough (ARI) and fever.

This finding is in agreement with the 1992 national Rural Nutrition survey, where the most common illness among children less than 5 years in the previous two weeks were diarrhea, fever, cough, vomiting and other illnesses.

**Conclusions and Recommendations**

While breast-feeding is universally initiated, other aspects of infant feeding do not meet current international recommendations. Prelacteal feeds are commonly used especially in Gonder. Introduction of complementary foods is usually after 6 months and the quality and frequency is not optimal to meet the child’s needs. The use of fruits and vegetables and animal products are generally very poor in both regions raising concern on the quality of the complementary food offered. Nutrition education on the benefits of exclusive breast-feeding, avoidance of prelacteal feeding and balancing complementary
food from locally available food ingredients and raising the frequency of feeding for young children is recommended.

The data have implications for the design of promotion of exclusive breast-feeding and improved complementary food intervention for mothers residing in Tigray and Gonder regions in Ethiopia.

The following specific recommendations are made:

1. Nutrition education with emphasis on infant and young child feeding needs to be given at various levels.

2. Personal and environmental hygiene needs to be promoted through health education.

3. Initiation of breast-feeding immediately after birth, use of colostrums, avoidance of prelacteal feeds and exclusive breast-feeding up to 6 months of age need to be communicated to the rural and urban mothers and efforts should be made to change the harmful cultural practices of infant and young child feeding through continuous education on the subject.

4. Mothers in these regions need to be encouraged with regards to their positive practice of frequent, on demand breast-feeding including night feeding.

5. Mothers should also be encouraged to continue to breast feed well beyond two years of age as they are doing it now.

6. Increasing meal frequency and improvement of the dietary quality and micronutrient intake through regularly feeding vegetables and fruits in the study areas is recommended.

7. Promote the practice of frequent and active feeding during and after illness, which is important to increase fluid intake with frequent breast-feeding.

8. Increase awareness of the community, families and husbands, grandparents, etc that pregnant and lactating women need an increasing energy and nutrient foods.