



**PREVALENCE OF OPTIMAL CHILD FEEDING PRACTICE AND ASSOCIATED FACTORS IN CHILDREN AGED 0- 24 MONTHS AMONG MOTHERS IN COFFEE PRODUCING HOUSEHOLD IN JIMMA ZONE .**



**By:**

**FELAGOT BEZUWORK (BSc in PHO)**

**THESIS TO BE SUBMITTED TO THE DEPARTMENT OF POPULATION AND FAMILY HEALTH, COLLEGE OF HEALTH SCIENCES, JIMMA UNIVERSITY; IN PARTIAL FULFILMENT FOR THE REQUIREMENTS FOR DEGREE OF MASTER OF SCIENCE IN HUMAN NUTRITION.**

**JUNE, 2015  
JIMMA, ETHIOPIA**

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**By:  
FELAGOT BEZUWORK (BSc in PHO)**

**ADVISORS: PROF.TEFERA BELACHEW (MD, MSC, PHD)  
DR.MULUEMEBET ABERA (BSC, MPH, PHD)  
KALIKIDAN HASSEN (MSC.PHD FELLOW)**

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## Abstract

### Introduction

Optimal Infant and Young Child Feeding (IYCF) is presented as, as a global public health recommendation infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional needs, they should receive safe and nutritionally adequate complementary food, while breastfeeding continues for up to two years of age or beyond. Exclusive breastfeeding from birth is possible except for a few rare medical conditions as specified by WHO and UNICEF, and virtually every mother can breastfeed. Although Ethiopian Government has developed IYCF guideline in 2005 and deployed health extension workers to give door to door services, the extent to which this intended behaviors are being practiced at grass root level is not well evaluated. Especially, there is no study which evaluated optimal child feeding practice among children in coffee growing households.

**Objective:** To assess the prevalence of optimal IYCF and associated factors among children less than 24 months in coffee producing households in Jimma zone, southwestern Ethiopia, from march- april,2015

**Methods:** A community based cross-sectional study was carried out from March 15,2015-April2015 among mothers of under two years old children in coffee producing households of Jimma zone. Multi-stage stratified clustered sampling design was used. Face to face interviewer questionnaire was used to get information from the respondents. Multivariable logistic regression was used to isolate independent predictors of Optimal IYCF practices. P-value less than 0.05 consider as statistically significant.

**Result:** The prevalence of optimal child feeding is 38.1% and timely initiation of breast feeding (TIBF), exclusive breast feeding(EBF), timely initiation of complementary(TICF), and continuation of breast feeding up 24 month (CBFup24month) was 80.8%,67.7%,41.7% and 91.3% respectively. On multivariable logistic regression model factors associated with optimal child feeding were, age of mother (AOR=1.051[95%CI:1.001,1.104]), age difference between spouse AOR=1.039[95%CI:1.002,1.079]) Age of father(AOR=0.947[95%CI:0.902,0.995]),mothers attend primary education (AOR=0.691[95%CI:1.002,1.079]) and household head attend secondary education (AOR=1.494[95%CI: 1, 005, 2.222]).

**Conclusion and recommendation:** Optimal IYFC practice is low in the study community. Socio-demographic variables educational status, mother age, educational status of the household head and the spouse and Age of father significantly associated optimal child feeding. Factors associated with optimal child feeding should be taken into account while designing intervention strategies and in promotion of strong community based networks using Health Extension Workers and local community resource people including women's development army. Findings for this study have significant input in the promotion of optimal child feeding practices for stunting reduction.

**KEY WORDS:** Optimal child feeding, coffee producing zone of Jimma, TIBF, EBF, TICF, Duration of breast feeding up to 24month.



