

IYCF Practices, Beliefs, and Influences in Tigray Region, Ethiopia



September 2010

Alive & Thrive is a five-year (2009-2013) initiative to improve infant and young child feeding practices by increasing rates of exclusive breastfeeding and improving complementary feeding practices. The first two years provide a window of opportunity to prevent child deaths and ensure healthy growth and brain development. Alive & Thrive (A&T) aims to reach more than 16 million children under two years old in Bangladesh, Ethiopia, and Viet Nam through various delivery models. Learnings will be shared widely to inform policies and programs throughout the world. Alive & Thrive is funded by the Bill & Melinda Gates Foundation and managed by AED. Other members of the A&T consortium involved in the program in Ethiopia include GMMB, IFPRI, and World Vision. The main implementing partner for the A&T community-based approach is the Integrated Family Health Project, funded by USAID. In Ethiopia, A&T collaborates closely with the Federal Ministry of Health and its Regional Health Bureaus, the National Technical Working Group, the Ethiopia Health and Nutrition Research Institute, and UNICEF.

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Abbreviations and Acronyms

ACIPH	Addis Continental Institute of Public Health
A&T	Alive & Thrive
AED	Academy for Educational Development
AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral therapy
BCC	Behavior change communication
CBN	Community based nutrition
DALYs	Disability adjusted life years
DFID	Department for International Development
ENA	Essential nutrition actions
FGD	Focus group discussion
HEP	Health Extension Program
HEW	Health extension worker
HIV	Human immunodeficiency virus
IRB	Institutional Review Board
IYCF	Infant and young child feeding
OTP	Outpatient therapeutic program
PAHO	Pan American Health Organization
PMTCT	Prevention of mother to child transmission
PSNP	Productive Safety Net Program
SNNP	Southern Nations, Nationalities, and People's (region)
UK	United Kingdom
USAID	United States Agency for International Development
VCHP	Voluntary community health promoters

Glossary

Besso	Food prepared from flour of roasted barley, with hot (not boiled) water; a thick version is prepared with salt and butter
Chibito	Food prepared from freshly baked unleavened bread by making it into a fist shape. This is also prepared from besso with the same shape.
Fafa	A manufactured cereal-based flour for baby food, processed from a mixture of grains, often provided as porridge for malnourished children
Firfir	Mixture of injera prepared in a tomato sauce
Fitfit	Mixture of injera and stew or tomato sauce
Hambasha	Homemade bread prepared from wheat, maize, or barley
Injera	A flat thin bread resembling a pancake prepared from teff/barley/sorghum
Kita	Unleavened bread prepared from teff/wheat/maize/barley
Kolo	Roasted cereals often from barley, wheat, beans, chickpeas
Nifiro	Boiled cereals often from barley, wheat, beans, chickpeas
Pastini	Tiny forms of spaghetti
Shiro wot	Stew prepared from flour of roasted beans or peas
Teff	Tiny grain used to prepare injera or unleavened bread, known for its iron content
Wot	Any kind of stew made from pea flour, split lentils, meat, or vegetables

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Executive Summary

Alive & Thrive Ethiopia undertook formative research to better understand the infant and young child feeding (IYCF) practices in communities in Tigray Region to inform the design of a program to improve exclusive breastfeeding and promote appropriate complementary feeding.

The guiding questions for the Tigray formative research, conducted in early 2010, were the following:

What are the beliefs and current practices for breastfeeding and complementary feeding of children in the study communities?

What key factors influence mothers and family members to adopt recommended IYCF practices?

Who influences mothers? What is the current role of family and community members to support optimal infant and child feeding practices?

What is the current role of health extension workers (HEWs) and other health providers to support optimal infant and child feeding practices?

What is the Health Extension Program (HEP) currently doing to support child feeding in communities? What opportunities exist to support frontline workers to optimize child feeding?

Prior to designing this formative study, A&T conducted a review of the existing substantial body of information concerning maternal nutrition, early initiation of breastfeeding, and exclusive breastfeeding in Ethiopia. Formative research, in the form of focus group discussions under the LINKAGES Project, provided additional information on child feeding practices that led to the development of Essential Nutrition Actions (ENA).

Much of the existing information from the literature review focused on the initiation of breastfeeding and complementary feeding practices in a general sense. More detailed information was thus needed to fully understand the issues of IYCF practices in the project areas, and to identify barriers, facilitators, people, and approaches that can influence change. The findings from the formative research will contribute to the design of effective strategies for improving breastfeeding and, especially, complementary feeding practices for young children. Findings highlight the potential role of health and community workers to support this behavior change, contributing to efforts to reduce stunting among young children in Ethiopia.

Key Findings

The Tigray research on infant and young child feeding identified the beliefs and current practices for breastfeeding and complementary feeding of children, along with key facilitating factors to improve young child feeding. The study also assessed the roles of different groups, including the family and community members, health extension workers and voluntary community health promoters in supporting IYCF in their respective communities.

IYCF practices and related beliefs and attitudes. The findings from this study showed that although mothers have basic breastfeeding and complementary feeding information, visible gaps remain, such as not practicing exclusive breastfeeding, the existence of faulty traditional beliefs, and specific misconceptions about breastfeeding and complementary feeding.

While mothers, families, and communities embrace the tradition of prolonged breastfeeding, certain beliefs prevent mothers from breastfeeding exclusively. Among the major misconceptions is the belief of mothers that giving only breastmilk without adding fenugreek juice will expose the baby to intestinal worms. Beliefs also keep mothers from providing extra breastfeeding for a sick child. Some mothers reported the belief that encouraging suckling when the child is ill will only contribute to its illness.

In Tigray Region, mothers, community members, and HEWs alike stressed the unavailability of diverse foods and lack of resources to purchase foods as the major reasons for not following recommended complementary feeding practices. Lack of food was also mentioned in explaining why mothers introduce complementary foods later than 6 months of age, fail to offer children a variety of food types, and are unable to give children extra meals when they are sick or recovering from illness.

The study identified misconceptions that affect complementary feeding habits. Mothers, community leaders, and even voluntary community health promoters (VCHPs) hold widespread beliefs that children cannot digest meat or other animal products, that children will choke on thick porridges, that extra food when a child is sick will contribute to illness, that children will refuse to eat during or after sickness, and that bottle feeding is more sanitary than using cups or hands to feed.

Mothers and other community members, HEWs, VCHPs, and supervisors all expressed interest in learning about the recommended IYCF practices, as long as they trust that the person providing advice is properly trained and has reliable information.

Community and family influences on mothers' feeding practices. The potential role of family influentials, HEWs, and VCHPs in providing IYCF support was also identified. Mothers get IYCF support from family influentials such as in-laws, grandmothers, fathers, community leaders, and traditional birth attendants. It was made clear that some mothers have changed their practices after receiving advice on child feeding. On the other hand, responses obtained from focus group discussion (FGD) participants were not always in line with standard IYCF recommendations. The faulty IYCF practices mentioned earlier are most often associated with advice from in-laws or community elders. While support provided from outside the family to a mother with a new baby is important, it is also necessary to shift the long-standing beliefs of family influentials.

HEW supervisors sensed noticeable improvements in the areas of environmental sanitation through latrine use, family planning, immunization coverage, bed net utilization, prevention and control of communicable diseases, awareness of recommended child feeding practices, pregnancy follow-up and delivery services, and HIV testing services leading to a decreased disease burden. Still, the problem of

food insecurity throughout the communities was raised by study participants as a substantial obstacle to optimum IYCF practices.

HEW and VCHP capacities. This study looked at perceptions of staff and volunteer capacity from their own point of view and from the point of view of the families they serve. Capacity includes both knowledge of recommended IYCF practices and the skills needed to teach, train, or counsel.

Though all of the HEWs involved in this study had received short-term training in community-based nutrition (CBN), outpatient therapeutic program (OTP), and/or infant, young child, and maternal nutrition, they indicated their need for a focused IYCF training. Much of the training they have received addresses treatment of malnutrition and not prevention, which is A&T's focus. Most of the HEWs underscored that they have some knowledge, but they need refresher courses to help them do their work effectively, especially on the complementary feeding aspect. The findings from this study reveal that HEWs have reasonably better knowledge in the area of breastfeeding than in complementary feeding. Regarding their own knowledge and skills related to counseling, almost all of the HEWs are keen to improve those skills.