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## Acronyms

AOR	Adjust odd ratio
BFC	Breast feeding continue
CBF	Continuation of breast Feeding
CF	Complementary Feeding
COR	Crude odd ratio
DC	Data collectors
EBF	Exclusive Breast milk
ENA	Essential nutritional assessment
NCHS	National Center for Health Statistics
NGO	Nongovernmental organization
IYCF	Infant young child feeding practice
TIBF	Timely initiation of Breast feeding
TICF	Timely initiation of complementary feeding
WHO	World Health organization
UNICEF	United Nations International Children's Emergency
PCA	Principal Component analysis
PI	Principal Investigator

# CHAPTER ONE: INTRODUCTION

## 1.1 Background

**Breastfeeding** is defined as feeding a child human breast milk. According to the American Academy of Pediatrics, human breast milk is preferred for all infants. This includes even premature and sick babies, with rare exceptions. It is the food least likely to cause allergic reactions; it is inexpensive; it is readily available at any hour of the day or night; babies accept the taste readily; and the antibodies in breast milk can help a baby resist infections(2).

Feeding practices during infancy are critical for the growth, development and health of a child during the first two years of life and of important for the early prevention of chronic degenerative diseases. For example, reviews of evidence on the effects on child health and growth of exclusive breastfeeding for six months have presented lower morbidity from gastrointestinal and allergic diseases, which in turn can prevent growth faltering due to such illnesses. In addition, evidence for the specific survival benefits of continued breastfeeding from 6 to 23 months points to continued protection against illness such as diarrhea and respiratory infection, with similar levels observed for both (3). Optimal breastfeeding is one of the most effective preventive health measures against diarrheal diseases and child mortality. Studies indicate that breast milk protects infants from infectious and chronic diseases (4). The growth and survival of a child continue after birth by deriving its nutrition through breast feeding for the first six months of life. It was noted that during weaning time the child needs high energy and about twice as much protein in relation to body weights of adult's. This necessitated for the provisions of adequate weaning diets ;for the child caring practices apart from socio-cultural, economic and demographic factors. Somehow, these practices constitute one of the most neglected determinants of young child malnutrition in spite of their important role in growth pattern of children.

Optimal Infant and Young Child Feeding (IYCF) is presented as, As a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional

needs, infants should receive safe and nutritionally adequate complementary foods while breastfeeding continues for up to two years of age or beyond. Exclusive breastfeeding from birth is possible except for a few rare medical conditions as specified by WHO and UNICEF and virtually every mother can breastfeed. In addition, a growing body of recent evidence underscores the important global recommendation that breastfeeding be initiated within the first hour of birth(1).

Early initiation of breastfeeding is characterized as putting the newborn to the breast within one hour of birth and is measured using the indicator: timely initiation of breastfeeding. Exclusive breastfeeding means that the infant receives only breast milk and the rate of exclusive breastfeeding is the percentage of infants, aged less than six months, who receive only breast milk and no other solids or liquids, including water, with the exception of drops or syrups consisting of vitamin or mineral supplements or medicines Exclusive breast feeding for the first four to six months, with appropriate complementary feeding for at least the first year of life, could prevent the death of an additional estimated 1.3 million infant each year(6).

Complementary feeding is feeding of child at time infant requires additional foods at six month. At this age children have high nutritional needs for rapid growth, and appropriate complementary feeding provides key nutrients (e.g. iron and other micronutrients, essential fatty acids, protein, energy, etc.). Inadequate complementary feeding lacking in quality and quantity can restrict growth and jeopardize child survival and development(1).

Optimal IYCF Optimal is essential for child growth. It ensures a child is protected from both under- and over-nutrition and their consequences later in life. An analysis of several studies has shown that breastfeeding may have a protective effect on the prevalence of obesity and is a cost-effective obesity intervention. Breastfeeding also has a number of benefits for maternal health. Initiation of breastfeeding immediately after delivery helps to contract the uterus, expel the placenta, and reduce bleeding. Breastfeeding may also lead to a more rapid return to pre-pregnancy weight. Exclusive breastfeeding may delay the return of fertility, thus reducing exposure to the risks associated with short birth intervals. In the longer term, mothers who breastfeed, especially for a longer duration, tend to be at lower risk of pre-menopausal breast

cancer and ovarian cancer. The period during pregnancy and a child's first two years of life are considered a "critical window of opportunity" for prevention of growth faltering and continued breastfeeding up to two years of age or beyond is necessary(1).

Malnutrition is one of the biggest health problems that the world currently faces and is associated with more than 41% of the deaths that occur annually in children from 6 to 24 months of age in developing countries which total approximately 2.3 million. World Health Organization in 2001 reported that 54% of all childhood mortality was attributable, directly or indirectly, to malnutrition. Sub-Saharan Africa has a high prevalence of the different types of malnutrition, namely stunting, wasting and underweight(7, 8).

Adequate nutrition is essential during childhood to ensure healthy growth, proper organ formation and function, a strong immune system, and neurological and cognitive development economic growth and human development require well nourished populations who can learn new skills, think critically and contribute to their communities. Child malnutrition impacts cognitive function and contributes to poverty through impeding individuals' ability to lead productive lives(9).

In Ethiopia poor feeding practices and shortfall in food intake are the most important direct factors responsible for malnutrition and illness among children and a combination of nutritionally inferior diets and improper feeding practices are major contributing factors to the development of childhood malnutrition. Complementary feeding improvement should be of highest priority for nutrition of infant and young children because of its crucial role in preventing mortality and enhancing child development(10,11).

## **1.2 STATEMENT OF THE PROBLEM**

The World Health Organization estimates that approximately 150 million children younger than 5 years in developing countries are underweight and an additional 200 million children are stunted(12).Under nutrition remains a devastating problem in many developing countries affecting over 815 million people causing more than one- half of child death (13). In Gambia which is the smallest country in West Africa, The infant mortality rate accounts for 103 per every 1000 live births(14). The prevalence of under-fives suffering from underweight is 18%, while 10% of under-fives are suffering from wasting and 24% from stunting (2007–2011 according to UNICEF)(15).

In Ethiopia, child malnutrition continues to be a major public health problem. One in two children under the age of five are stunted (too short for their age) and one in four are severely stunted. These very high levels of malnutrition contribute to the country's high under-five mortality rate, estimated at 140.1/1000 live births. International experts have ranked Ethiopia as the sixth highest country in the world in terms of the number of under-five deaths , with over 472,000 under-fives dying in the year 2000(16). Analysis show that 58% of all under-five deaths in Ethiopia stem either directly or indirectly from malnutrition , even in its milder forms (17).In order to reduce these high under-five mortality and morbidity rates, concerted efforts are required to improve nutritional status in the early years of life.

According to the Ethiopian National Demographic Health Survey (2011), the prevalence of both wasting and stunting in children under 5 years is very high (10% and 44% respectively) while the situation in older children is not so well known(18).Although, WHO, UNICEF and Ethiopia's National breastfeeding policy recommended that infants be exclusively breastfed from birth to 6 months and continue breastfeeding to 24 months. The poor breastfeeding and inadequate complementary feeding associated with food taboo explained the protein energy malnutrition level in children as they grow older.

Progress in improving infant and young child feeding practices in the developing world has been remarkably slow due to several factors. It is estimated that among children living in the 42 countries with 90% of global child deaths, a package of effective nutrition interventions could save 25% of childhood deaths each year(19,20).

Appropriate feeding practices are of fundamental importance for the survival, growth, development, health and nutrition of infants and young children. It is argued that promotion of exclusive breastfeeding (EBF) for the first six months is the most effective child health intervention currently feasible for implementation at population level in low income countries and it could lower infant mortality by 13%. Infants who had not been breastfed had a 10-fold higher risk of dying of any cause and a 3-fold higher risk of being hospitalized for any cause compared with those who had been predominantly breastfed(21).

In Ethiopia, although breastfeeding is nearly universal, its practices, however, are not optimal. Pre-lacteal feeding is common. Exclusive breastfeeding, on the other hand, is relatively short, with a median duration of 2.1 months. Contrary to WHO recommendations, only around one in three children age 4-5 months is exclusively breastfed. Early breastfeeding initiation was also documented low with significant regional variations(2).