VCHPs acknowledged that most of them had not received any formal training in infant and young child feeding. Some HEWs mentioned the need for teaching aids and for strengthening VCHPs' work through training and incentives.

Mothers expressed that they prefer to be counseled by a trained person who has better IYCF understanding than they themselves do. For the most part, they respect the education that HEWs have received and accept their advice on IYCF. But both mothers and HEWs expressed concern about VCHPs' expertise in IYCF.

The need for IYCF refresher training was repeated by HEW supervisors, HEWs, and VCHPs. The supervisors of HEWs emphasized the need for additional trainings for the HEWs, VCHPs, and themselves to build capacity and confidence in addressing and counseling mothers about IYCF. Almost all of the HEWs said they were eager to learn more about IYCF and about the counseling services they are to render to the community.

1. Background

Alive & Thrive is a five-year (2009-2013) initiative to improve infant and young child feeding practices by increasing rates of exclusive breastfeeding and improving complementary feeding practices. The first two years provide a window of opportunity to prevent child deaths and ensure healthy growth and brain development. Alive & Thrive (A&T) aims to reach more than 16 million children under two years old in Bangladesh, Ethiopia, and Viet Nam through various delivery models. Learnings will be shared widely to inform policies and programs throughout the world.

In Ethiopia, A&T's goal is to reduce death, illness, and malnutrition caused by sub-optimal feeding of infants and young children:

- Increase exclusive breastfeeding by 25 percent (from 49 percent to 61 percent) among infants 0-5 months old
- Prevent stunting in 353,000 children

The aim is to design, implement, and test strategies which can have a substantive impact on complementary feeding practices and that can readily be adapted and scaled up all over the project area. To achieve coverage at scale, A&T is partnering with Integrated Family Health Project (IFHP), World Vision, and other organizations that support the Government of Ethiopia delivery system to effect changes in IYCF through three main strategies: improving IYCF policy and regulatory environments, shaping IYCF demand and practice (community-based approaches), and increasing supply, demand and use of fortified complementary foods and related products.

One of the major platforms for program implementation to shape IYCF demand and practice is through existing programs which address community-based nutrition. The strategy is to support and strengthen the government's community-based Health Extension Program which utilizes HEWs and VCHPs to mobilize their communities, deliver key preventive messages, and provide counseling to promote optimal IYCF behaviors. A key question which A&T seeks to answer through this approach is the level of improvement in IYCF that can be achieved at scale, largely through the government's health program using the health extension workers to catalyze change.

The Federal Ministry of Health in Ethiopia has made significant progress in support of IYCF in the last decade. A National Strategy for Infant and Young Child Feeding was developed in 2004 which provides detailed feeding recommendations and guidelines. A National Nutrition Strategy was developed in 2005-06, and a National Nutrition Program for implementing this strategy on a national scale was introduced in July 2008.

In 2005, under the USAID bilateral project and AED's LINKAGES project, key messages on the essential nutrition actions to improve the nutrition of women and young children in Ethiopia were developed and disseminated. Using the favorable policy environment created, considerable work was done in the area of IYCF by government and nongovernmental organizations. Alive & Thrive is building on these efforts.

2. Rationale, Objectives and Research Questions

Ethiopia is a large country with diverse cultures reflected by different food habits and traditional practices. To ensure that program strategies are effective in a diverse culture, information is needed to better understand various IYCF practices at community and household levels as well as the factors which influence child feeding practices. Further research was needed to fully understand the IYCF practices and the barriers, facilitators, people, and approaches that can influence change for optimal IYCF practices. A&T offers an opportunity to expand on earlier IYCF work and to focus on children under 2 years of age towards preventing malnutrition. To reduce stunting, A&T focuses on improved complementary feeding. The research findings will be used to support effective strategies for improving complementary feeding practices.

2.1 Objectives of the formative research

General Objective

The general objective is to understand infant and young child feeding practices and the role of service providers in the study communities. Specific objectives are:

- To describe current IYCF practices
- To identify barriers and facilitators for recommended IYCF practices
- To identify people and approaches that can influence optimal IYCF change
- To explore strategies for improving complementary feeding practices for young children
- To explore the potential role of health and community workers to support IYCF behavior changes and thus reduce stunting in young children

2.2 Research questions

The following research questions were formulated to identify the gaps in IYCF, especially on complementary feeding, in the study communities:

- a) What are the beliefs and current practices for breastfeeding and complementary feeding of children in the study communities?
- b) What key factors influence mothers and family members to adopt recommended IYCF practices?
- c) Who influences mothers? What is the current role of family and community members to support optimal infant and child feeding practices?
- d) What is the current role of health extension workers (HEWs) and other health providers to support optimal infant and child feeding practices?
- e) What is Health Extension Program currently doing to support child feeding communities? What opportunities exist to support frontline workers to optimize child feeding?

3. Methodology

3.1 Study area

The formative research was conducted in three zones of Tigray Region: central, eastern, and southern zones with one community selected in each zone. Research communities were in Tahitay Maichew, Hawizen, and Raya Azebo. The three locations were chosen to capture differences in breastfeeding and complementary feeding practices within the region. According to the 2007 census result, the population is reported to be 99,184, 118,648, and 136,039 for Tahitay Macho, Hawizen, and Raya Azebo respectively. The food source for many of the households in the districts is farming and, from informal information obtained from district officials, the three districts for this research are known to be food insecure.

3.2 Sampling techniques

Site Selection: Communities were purposefully selected by the A&T program team to capture varying factors, such as staple food, access to market, women's employment patterns, and tribal and language composition. All of the study areas are currently served by a government health extension program and are within the current IFHP program areas.

Selection of Respondents: Prior to any data collection, discussions held at Woreda Health Offices assisted the program team in gaining permission to enter sample communities. Respondents were randomly selected in each area from a list provided by the health post, and the study interviewers also went door to door to identify households with children in the required age group. Since there was no better method to get a list of children under 2 years of age in selected communities, the health post immunization registry book was used to select participants. Selection was based on the age of the child and the willingness of the family to be observed.

Maternal interviews and observations: Household visits were conducted when the majority of residents were expected to be home. Observations were also conducted in the same households where mothers of the eligible children were interviewed.

Focus group discussions: Focus group discussions (FGDs) were held with fathers and grandmothers or mothers-in-law. Respondents for focus groups were selected from the same village where the women interviewees were residing. Only one member of the household was selected, in order to avoid mutual influences in the responses. Focus group discussions were also held with village leaders and women's group leaders. These participants were identified by village leadership and HEWs.

Interviews with service providers: Interviews were also conducted with HEWs and VCHPs, as they are the individuals providing advice to mothers on child feeding and treatment of illness. The two HEWs serving each of the respective study communities were interviewed; in addition three more HEWs were interviewed from neighboring communities. The overall study design used for this formative research is presented in Table 1.

Table 1: Study participants and data collection methods, Tigray formative research			
Study participants	Data collection method	No./ site	Total
Mothers with children 6-24 months	Semi-structured interviews		45
With children 6-8 months		5	
With children 9-11 months		5	
With children 12-23 months		5	
Maternal Observations	Opportunistic observations		12
With child 6-23 months		4	
Fathers with children 6-18 months	Focus group discussions	1	3
Grandmothers of children 6-18 months	Focus group discussions	1	2
Women's leaders and community health committee members	Focus group discussions	1	3
Voluntary community health promoters	Semi-structured interviews	2	6
Health extension workers	Semi-structured interviews	5	15
Supervisors of HEWs	Semi-structured interviews	2	6

3.3 Data gathering instruments

A&T had previously conducted this same study in Southern Nations, Nationalities, and People's (SNNP) region, in late 2009. Survey tools for both studies were based on established protocols already used and tested in infant feeding programs. The mothers' questionnaire and observation guide were adapted from the *ProPan Manual: Process for the Promotion of Child Feeding*¹, developed by the Pan American Health Organization (PAHO). For the SNNP study, focus group guides had been adapted from formative research previously conducted in several countries under the LINKAGES Project. For this subsequent study in Tigray, all instruments were translated to Tigrigna language and a few changes were made to the mothers' questionnaire.

3.4 Data collection

One team of nine individuals was established, two of them field supervisors responsible for overall coordination and data collection. They used the already pretested data collection instruments. The two supervisors conducted the interviews with service providers. Four of the remaining members were assigned to conduct the FGDs. Since one FGD was conducted per day, five team members interviewed mothers while two others conducted FGDs. Three individuals were selected from those who were doing the mother interviews and assigned to conduct the opportunistic observations.

All of the data collectors for this study were fluent speakers of the Tigrigna language and had undergraduate and/or graduate degrees in public health.

¹ Pan American Health Organization (April 2004). *ProPan Manual: Process for the Promotion of Child Feeding*.

As listed in Table 1, a total of 45 in-depth interviews with mothers, 12 household observations, 3 FGDs with fathers, 2 FGDs with grandmothers, 3 FGDs with women's leaders and community health committee members, and 27 in-depth interviews with HEP staff and volunteers were conducted. All FGD sessions were tape recorded and transcribed.

3.5 Data quality assurance

To assure the quality of data collected, the following steps were taken:

- The data collection instruments were adapted from previous studies
- Data collectors were trained with the data gathering protocol
- Evening discussions were held to identify the key findings, challenges, and other issues raised by the interviewers.
- A summary matrix was developed in advance and the interviewers completed this matrix for each interview with mothers to summarize and discuss findings with supervisors.

3.6 Ethical considerations

Ethical approval was received from Addis Continental Institute of Public Health's Institutional Review Board (ACIPH IRB)². Permission to undertake the survey was obtained from the study sites and woreda authorities. Informed consent was obtained from the study participants after explaining the purpose of the study. Participation of all respondents in the study was on a voluntary basis and emphasis was given to assure the respect, dignity, confidentiality, and freedom of each participating individual in the study. Interviewers were also trained on the importance of obtaining informed consent and avoiding coercion of any kind.

3.7 Data processing and write-up

Data from FGDs was transcribed in the language of the interview and then translated into English for analysis. Notes from in-depth interviews were the main data for analysis of important and common concepts related to the main themes of the study. Data analysis was done mainly based on the interpretative approach that involves eliciting meanings from the collected information. "Open Code" Computer program was used for sorting transcribed information, looking for patterns, similarities, differences or contradictions.

² Addis Continental Institute of Public Health has an independent Ethical Review Board which is approved by the National Ethical Committee.

4. Findings

4.1 Breastfeeding and complementary feeding practices

Reported use of breastfeeding and feeding frequency: Mothers in the three communities expressed the belief that breastmilk is good for children, that it makes them strong and healthy. They also believe that breastmilk can satisfy the child's food demands. The HEWs and the VCHPs in the study areas confirmed that breastfeeding is widely practiced. During the study period, all studied children in the three areas were breastfeeding. The reported breastfeeding frequency ranges from 3 times to 30 times in 24 hours. (A mother from Tahitay Macho reported that she breastfeeds her child 30 times a day.)

Some mothers reported that the time they spend at home affects breastfeeding frequency. Some reported that when they go away from home, the feeding frequency may decrease. Mothers also stated that they decrease the frequency of breastfeeding when they start offering their children complementary foods. The reasons given by mothers for frequent breastfeeding include: it makes the child healthy and strong; it is sometimes the only thing given for young children; the child demands it; and HEWs recommend more frequent breastfeeding.

“When I was not giving additional food, I used to breastfeed 5 times a day, but now with additional foods, I breastfeed 3 times a day” (A mother from Tahitay Macho)

Feeding from both breasts: All of the mothers reported that they feed their children from both breasts. Mothers named specific advantages of feeding from both: the child will get enough breastmilk, the mother won't feel pain or cold on the one breast that the child is sucking, and the child will be comfortable while sleeping. A mother in Hawizen reported that she gives both breasts, since one breast has water while the other breast has food.

Mothers mentioned different cues that signal when it is time to switch breasts: the mother feels pain when the child is sucking, the child cries, the child stops sucking or takes a break, or the child himself takes the other breast. One mother said she hears a sound in her breast when it is empty. Some mentioned that they usually feed from both breasts during the time the child is asleep; but during the daytime and when the child is playing, they feed from only one breast.

Duration of breastfeeding: Mothers were asked how long they plan to continue breastfeeding. The minimum age that a mother mentioned she plans to stop breastfeeding is 1 year and 3 months, whereas the maximum is 4 years. Most of the mothers have a plan to breastfeed until their children are 2 to 3 years of age. Even though a mother in Tahitay Maichew said that it is enough to breastfeed until 2 years of age, mothers from the same area said that it is traditional to breastfeed until 3 years of age.

Some mothers are not able to breastfeed for 2 years since they are busy with activities outside the home or because they become pregnant before the child is 2 years old. A mother in Raya Azebo stated that she breastfed her child for only 1 year and 3 months because she became sick at that time and she didn't want to transmit the disease to the child.

“I spend the whole day working on the safety-net program, and I am exposed to the sun for an even longer time. The breastmilk will not be good for the health of the child. Thus, I can’t breastfeed for 2 years.” (A mother from Raya Azebo)

Mothers mentioned a number of reasons for continuing to breastfeed to 2 years or beyond. They stressed that they will breastfeed for a long duration since it is important to make the child strong, healthy, and fat. They also mentioned that it strengthens the bond between the mother and the child, prevents pregnancy, and makes the mother healthy. One mother mentioned the scarcity of food as a reason to continue breastfeeding. She stated that it is the breastmilk that keeps the child healthy and strong. Thus, she prefers to breastfeed until the child is 3 years old.

“Breastfeeding up to only 2 years is not enough, because it exposes the child to malnutrition and later the child will be weak in growth and development.”

The HEWs confirmed that mothers in the study communities generally do breastfeed for a minimum of 2 years. However, they are not sure that the frequency and the amount of breastfeeding are adequate for the child.

Timely introduction of first foods: Some mothers thought it was impossible to introduce complementary food at the recommended age of 6 months because of economic reasons. Focus group discussion participants had different opinions on the ideal time to start introducing complementary food to the child, ranging from 4 months to 8 months to 1 year. Some mothers reported that a child should be given food at 6 months of age. Those who stated they prefer to give food earlier believe that the food is important for the child’s growth, and breastmilk alone is not enough for the child. Some mothers also thought that a child would be affected by “worms in the breastmilk” if he were given nothing but breastmilk. Likewise, during household interviews, it was found that the age for introduction of additional foods ranged from 3 to 8 months, with a majority of mothers reporting that they had started giving foods at 6 months or younger. The types of first foods reported were milk, porridge, gruel, injera with shiro wot, bread with tea, fenugreek juice, unleavened bread, and chibito (a food prepared from flour of teff and Niger seed). One mother from Raya Azebo reported that she gave her child papaya as a first food at 6 months of age.

The primary reason given for introducing food earlier than 6 months was the concern that breastmilk is not enough for the child, and that additional foods are needed to avoid hunger and ensure good growth and strength. A mother from Raya Azebo reported it is a tradition she learned from her family and that was how she was raised. Although many mothers had given food to their children at the age of 6 months or younger, a mother with a 7-month-old child from Hawizen had not started giving food to her child by the time of the study period. She stated her reason as follows:

“I am not giving any food to my child because he is young and doesn’t have appetite for food; I had a plan to start giving food at the age of 7 months.” (A mother with a 7-month-old child from Hawizen)

Appropriate first foods: Mothers from the three communities listed a variety of foods as good for young children (Table 2). All mothers shared the idea that these foods are important for the growth and strength of the child, and make the child healthy. Moreover, some mothers mentioned that the foods they listed are the only ones available in their locality. The types of foods mentioned by mothers were similar to those mentioned by community leaders, fathers, and grandmothers. (A glossary on page v defines many of the foods listed here.)