## **CHAPTER TWO: REVIEW OF LITRETUARE**

### **2.1 Review of available evidence**

There is a universal consensus about the fundamental importance of breastfeeding for children's adequate growth and development and for their physical and mental health. All mothers should have access to skilled support to initiate and give colostrum and sustain exclusive breastfeeding for 6 months and ensure the timely introduction of adequate and safe complementary foods with continued breastfeeding up to two years or beyond. universally accepted as essential elements for the satisfactory growth and development of infants as well as for prevention of childhood illness(22,23)

#### **2.1.1 Breast feeding initiation**

According to DHS in 2011. Fifty-two percent of infants started breastfeeding within one hour of birth, and 80 percent, within the first day. There was also considerable variation by region. Initiation of breastfeeding within one hour was lowest in the Amhara and Somali regions (38% and 40 %, respectively), and highest in the SNNP and Dire Dawa regions (67 % and 66 %, respectively). The likelihood that a child is breastfed in the first hour after birth increases with the mother's educational status and wealth quintile(18).

Cross sectional study conducted in arba minch Almost all mothers (98.2%) had ever breastfed their children in the rural communities of Arba Minch Zuria. However, a large number of mothers (42.8%) started breastfeeding after one hour of childbirth. More than three-fourth (89%) of mothers provided colostrum to their infants' provision of colostrum considered as vaccines given to infants to prevent diseases. Similarly in-depth interview with mothers showed a majority of mothers reported that they have given first milk for their child and have good attitude toward provision of colostrum for newborn infants. while others discarded the first milk until the white milk was produced (24,25) .

Similarly in jimma arjo wereda the finding was Only 24.6% of mothers breastfed their infants optimally. Among those who ever breastfed, more than half of mothers (62.6%) initiated breastfeeding within first hour of delivery and 272 (72.5%) gave colostrum to their infants. Similarly In study conducted jimma zone the prevalence of initiating breastfeeding within the period of one hour to one day 23.9% (26,27).

In island 60.6% of the participants initiated breastfeeding the same day after delivery, while 39.4% started to nurse their baby 24 hours after delivery. It has been observed that 42.6% who had a normal vaginal delivery initiated breastfeeding immediately or within minutes after birth compared to 23.9% of those who had a caesarean type of delivery (28).

### **2.1.2 Factor affecting Breast feeding initiation**

Delayed initiation of breastfeeding was significantly associated with lack of maternal education, knowledge gap about the duration of exclusive breastfeeding, home delivery without the help of health professionals and deficits of primary health education about breastfeeding initiation. Maternal education status was significantly associated with delayed initiation of breastfeeding. Women who did not attend any formal education were nearly twice as likely not to initiate breastfeeding in a timely manner as compared to those women who attended primary school and higher education. Similarly, mothers who had knowledge about the duration of exclusive breastfeeding were 61% less likely to delay breastfeeding initiation than mothers who had no knowledge about the duration of exclusive breastfeeding. The women whose delivery was attended by skilled health professionals were 48% less likely to delay breastfeeding initiation when compared with those who were attended by their relatives.

Community-based health education given at different occasion targeted to promote optimal breastfeeding was positively associated with timely initiation of breastfeeding practices. Women who attended health education about breastfeeding practices were 26% more likely to initiate timely breastfeeding than who did not attend (24).



### **2.1.3 Prevalence of Exclusive breast feeding**

Exclusive breastfeeding during the first six months after birth is not widely practiced in Ethiopia. Currently, mothers exclusively breastfeed approximately half of children under six months(52%) (18).

In study conducted in Zhejiang Province, in China The exclusive breastfeeding rate was lower than the national target (80% till four months of age) in all locations and at all. But in island it was only 17.9% of the women gave their infants only breast milk during the first six months(28,29)

In Gonder The results of the study revealed that about 393 (52.5%) of mothers practiced exclusive breastfeeding to their infants during the first 6 months of age. In Arba minch, Two-hundred thirteen mothers (55.6%) exclusively breastfed their children for six months. However, 120 (31.33%) mothers gave additional food before six months. More than one-third of mothers (35.50%) used cup to feed their infants. Among prelacteal feeds, 14 (41.18%) of mothers provided water as they believed that it used to remove waste from the infant's stomach(24,28).

In Study conducted in arjo wereda, One hundred eighty three (47.91%) mothers reported to have exclusively breastfed. In Jimma Even though the majority of the respondents 396(96.6%)fed their infant's breast milk, the prevalence of exclusive breastfeeding was 60.0% of the mothers (25,26).Similarly study in Bale zone Goba wereda The prevalence of exclusive breastfeeding for infants' aged less than six months in the study area was 71.3% as measured by last 24 hours recall period preceding the survey date(31).

Additionally study in injibara wereda awi zone revealed that the prevalence of exclusive breastfeeding practice was Forty four percent and 65% among employed and unemployed mothers respectively(32).

### **2.1.4 Determinants of exclusive breast feeding**

Study conducted in Gondar, Mothers having an educational status of primary school (grades 1–8) were less likely practicing nonexclusive breastfeeding compared to mothers with no formal education. On the contrary governmental employed mothers were more likely practicing

nonexclusive breastfeeding to infants within the first 6 months compared to housewife (30).In the study Bale zone Goba wereda ,Maternal employment status and age of infants were significant predictors of exclusive breastfeeding. The adjusted odds of unemployed mothers practicing exclusive breastfeeding was 10.4 times the odds of employed mothers(31).

In the study conducted in injibara wereda awi zone among unemployed Mothers who were not supported by their husbands were 1.9 times more likely to not breast feed exclusively than those who were supported. Mothers who had no Knowledge about the recommended duration of EBF were 2.8 times more likely to not breast feed exclusively than those who had Knowledge. Mothers who didn't practiced timely initiation of BF were 2.9 times more likely to not breast feed exclusively than who practiced. Mothers who did not get health information about exclusive breastfeeding were 2.2 times more likely to not breast feed exclusively than those who got. Among employed ones Place of birth, religious fathers encourage of exclusive breastfeeding and maternal ages of 18-23 were independent predictors of exclusive breast feeding of employed mothers. Mothers who delivered at health facility were 4.4 times more likely to breast feed exclusively than those who delivered at home. Mothers who were encouraged by religious fathers about EBF were 2.7 times more likely to breast feed exclusively than those who were not encouraged . Mothers whose ages of 18-23 were 9 times more likely to breast feed exclusively than those whose ages were thirty and above (32).

#### **2.1.5.Prevalence of complementary feeding**

In study conducted in northern Ethiopia, Approximately 79.7% of mothers introduced complementary feeding at 6 months age of the children as per recommended. Only 9 (2.1%) mothers introduced complementary feeding early before 6 month, 68 (15.9%) mothers initiated late after 6 month and 10 (2.3%) mothers did not start complementary feeding at all(33).In harar,Easteren Ethiopia, 121(60.5%) of women were initiate complementary timely. Thirty eight (19.0%) of mothers were early initiate complementary feeding(34).

#### **2.1.6 Factors affecting complementary feeding**

In Study conducted in the Nepal, It was found that mothers educational level, type of family and religion of the family were strongly associated with appropriate feeding. Educated mother had high rate of ideal feeding than the uneducated mother ( $p=0.008$ ). Uneducated mothers were

almost 2 times more likely to have inappropriate feeding practices whereas father's education was not found to be a factor Mothers from joint family had high chance of feeding their child appropriately than mother from nuclear family. Similarly, religion ( $p=0.03$ ) also had significantly affected the ideal feeding. Mothers who did not receive feeding advice in immunization clinic had 1.7 times more chance to have inappropriate feeding practices than the mothers who received advice in immunization clinic (35)

In Harar Fifty nine percent of women whose age from 15-24 years old were initiate timely, 64.7% of women whose age 25-34 years were initiate timely. There was consistent improvement of timely initiation of complementary with their educational status that illiterates, 1-8 grade completed, 9-12 grade completed and 12+ were 52.8%, 55.0%, 82.4%, and 77.8% respectively. However, 72.7% of government employee mothers were initiate complementary feeding to their young child. Regarding to occupation, only 66.7% of house wives were initiated complementary feeding timely. Urban resident women were initiate complementary feeding timely than rural residents 66.3% and 54.2% respectively. Approximately two third (64.4%) of married women were initiate complementary feeding timely. Child whose father government employee and have tertiary education were initiate complementary feeding timely and Women who had history of antenatal care during their youngest child pregnancy period were initiate complementary feeding timely than their counter parts 68.3% and 42.6% respectively. Among women who give their both at health institution, 71.1% of them were initiate complementary feeding timely. Women who had post natal visit were more likely initiate complementary feeding timely(34).