Study areas	Suggested foods	
	Children 6–12 months	Children 12 months and older
Hawizen	Porridge, egg, fitfit, pastini, rice, gruel, cow's milk, teff injera, vegetables such as carrots and potatoes, fenugreek juice, unleavened bread, besso, banana, wheat, spaghetti, macaroni, tea, bread	Porridge, egg, kolo, nifiro, bread, vegetables, injera with shiro, unleavened bread with tea, macaroni, potato, milk, milk products, meat, banana, rice, carrot, chicken
Raya Azebo	Bread, spaghetti, cow's milk, unleavened bread, porridge, injera made of teff or sorghum mixed with shiro or meat stew, ambasha with tea, fenugreek juice, egg, butter, biscuit, gruel, vegetables, fruits	Injera, fitfit, unleavened bread, porridge, bread, thick gruel, egg, milk, meat, honey, ambasha, besso, banana, lentil stew, shiro stew, vegetables
Tahitay Macho	Banana, egg, porridge, gruel, rice, food prepared from maize, barley teff, wheat, and sorghum, unleavened bread, cow's milk, tea, butter, bread	Banana, egg, porridge, injera, bread, milk, meat, vegetables, fruits, maize, teff, sorghum, barley, wheat, unleavened bread, chibito, gruel, biscuit, rice, macaroni, ambasha

Consistency of complementary foods: The consistency of complementary foods ranged from thin fluid to solid food. It was observed that children were given semisolid foods such as thick gruel, porridge, and injera with stew made of pea flour. Some were also given solid foods such as bread and unleavened bread. Some mothers supported the practice of feeding thick porridge to a 7-month-old child, and others did not. Some mothers across the three study communities said that 7 months is too young to feed a child thick porridge. They recommended thin gruel for this age. There was a fear among mothers that a child may not be able to swallow thick porridge and that the child may choke. Mothers also believed that liquid foods are important for the health of the child. Two mothers in Tahitay Maichew (one with a child 11 months old) indicated that they have a preference for thin fluids, and they plan to start solid foods after 1 year of age. Solid food was also preferred by some mothers because of its availability and because of the ease of feeding the same food as the rest of the family.

“I prefer solid foods because varieties of foods are not available in my community; I am also busy with household activities and outside the home. It is difficult to prepare separate food for the child.” (A mother from Tahitay Maichew)

Transition to family foods: According to mothers and other family members from all three communities, the age at which children start eating from family foods ranges from 5 months to 6 years. The majority of mothers in the three communities commonly mentioned 2 years as the age at which children eat from the family's diet. A general belief was that after 2 years, family foods are easily taken by the child and they are useful for the health of children. Some mothers reported that their children started showing interest in eating family foods after they reached 6 months. A mother from Hawizen mentioned that she gave her child family foods starting from the 5th month because she had no other foods to prepare for the child. Some mothers don't agree with giving family food to young children because of a fear of choking and the presence of pepper and spice in the food.

“If a child is fed with a food that has pepper and spice before the age of 2 years, it causes discomfort to the stomach of the child and causes intestinal parasites.” (A mother from Tahitay Maichew)

Food Quality and Diversity: During the opportunistic observations, mothers were seen feeding their children injera with shiro more frequently than other foods. The shiro was prepared from ground beans or pea flour to which oil, pepper, and onion were added. Some mothers were also observed feeding their children porridge, unleavened bread, and bread soaked in a mixture of water and sugar. One mother from Hawizen gave boiled egg with the porridge. Unleavened bread, injera, porridge, gruel, bread, milk, and egg were commonly fed to children the day before the data collection for this study. A few mothers reported that they gave their children kale. Table 3 presents the types of foods given to children of different age groups in the three communities.

No one mentioned adding a variety of foods to the child’s porridge. None of the children was fed with chicken, meat, fruits, or peanuts. One mother from Raya Azebo reported that her child ate nothing the day before data collection because he was sick.

The majority of the study participants expressed their willingness to enrich the child’s porridge by using different food items. However, they also stated that they were unable to do so for economic reasons or were unsure how to prepare nutritionally rich porridge. This finding was similar to the information obtained from HEWs.

Most of the mothers reported that it was not affordable to purchase vegetables, fruits, a variety of cereals, meat, egg, and milk for their children. A mother from Hawizen mentioned that besides the cost of the foods, she thinks that her child is too young to eat vegetables and meat.

“Orange fruits and vegetables are not available in the area, and my economic status doesn’t allow me to purchase these foods.” (A mother from Tahitay Macho)

“We feed our children semisolid foods such as gruel starting from 6 months of age, porridge from 7 months of age, and unleavened bread, injera, and ambasha starting from the first year.” (A father from Tahitay Macho)

Table 3: Maternal reports of complementary foods fed to children of different ages			
Study area	Reported foods by age group		
	6–8 months	9–11 months	12–23 months
Hawizen	Porridge, pastini, gruel, egg, rice, unleavened bread, cow's milk, fenugreek juice with sugar, injera with shiro, bread with tea	Porridge, injera with shiro wot, unleavened bread, bread	Unleavened bread, cow's milk, injera with shiro, beso, porridge, egg, ambasha with tea
Raya Azebo	Porridge, injera, gruel, bread with tea, cow's milk, unleavened bread, egg, tomato sauce, hambasha with tea	Injera, porridge, gruel, shiro wot, meat broth, fenugreek juice	Injera with shiro, biscuit, cow's milk, bread, porridge, hambasha, tea, pea stew
Tahitay Macho	Gruel, porridge, unleavened bread, egg, injera	Egg, porridge, chibito, unleavened bread, injera, kale, shiro wot	Unleavened bread, injera with shiro, porridge, egg, biscuit, gruel

Fasting seasons and children's diet: The day before the study was during a fasting period for Orthodox Christians in the three communities. Although young children are not expected to fast, some mothers said they are not willing to prepare non-fasting foods for their children because it will contaminate utensils used for cooking family foods. Some mothers also mentioned that meat and chicken are neither affordable nor available in the market. Butter or oil is added to the child's porridge in some cases. The HEWs reported that they view the fasting time as an opportunity for children to get these foods in adequate amounts. They think that mothers give milk and meat to children only during fasting periods. All grandmothers and fathers in all the study communities, except one in Tahitay Maichew, feel that the feeding pattern does not change for children during fasting period. Likewise, HEWs reported that children are not expected to fast and can be given eggs and milk as long as these foods are available.

"It is not because of fasting that I don't give non-fasting foods to the child, but it is because of inaccessibility," (A mother from Hawizen)

Feeding with cups and bottles: During the data collection for this study, a few mothers were observed using spoons, plates, and cups in feeding their children while some were using their hands. During the interviews, some mothers stated they use a bottle to feed their children fenugreek juice and cow's milk. Others think that it is good to feed a child with a bottle and that breastmilk substitutes can replace breastmilk, but they are not doing so because breastmilk substitutes are unavailable. Other feeding utensils mothers reported using for child feeding are plastic cups, coffee cups, spoons, gourds, and tins. Bottle-feeding was mentioned by FGD participants as a widely used method to feed children when mothers are employed, when the mother has died, if the mother goes far away, and if she doesn't have enough breastmilk. Many of the discussants agreed that keeping the bottle clean is important. Community leaders in Tahitay Macho, however, said they do not consider bottles to be a good method of feeding.

“Feeding with a bottle in addition to breastmilk helps the child to grow strong. Besides it has the advantage of minimizing wastage of the liquid.” (A mother from Hawizen)

“Even if I am not doing it [using bottle], it helps to protect the child from illness, to grow fast and strong. I know it is good. It will also give me a break from breastfeeding.” (A mother from Raya Azebo)

“.....nowadays bottle feeding is not good for the child. But if the mother has a problem, this may be used as a solution.” (Community leader in Tahitay Macho)

Feeding frequency and quantity of complementary foods: Overall the feeding frequency of complementary foods across the three research communities ranges from one to five times per day. One child in Raya Azebo was reported to have eaten nothing in the previous day, due to illness. The feeding frequency for many of the children in the study communities was found to be below the minimum recommendation. The recommendation is to feed a child two to three times per day from 6 to 8 months of age; three to four times per day from 9 to 11 months; and five times a day for those aged 12 to 24 months, with additional snacks offered once or twice per day. The average feeding frequencies in all communities reported for this study were one time per day for children 6 to 11 months and two times for children aged 12 months and older.