In cross sectional community based study in Arjo wereda , Mothers who had information about exclusive breastfeeding to six months were less likely early introduced additional food compared to who had no information about exclusive breastfeeding. Keeping livestock is positively associated with early introduction of complementary food. Mothers who gave some of their time to keep livestock were more likely early introduced complementary food before 6 months compared to their counterparts (36).

### **2.1.7 prevalence and Factors Influencing Breastfeeding Duration**

The duration of breastfeeding in Ethiopia is long. The proportion of children who are currently breastfeeding is 95 percent or more for children up to age 12-17 months and then declines to 84 percent of children age 18-23 months(18).

In study carried out in island indicate that the majority of the mothers completely terminate breastfeeding around 19–24 months (26.0%). cessation of breastfeeding beyond 24 months is more prevalent among participants who never drink alcoholic beverages. As far as education is concerned, it has been seen that irrespective of the level of schooling attained, mothers usually stop breastfeeding their infants within 24 months. In addition, even if women are employed as professionals (28.3%) or are housewives (26.3%), they are more likely to discontinue breastfeeding within 24 months(28).

## **2.2 Significant of the study**

The first two of life is important to ensure optimal child growth, health, and development. Good diet in the first two years of life lays the foundation for future health, growth, and educational achievement. Children at this time are especially vulnerable to irreparable growth retardation, damaged mental development, micronutrient deficiencies, and common childhood illnesses (22).

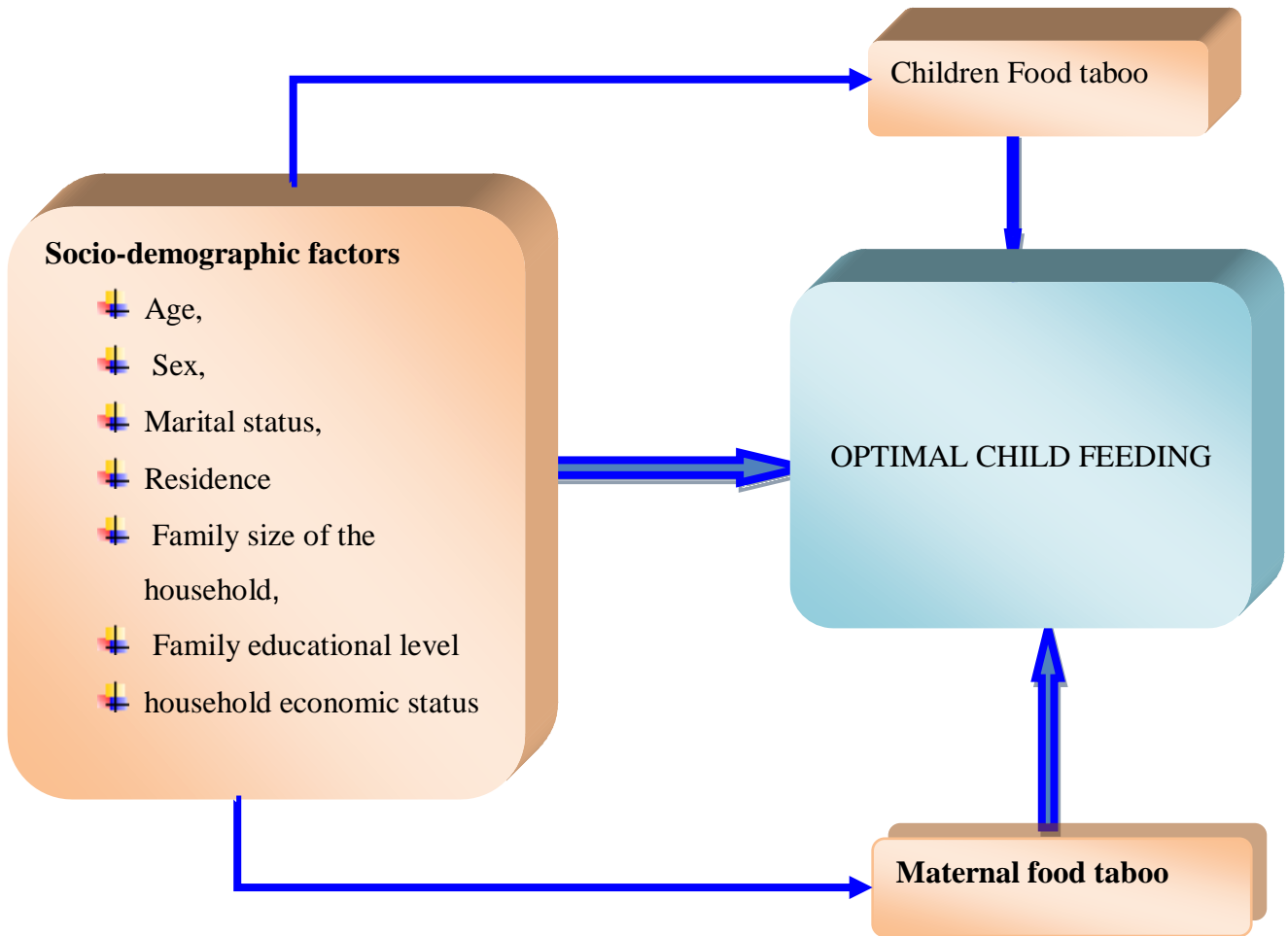
In developing countries many babies have born malnourished due to poor maternal nutrition before and during pregnancy. It may be further aggravated by poor breastfeeding practice which in turn many factors influence how and for how long babies are breastfed. Although Ethiopian Government has developed IYCF guideline in 2005 and deployed health extension workers to give door to door services, the extent to which this intended behaviors are being practiced at grass root level is not well evaluated.