Mothers described the quantity of complementary foods given using the size of their palm for solid foods such as injera and unleavened bread. They also used a coffee cup to measure other foods. The amount of food given to children ranged from one-quarter palm size to eight palms for solid foods, and from one-quarter of an Ethiopian coffee cup to four coffee cups for semisolid foods and liquids.

Mothers expressed their willingness to increase feeding frequency if told by health workers to do so. Mothers said the advice was useful to make the child grow fast and be healthy and strong. Some mothers, however, stated they would not increase the feeding frequency or the quantity, even if told to by health workers. Most said that they can't afford to feed their children more. Others expressed their belief that the frequency the child is feeding is enough for the adequate growth. Some mentioned that they believe the frequency of complementary feeding is adequate since it is given with breastmilk.

Some mothers said they are willing to increase the quantity of food if they are advised to do so for the sake of their child's health, strength, energy, satisfaction, and protection from diseases. A mother from Tahitay Maichew reported that she will also increase the amount if she is advised by elders, her mother, and neighbors.

“I will increase the amount of food. If I don't listen to their advice, they will insult me and treat me as a bad person.” (A mother from Tahitay Maichew)

“If the child is able to eat, why don't I give him more food? If he shows interest I will increase. But it is not always possible to do this because of economic constraints. His father is doing his best to bring food and if it is necessary I will stop eating and will feed my child more. Nothing is more important than your own child.” (A mother from Tahitay Maichew)

The majority of mothers stated they would not increase the quantity of food for economic reasons. Some thought that the food they are giving the child is enough and the child would vomit and get sick if given more food.

“Since I am the one preparing the food, I know how much the child needs. Who knows the child’s needs better than me? If that person who is telling me to increase the amount is helping me in any way by providing me foods, I will do that. Otherwise I won’t do it.” (A mother from Raya Azebo)

Regarding snacks, bread, unleavened bread, kollo, injera, and gruel were the food items most frequently mentioned during the FGDs with fathers, grandmothers, and community leaders in all three study communities. However, in most instances, accessibility of these foods was a concern, with no fruits or vegetables available in the area.

“About snacks, if we can get the food, what you told us is good. But we don’t have these foods. There are no fruits and foods like banana, orange, rice, pea, maize, teff, and wheat.” (Community leader from Tahitay Maichew)

Food preparation and hygiene: In all of the study communities, the decision about what to prepare and feed the child is the responsibility of the mother; sometimes they are assisted by grandmothers and daughters. The role of the father is to bring food from the market and the farm; in rare cases, fathers will feed and care for the child. In all households mothers were observed preparing food for their children and no one was assisting the mother in cooking or caring for the child except in one case where the neighbor was holding the child when the mother was cooking. During the opportunistic observations, almost all of the mothers were observed washing their own hands before preparing food, but none of them washed their children’s hands. In many cases the utensils used for cooking were not washed adequately. One household observed had a muddy floor, and in another flies were present. One mother covered the child’s stool with soil but was not seen washing her hands. In some households, leftover food was given to other children, and in one home the unfinished food was left in an uncovered container. A mother who gave the child bread with a mixture of water and sugar took the sugar from a cloth that was not clean.

Children’s appetite and health: Responses about children’s appetites were mixed. Mothers said they know their children have a good appetite if they are eating well and eat all the food or if they see that the children are healthy. Mothers also mentioned that children have poor appetites when they have health problems and vomiting. Some mothers stated that, normally, younger children are not able to eat much food and are expected to have limited appetite. Mothers said they know the child is satisfied if he eats all of the food served, pushes the food or mother’s hand away, or spits out the food. One of the mothers also reported that she measures the weight of the child by lifting him up and touches his abdomen to know if the child ate enough. Some mothers also reported that children will be happy and play if their belly is full and satisfied.

When mothers were asked how they encourage their children to eat, they spoke of methods such as changing the food to something the child likes, waiting awhile and trying again later, talking to the child and asking him to eat more, giving items for the child to play with, giving breastmilk, washing the child’s hand and face, and letting other family members eat in front of the child. Grandmothers from Tahitay Maichew pointed out that mothers encourage their children by preparing different types of food like unleavened bread, porridge, and gruel. Still, others do not use any kind of encouragement.

One mother reported that encouraging the child to eat is not important as it causes the child discomfort. During the opportunistic observation, some mothers were seen talking to their children, singing for them, and giving them things to play with. However, many others were doing nothing, and the children were left to eat by themselves.

Feeding during mother's absence: Some mothers said they take their children with them when they travel, especially when there is no food to leave for the child or no one to look after the child. Grandmothers, in-laws, sisters, elder siblings, and neighbors were frequently mentioned as persons that feed the child in the mother's absence. It was also reported that fathers are sometimes involved in preparing food and feeding the child at such times. When mothers are away from the home during the day, food is most often prepared ahead of time and left with another person to feed the child. Types of food mothers commonly leave for their children are gruel, porridge, injera with shiro wot, unleavened bread, egg, bread, and fenugreek juice. Fathers, grandmothers, and community leaders also mentioned that mothers will prepare food for the child, and somebody from the household or a neighbor will look after the child in her absence.

When mothers return, they said they will check the amount of food left to know how much the child has eaten. Others will observe the child, and if the child is crying or sucking the breast vigorously, they will know that the child didn't eat well.

"I spend more time on the farm. During this time his siblings or my husband feed the child and take care of him. If I am coming back soon I will prepare and leave porridge, unleavened bread, or injera, and they will feed the child these foods. But if I am away from home the whole day, my children will prepare unleavened bread and feed the child till I come." (A mother from Tahitay Macho)

Feeding during illness: Most mothers reported that their children had experienced one or more episodes of diarrhea, cough, fever, or other illness. Across the three communities, only a few of the children had never been sick. All mothers whose child had experienced illness reported that the child lost his appetite while ill. Some mothers tried different methods to stimulate appetite, such as giving a different variety of foods than usual, feeding hot gruel or fenugreek juice, and taking the sick child to the health facility to speed recovery. The types of food reported to be given at the time of illness were biscuit, unleavened bread, ambasha, porridge, boiled wheat, and popcorn. A few mothers reported they increased the frequency of breastfeeding and some gave cow's milk to their sick children. Some mothers said they used herbal medicine that is put on the child's head to relieve fever. On the other hand, some mothers reported doing nothing to help children recover except observing and hoping that the child got better.

"Encouraging a sick child to eat or suck breastmilk worsens vomiting and causes more discomfort to the child." (A mother from Tahitay Macho)

"When my child has fever and cough, I will use herb called "hanta." I will put this on the front of the child's head." (A mother from Hawizen)

"When my child is sick she will not take any type of food. So, we don't provide her any kind of food; we will only observe her. If it gets serious we will take her to the doctor." (A mother from Raya Azebo)

Some mothers reported they had never been advised by anyone about how to feed a sick child. Others reported they had been advised by HEWs, husbands, brothers, sisters, mothers, or neighbors to use different options, such as giving a variety of foods including cow's milk, feeding the child gruel, and taking the child to a health facility. One mother from Tahitay Maichew prefers not to talk to anyone about feeding the child because she thinks that the person could give her wrong information.

"My mother, neighbor, and friend told me to feed the child a variety of foods. Some told me to take him to a doctor, and others told me to give him traditional medicine, and I tried whatever they told me to do." (A mother from Tahitay Macho)

"The HEW advised me to feed the child gruel made of teff and visit the health post." (A mother from Hawizen).

Feeding during recovery from illness: Mothers reported that all children lost their appetite for about 2 weeks after illness. When asked about feeding during recovery, some mothers said they increased the frequency of breastfeeding during recovery, while others said that they gave a variety of foods to the child to encourage him to eat more. Mothers mentioned feeding various food types such as gruel, porridge, milk, fenugreek juice, unleavened bread, egg, injera with shiro wot. They thought this variety of foods would stimulate the child's appetite and speed recovery. Some mothers preferred to feed the sick child liquids instead of solid or semisolid foods because they are more easily taken by the child. Some mothers went back to the same amount they were feeding before the illness or decreased the amount of food given to the child. A few mothers reported that they gave only breastmilk to their children during recovery. When told that the recommendation is to increase the amount of food for 2 weeks after an episode of illness, many mothers in all three study areas said they would be willing to do so. However, they preferred to be advised by HEWs or health professionals about increasing the amount of food given. Mothers who were willing to increase the amount of food thought that this would help the child to be strong and recover soon. On the contrary, some mothers said they would not accept the recommendation because of unavailability of food or a belief that the child had lost its appetite and was not willing to eat.