Despite the fact that many studies conducted on optimal breastfeeding, mixing-up of timely initiation of breastfeeding ,excusive breast feeding, complementary feeding and breast feed continue up to 24 months was not observed. Most studies done on the indicators of optimal breastfeeding have assessed timely initiation of breastfeeding, exclusive breastfeeding and complementary feeding separately. Besides, there was no research suggesting the contribution of timely initiation of breastfeeding ,exclusive breastfeeding and complementary feeding together for the success of optimal child feeding in particular. Most specially, there is no study which evaluated optimal child feeding practice among children in coffee producing households. So that, The finding of this study would serve as baseline information for those who are interested in carrying out further research.

Therefore, this study will assess the prevalence of optimal IYCF and associated factors among children less than 24 months in coffee producing households. The finding of this study is expected to contribute in filling the gap. Moreover, it will contribute in creating awareness that sub optimal child feeding affect balanced diet and child proper growth and can provide policy

makers and NGOs with relevant information for future planning and interventions of appropriate strategies to promote and maintain breastfeeding practices of Ethiopian mother.

## Conceptual frame work



**Figure 1** schematic presentation factor affecting optimal child feeding in children 0-24 months in Jimma zone coffee producing woreda ,south west Ethiopia 2015.

Source: synthesized by investigator based on literature

### **3. OBJECTIVES**

#### **3.1 General objective**

- ❖ To assess the prevalence of optimal IYCF and associated factors among children less than 24 months in coffee producing households in Jimma zone, southwestern Ethiopia, from march- april,2015

#### **3.2 Specific Objective**

- ❖ To determine the prevalence of optimal child feeding among coffee producing household, Jimma zone
- ❖ To assess factors associated with optimal child feeding of under two years old children in coffee producing household ,Jimma zone