"Increasing the amount of food will cause vomiting. So there is no need to increase the amount of food at this time." (A mother from Tahitay Macho)

"When my child is sick, she won't take any type of food. If the type of food is changed than the usual, she may be interested to eat more. So we need to feed the child different amount of foods and the child will learn to eat step by step." (A mother from Tahitay Macho)

4.2 What key factors influence mothers and family members to adopt recommended IYCF practices?

Maternal perceptions of children's health: Mothers, like FGD participants (grandmothers, fathers, community leaders), had different opinions about the health status of children in their communities. Some believed that their children are growing healthy and strong as compared with previous years. Others said that the area is drought prone, and there is not adequate food to feed children; as a result their children suffer from illnesses frequently.

The health status of children in the three communities was associated with the food they eat and the economic status of the family. Some mothers mentioned that children from well-to-do families are fed well, while children from poor families are not getting adequate types and amounts of food. It was also said during the FGDs that growth of children is dependent on the family's economic status and whether they own cattle or chicken. Study participants considered children from "rich" families to have better access to cow's milk and eggs, whereas those from poor families have to rely on the commonly given food items like unleavened bread, injera, and chibito.

"Children of this community are not growing healthy and strong due to lack of different types of foods, clean and safe water, poor hygiene and inaccessibility of health facility." (A mother from Tahitay Macho)

"Everything is according to what you have. If you are rich enough, you will feed your child very well and if not children can't be fed well. If you have it, you will feed the child porridge, gruel, and cow's milk. So children in the community are growing based on what they have. If we don't attend to their hygiene, they will be sick. If we treat them well and keep up their hygiene, they grow well." (A mother from Raya Azebo)

Hygiene and immunization were also mentioned as factors that affect children's health status. The FGD participant fathers in Raya Azebo and Hawzien pointed out that children playing with soil or dust and those not kept clean will be exposed to diseases. The fathers in Tahitay Maichew also reported on the role of immunization in keeping children healthy. The community leaders in Tahitay Macho indicated that famine and shortage of food are the two main factors affecting the health of children in the community.

Types of health messages: Study participant mothers had the opinion that they get support from HEWs and VCHPs. Some of them also reported that they have attended discussion sessions that were held in their kebeles and at the church. In addition, the HEWs and VCHPs reported that mothers also got advice from their own mothers, mothers-in-law, kebele leaders, and traditional birth attendants.

The type of advice received from HEWs included breastfeeding up to 6 months of age, immunization, hygiene, sanitation, food preparation for children, and the need to feed a variety of foods. Some mothers said they were given small books (family health card) that show different kinds of foods, and others reported seeing posters that compare a sick child with a well child.

A handful of mothers said they changed their practices after they got information on child feeding; some had been introducing cow's milk before 6 months and now have started to wait until 6 months of age. However, most of the mothers indicated it was not possible to practice what they had learned because of lack of food and time to prepare food or because of poor knowledge on how to prepare food.

"I attended discussions on child feeding at the place we work on soil conservation and whenever we go to the clinic to weigh our children. But we don't practice the lessons we got. The HEWs and VCHPs tell us what to do all the time. They even come to our home to teach us and tell us to give a balanced diet." (A mother from Hawzien)

In addition, some study participants mentioned that they had received a booklet that has a picture of vegetables, such as pepper and lettuce, and a child who is breastfeeding and another one who is fed with

spoon. Others reported that they had never received any kind of information on child feeding. Among mothers who reported not receiving advice from HEWs, some indicated that they learned from their previous experience and by watching how their mothers were caring for their children. One mother from Tahitay Maichew stated that only the mothers who take their children to the health post for fafa (supplementary food given to malnourished children) are advised on child feeding.

“I never had discussions with HEWs. There are people who do that because they are given fafa from the health post. Since I don’t take fafa, I will not go for these discussions. When I go to the health post for immunization, I see people discussing, but I won’t participate because I am not invited to do so. I hear them talking about hygiene, what to feed children, and how to feed children.” (A mother from Tahitay Macho)

FGD participants reported discussing the following health topics with HEWs, VCHPs, and trained traditional birth attendants: child and maternal nutrition, types of food, timely serving and preparation of food for children, personal and environmental hygiene in relation to latrine use, and the need for vaccinating children. Grandmothers in Tahitay Maichew reported that mothers also learn about child feeding from their mothers or from their mothers-in-law.

Maternal desire to learn IYCF: Almost all of the mothers interviewed expressed their willingness to learn more about child feeding because they want their children to grow healthy and strong. All of the FGD participants expressed their keen interest in knowing more about child feeding. Fathers also reflected their support for their spouses’ getting education on child feeding by saying they have no objection.

4.3 Who influences mothers? What is the current role of family and community members to support optimal IYCF practices?

Various sources of IYCF influence: The results from the study communities show that mothers get direct or indirect advice and support from various sources such as HEWs, VCHPs, and their own families. Mothers differed on whom they preferred to get advice from. Some said they prefer to be advised by their own mothers, while others prefer HEWs, VCHPs, brothers, neighbors, and “experienced” or “educated” persons. Some favored receiving advice from a female community worker. Mothers considered it easier to talk freely to a woman because she will understand child feeding issues better than a man. Mothers also indicated that whoever counsels them on child feeding and care must have a better understanding and knowledge than what they have.

“When a person comes to my home to teach me he/she should be experienced and educated, because the VCHPs don’t know much more than we do.” (A mother from Hawzien)

Child feeding responsibility: In many of the households visited, mothers take the primary responsibility in preparing food for the whole family as well as feeding the child. It was reported that sometimes the grandmothers, in-laws, and siblings assist mothers in preparing food, feeding, and caring for the child. The reported role of the father is to bring food and sometimes he may look after the child in the absence of the mother. It was reaffirmed from the FGDs (with fathers, grandmothers, or community leaders) that the mothers are mostly the ones who decide on food preparation and feeding the children. However, when it comes to purchasing family foods, fathers in Hawzien and Raya Azebo

and community leaders in Hawzien reported that both the husband and the mother are responsible. This fact was also supported by grandmothers in Hawzien, where one of the participants said the following:

“A mother and her husband together decide to buy food for the child, but mothers decide on what foods to prepare for the child.” (A grandmother in Hawzien)

Suggested ways to ensure IYCF: When asked about possible ways to ensure adequate child feeding, FGD participants suggested that it is important to work hard to increase food production and also to get support from the government. Appropriate education by HEWs on proper child feeding, child health through immunization, clean house and environment, and family planning methods and involvement of family members in IYCF were also among the points suggested.

4.4 The role of HEWs in supporting optimal IYCF

The formative study findings showed that both HEWs and VCHPs are active in the three study communities. A total of 15 HEWs were interviewed, all were women 20 to 36 years of age who completed 10th grade. All but one had taken the one-year HEW basic training program about 3 years ago; one HEW from Raya Azebo woreda was trained a year ago.

Trainings of HEWs: All HEWs had received short-term trainings related to child feeding and nutrition, such as community-based nutrition (CBN); outpatient therapeutic program (OTP); and infant, young child, and maternal nutrition. Most of them had also been trained on community conversation about HIV, HIV testing and counseling, adherence to antiretroviral therapy (ART) for prevention of mother-to-child transmission (PMTCT), family planning, attending delivery services, immunization, malaria prevention and testing, tuberculosis/leprosy, communicable disease control, environmental sanitation, and prevention of harmful traditional practices.

Home visits and supervision by HEWs: Most HEWs stated that they conduct 45 to 75 home visits in a week; two claimed to visit 100 to 200 households. The reported support provided to the families during the home visits included giving advice on breastfeeding, hygiene, treatment and prevention of malaria, family planning, immunization, antenatal care for pregnant women, HIV/AIDS testing and counseling, hygiene and latrine use, and child feeding practices. Furthermore, HEWs were engaged in teaching and provision of technical support to 22 to 60 CBN agents, 2 to 3 traditional birth attendants, and 4 to 44 health promoters. The HEWs stated that when they come to the health post once a month, they use the opportunity to educate mothers in areas of breastfeeding, supplementary feeding, vaccination and hygiene, but mainly on growth monitoring and demonstration of food preparation for the child. Some organize educational sessions in their communities.

Specific IYCF messages addressed: Health extension workers reported that in addressing child feeding, they focus on exclusive breastfeeding for 6 months, correct positioning during breastfeeding, introduction of semisolid food at 6 months, food hygiene, and treatment of diarrhea with oral rehydration salts. Two HEWs from Tahitay Maichew spoke of conducting a program 1 to 2 times per week during household visits to teach mothers about child feeding. Another told of providing fafa to those children who are underweight. All of the HEWs from the three study communities claimed that mothers want to learn more about child feeding. Most of the HEWs from Hawzien had been using the flip charts, drama, food demonstration, oral presentations, and family health cards. It was observed that all of the HEWs were doing something to make sure that children in their community grow well and

healthy. The majority of mothers mentioned counseling sessions, by HEWs and CBN workers during home visits, on specific issues on child feeding and general health messages.

Some mothers reported changing their infant feeding practices following the advice and recommendations from the HEWs.

“I got the information from the health facility and health extension workers. They taught me about the benefits of breastfeeding, starting of complementary feeding at 6 months, personal hygiene, and immunization benefits. This is different from my previous experience; for example, one of my children is not immunized and I was giving butter and water at birth...” (A mother from Tahitay Maichew)

Food insecurity concerns: Though the HEWs claimed to be actively involved in educating the mothers about child feeding with the goal of having healthy and strong children, certain major challenges prevail. Both knowledge about complementary feeding and the availability of a variety of foods are lacking. One HEW from Tahitay Maichew expressed his belief that mothers don't give the recommended amount of food to children 1 to 2 years of age because of economic problems. Another HEW from Hawizen also reported that mothers don't add milk, eggs, beans, lentils, peanuts, meat, chicken, or fish to children's porridge because of either lack of availability or poor knowledge.

Health education materials: Communication and teaching materials produced by governmental as well as nongovernmental agencies had reached the areas of the study communities including the guidelines for the community-based nutrition program. All but one HEW had received materials from the health center or woreda health office. These include a flip chart that shows a well-nourished and an undernourished child, a family health card (booklet) that contains all of the activities of the health extension package program except HIV/AIDS, posters that describe the effect of poor feeding on the child (resulting in kwashiorkor or marasmus) or the effects of proper feeding practices (well and healthy child). The HEWs found that the flip chart is very helpful to teach groups as it is visible from a distance, and the family health card were useful for working with mothers as they show how children are fed, the types of food for feeding children, and general hygiene issues.

Counseling skills of HEWs: Regarding their own knowledge and skills for counseling, almost all of the HEWs said they are keen to learn more about issues of child feeding practices and counseling services they render in the community. Most of the HEWs indicated that they have some knowledge but they need refresher courses that will help them do their work effectively. They requested additional trainings to help them upgrade their academic status and progress to a higher position in the health office. Some mentioned the need for teaching aids and strengthening the VCHPs' work through training and incentives. HEWs acknowledged the need to improve families' knowledge on feeding recommendations through relevant messages and advice. Yet most share the belief that children in their community are not getting enough food or the right types of food because of scarcity and the lack the financial ability to purchase key foods; and only to a lesser extent, because of a lack of knowledge about the need for additional foods. Most of the HEWs emphasized a need to help families take advantage of all foods currently available.

4.5 The role of VHCPs in supporting optimal IYCF

The voluntary community health promoters typically serve roles in the community such as reproductive health volunteers, trained traditional birth attendants, and community-based nutrition agents. Six

voluntary community health promoters—two from each community, three male and three female, with ages ranging from late 20s to late 40s—were interviewed from the three study communities. Half of these VCHPs had worked as health promoters in their communities for 7 to 14 years. The three youngest VCHPs had, at the time of the interview, been working for less than 9 months and had taken the basic training course for volunteers within the past year. They had completed at least 3rd-grade elementary education with most reaching 5th grade.

Trainings and service of VCHPs: The VCHPs had been trained on nutrition and child feeding, mostly on CBN and some on dosage of fafa for malnourished children. In addition, some of them had been trained on HIV/AIDS, condom use, prevention of malaria, maternal health, and delivery care. The VCHPs said they conduct household visits, community conversations, and group health education sessions, and they assist with some of the HEWs' other activities. In Hawzien, one VCHP was involved in checking the weight and age of children in the community to assess their nutritional status.

Weekly activities and home visits: The VCHPs described their weekly activities as visiting 5 to 30 households and providing education in groups covering issues regarding breastfeeding; child feeding practices, including type of food served and food preparation; personal and environmental hygiene; latrine use; harmful traditional practices; and family planning. Except for the training on CBN and on fafa provision for underweight children in one occasion for one of the VCHPs in Tahitay Macho, the VCHPs did not take formal training in child feeding. Most used the family health card to counsel mothers individually and some used the flip charts for group teaching. Beyond giving advice on certain child feeding practices, the VCHPs did not appear to do anything else to ensure children are getting enough food.

Need for teaching aids and training: One VCHP from Tahitay Macho and another one from Hawzien claimed they don't have any kind of teaching aids to use in the community. The family health card and the flip chart were considered to be the most popular and helpful for teaching individuals and groups, respectively. The VCHPs suggested more reading and teaching materials, incentives, and training for themselves on how to counsel about improved feeding practices of young children in order to undertake their duties effectively.

The need for training for VCHPs was confirmed during the counseling observations. Observers noted inconsistencies in advice VCHPs give: variable recommendations on quantity or frequency for the same age group; misconceptions about specific food items, such as perceived choking hazards; and encouragement of bottle feeding while mothers are away from home.

Food insecurity concerns: Like the HEWs, the VCHPs also highlighted the problem of food insecurity in the area. VCHPs expressed the opinion that communities would benefit from government support and provision of foods that are not available or affordable in the area. All of the VCHPs agreed that the children are not actually getting enough food and the right types of food because there is a shortage of food, primarily as a result of repeated drought and financial constraints to buy food from the market. They thought these problems would be alleviated to some extent if the mother worked hard to get adequate food and if other family members shared some of the household activities to reduce the work burden on mothers.

4.6 Role of the HEP and opportunities to optimize IYCF

The findings of this study reflect the importance of the HEP in enhancing infant and young child feeding efforts. Study participants in all categories indicated that HEP is a well-established system that operates in all three communities through trained HEWs who address a variety of health topics. Most of the HEW supervisors, HEWs, and VCHPs observed that the health status of the communities is relatively better than in the past. Although communities still face marked food shortages, the HEW supervisors sensed a noticeable improvement in latrine use, family planning, immunization coverage, bed net use, prevention and control of communicable diseases, awareness of child feeding practices, pregnancy follow-up and delivery services, and HIV testing services, leading to a decreased burden of disease. The HEW supervisors and the HEWs indicated that the Health Extension Program is responsible for the general health and nutrition status of the community. The HEWs and the VCHPs are considered the leading and key players in the system, who seem to be doing almost “all the work” to bring about a conducive environment at the grass-roots level.

Though IYCF is supposedly part of the maternal and child care package, CBN and OTP programs are streamlined in the system. Apparently, during the study period, outpatient therapeutic programs were actively treating malnourished children in all parts of the Tigray Region. In the three communities where interviews were conducted, OTP was not active in the health posts because the sites were close to the health center where the program runs. Thus, promotion of key IYCF feeding practices in an area where food scarcity is a problem was considered a huge concern. This study suggests that the situation may need an inter-sectoral collaborative partnership and actions to address the food insecurity issue. All supervisors had received training on feeding of young children except one in Hawzien who never had training on child nutrition. In addition, the supervisors in Tahitay Maichew were trained on CBN and OTP.

One of the HEW supervisors pointed out the relevance of monitoring and evaluation systems with appropriate responses to the problems identified in bringing about change in the community through the HEP. The supervisors also suggested the need to involve some influential people in the kebele administration to deliver information and messages to every household.

The supervisors of the HEWs also emphasized the need for additional trainings for the HEWs, VCHPs, and themselves to build their capacity in addressing IYCF issues with mothers and to be more confident in counseling mothers.

“There must be continuous education for families. The community should avoid certain beliefs; for example, no need to delay giving of meat or chicken to young children, starting complementary feeding practice at 6 months of age, not to sell household products like eggs, vegetables, or fruits....For HEWs, continuous training on child feeding practices is very important. Delivery skills should be emphasized, skills of food preparation should be stressed, and training for health promoters (CBN) should be stressed.” (HEW supervisor from Hawzien)

In general, the HEW supervisors reported working closely with the HEWs and VCHPs to guide and provide the necessary support as per the HEP. They have an annual and a monthly activity plan with the HEWs in which they schedule their supervision. All of the supervisors, except one in Raya Azebo, have a checklist, prepared at the woreda health office, which helps them follow and supervise the work of the health workers. Frequency of supervision varied: Some supervisors were visiting only one health

post in a week's or even in a month's time, while other visited as many as four health posts in a week's time. Sometimes a scheduled supervisory visit or community activity must be postponed. For instance, in Tahitay Maichew construction of a latrine was delayed due to engagement of members of the community in other activities. Limited access to motorcycles and other vehicles also presented challenges to timely outreach activities.

5. Summary and Implications for Programming

The Tigray research on infant and young child feeding identified the beliefs and current practices for breastfeeding and complementary feeding of children, along with key facilitating factors to improve young child feeding. The study also assessed the roles of different groups, including the family and community members, health extension workers and voluntary community health promoters in supporting IYCF in their respective communities.

5.1 IYCF practices and related beliefs and attitudes

The findings from this study showed that although mothers have basic breastfeeding and complementary feeding information, visible gaps remain, such as not practicing exclusive breastfeeding, the existence of faulty traditional beliefs, and specific misconceptions about breastfeeding and complementary feeding.

While mothers, families, and communities embrace the tradition of prolonged breastfeeding, certain beliefs prevent mothers from breastfeeding exclusively. Among the major misconceptions is the belief of mothers that giving only breastmilk without adding fenugreek juice will expose the baby to intestinal worms. Beliefs also keep mothers from providing extra breastfeeding for a sick child. Some mothers reported the belief that encouraging suckling when the child is ill will only contribute to its illness.

In Tigray Region, mothers, community members, and HEWs alike stressed the unavailability of diverse foods and lack of resources to purchase foods as the major reasons for not following recommended complementary feeding practices. Lack of food was also mentioned in explaining why mothers introduce complementary foods later than 6 months of age, fail to offer children a variety of food types, and are unable to give children extra meals when they are sick or recovering from illness.

The study identified misconceptions that affect complementary feeding habits. Mothers, community leaders, and even VCHPs hold widespread beliefs that children cannot digest meat or other animal products, that children will choke on thick porridges, that extra food when a child is sick will contribute to illness, that children will refuse to eat during or after sickness, and that bottle feeding is more sanitary than using cups or hands to feed.

Mothers and other community members, HEWs, VCHPs, and supervisors all expressed interest in learning about the recommended IYCF practices, as long as they trust that the person providing advice is properly trained and has reliable information.

Implications. Almost universal acceptance that breastfeeding should begin early and continue through at least 2 years of age and widespread belief in the benefits of breastfeeding simplify promotion of recommended IYCF practices through 6 months of age. Food scarcity in Tigray may actually contribute to exclusive breastfeeding, as mothers trust their own milk as a reliable food. Programs activities and materials on breastfeeding should build on its positive “brand” and address mothers’ concerns about illness.

Any promotion of complementary feeding in Tigray must take into account both real and perceived food scarcities. Several mothers expressed dismay over their inability to follow HEWs’ recommendations. To remain credible, those promoting variety in the diet must acknowledge the challenges families face.

At the same time, the program's activities may help families take better advantage of available foods. Program planners will want to identify interventions and messages that will resonate with mothers and enable them to adopt improved practices even in the face of entrenched traditions or misconceptions.

5.2 Community and family influences on mothers' feeding practices

The potential role of family influentials, HEWs, and VCHPs in providing IYCF support was also identified. Mothers get IYCF support from family influentials such as in-laws, grandmothers, fathers, community leaders, and traditional birth attendants. It was made clear that some mothers have changed their practices after receiving advice on child feeding. On the other hand, responses obtained from FGD participants were not always in line with standard IYCF recommendations. The faulty IYCF practices mentioned earlier are most often associated with advice from in-laws or community elders. While support provided from outside the family to a mother with a new baby is important, it is also necessary to shift the long-standing beliefs of family influentials.

HEW supervisors sensed noticeable improvements in the areas of environmental sanitation through latrine use, family planning, immunization coverage, bed net utilization, prevention and control of communicable diseases, awareness of recommended child feeding practices, pregnancy follow-up and delivery services, and HIV testing services leading to a decreased disease burden. Still, the problem of food insecurity throughout the communities was raised by study participants as a substantial obstacle to optimum IYCF practices.

Implications. The study's findings confirm that any intervention aimed at changing traditional practices related to child feeding must engage the family and community members who influence individual mothers' choices. These influentials can play a supportive role if they are brought on board with new ideas, and just as importantly to keep in mind, can interfere with promotion of recommended practices when they offer incorrect information or outmoded beliefs.

As this study shows, how the community's young children are nourished is the product of generations of tradition, and many traditional feeding practices are linked to deeply-held cultural and even spiritual beliefs.

5.3 HEW and VCHP capacities

This study looked at perceptions of staff and volunteer capacity from their own point of view and from the point of view of the families they serve. Capacity includes both *knowledge* of recommended IYCF practices and the *skills* needed to teach, train, or counsel.

Though all of the HEWs involved in this study had received short-term training in community-based nutrition (CBN), outpatient therapeutic program (OTP), and/or infant, young child, and maternal nutrition, they indicated their need for a focused IYCF training. Much of the training they have received addresses treatment of malnutrition and not prevention, which is A&T's focus. Most of the HEWs underscored that they have some knowledge, but they need refresher courses to help them do their work effectively, especially on the complementary feeding aspect. The findings from this study reveal that HEWs have reasonably better knowledge in the area of breastfeeding than in complementary feeding. Regarding their own knowledge and skills related to counseling, almost all of the HEWs are keen to improve those skills.

VCHPs acknowledged that most of them had not received any formal training in infant and young child feeding. Some HEWs mentioned the need for teaching aids and for strengthening VCHPs' work through training and incentives.

Mothers expressed that they prefer to be counseled by a trained person who has better IYCF understanding than they themselves do. For the most part, they respect the education that HEWs have received and accept their advice on IYCF. But both mothers and HEWs expressed concern about VCHPs' expertise in IYCF.

The need for IYCF refresher training was repeated by HEW supervisors, HEWs, and VCHPs. The supervisors of HEWs emphasized the need for additional trainings for the HEWs, VCHPs, and themselves to build capacity and confidence in addressing and counseling mothers about IYCF. Almost all of the HEWs said they were eager to learn more about IYCF and about the counseling services they are to render to the community.

Implications. Clearly, refresher training is needed for HEWs, to increase their understanding of IYCF practices as a way to prevent malnutrition and to build their counseling capabilities. Refresher training should give more attention to complementary feeding, since HEWs are currently better versed in breastfeeding than in complementary feeding practices.

In this study area, VCHPs have little credibility in infant and child feeding. Care should be given to the activities VCHPs are expected to carry out as part of an integrated IYCF campaign. If they are to interact with mothers, they will need both the knowledge and the skill sets to conduct the intervention in a way that engenders mothers' confidence.

Program planners should gain an understanding of why VCHPs have not been trained in IYCF. Presumably, this training should have been conducted by the HEWs. Do HEWs have the time and the skill to prepare VCHPs to carry out their IYCF responsibilities? This should be considered as the HEW training is designed.

The enthusiasm that supervisors, HEWs, and VCHPs have all expressed for learning more about IYCF bodes well for the training activities and for the large-scale program itself.