## **4: METHODS AND MATERIALS**

### **4.1. Study area and period**

The study was conducted in three selected weredas (sub-districts) of coffee producing areas in Jimma Zone, Oromia region, southwestern Ethiopia, having a total of 17 weredas and two town administrations eleven of them are coffee producers. It has a latitude and longitude of 7°40'N 36°50'E. It is one of the zones of the Ethiopian Region of Oromia. Jimma is named for the former Kingdom of Jimma, which was absorbed into the former province of Kaffa in 1932. Jimma is bordered on the south by the Southern Nations, Nationalities and Peoples Region, the northwest by Illubabor, on the north by East Welega, and on the northeast by west Shewa; part of the boundary with East Shewa is defined by the Gibe River. The highest point in this zone is Mount Maigudo (2,386 m). Towns and cities in Jimma include Agaro, Genet and Saqqa Based on the 2007 Census conducted by the CSA, this Zone has a total population of 2,486,155, an increase of 26.76% over the 1994 census, of whom 1,250,527 are men and 1,235,628 and a total number of rural household 402,569, the area is found 1200-2500m above sea level and categorized under climatic condition of Dega 15%, Weynadega 67% and Kolla 18% having an annual rainfall of 1200-2500mm. The study was conducted from March to April 2015 (37,38).

### **4.2. Study design:**

A community based cross-sectional study.

### **4.3. Population**

#### **4.3.1 Source population**

All mothers or care givers having children less than 2 years old during the study period who are members of coffee producing households.

#### **4.3.2 Study population**

Mothers or care givers with under 2 years old children who are members in selected coffee producing households

### **4.4. Sample size and Sampling technique**

Sample size is calculated assuming Optimal child feeding practice an ultimate or central core outcome of the study variables and for its being the one which gives us the largest sample size

among all the objectives stated (based on study done in jimma zone the prevalence of exclusive breastfeeding was 60.0%(27)

The sample size was determined using a formula for estimation of single population proportion:

$$n = \frac{(Z_{\alpha/2})^2 p (1-p)}{d^2}$$

$$n = \frac{(1.96)^2 0.6(1-0.6)}{(0.05)^2}$$

$$= .7203/.0025$$

=368.7 so n = 369 and To overcome the design effect we multiply by two.

Therefore, 2x369=738

D=Degree of precision (margin of error) of 5%.

$z_{\alpha/2}$ =Standard normal variable at 95% confidence level (1.96)

P = prevalence excusive breast feeding in Jimma zone is 60%(27)

#### **4.5 Sampling procedure**

Multi-stage stratified clustered sampling was used to collect data from respondents across the selected woredas in Jimma zone. At first stage, three of the nine weredas of Jimma zone that potentially produce coffee were selected by simple random sampling. Then population in the selected woredas were stratified by urban and rural area of residence. Allocating the sample proportionally for the urban and rural then we select gotes as the smallest administrative unit; eligible households was clustered by gote. All selection and allocations were made based on Wereda's or Kebeles registry of households.



Figure 2 Schematic presentation of sampling technique

#### **4.6 Exclusion criteria**

Mothers who were seriously ill and unable to communicate and those mothers with sick infant were excluded from the study.

#### **4.7 Inclusion criteria**

All children ages less than 24 months whose mother registered as permanent resident in the weredas.

#### **4.8 Variables**

##### **Independent Variables**

##### **❖ Socio-demographic factors**

- ✚ Age,
- ✚ Sex
- ✚ Marital status
- ✚ Educational status
- ✚ Family size of the household
- ✚ Family income
- ✚ Family educational level

##### **❖ Food taboos for mothers**

##### **❖ Food taboos for children**

##### **Dependent variable**

##### **❖ Optimal child feeding**

#### **4.9. Data collection instrument**

Data were collected using a validated questionnaire adopted from EDHS &WHO. The adopted questionnaire was contextualized to the local situation and to the research objectives. semi structured; pre-tested and interview administered questionnaire were used to collect relevant information based on the study objectives. The questionnaire was initially prepared in English and then translated in to Afan Oromo. The Afan Oromo version was again translated back to

English by other person who knows both language to check for any inconsistencies or distortions in the meaning of words and concept.

#### **4.10. Data collectors training and Pre-testing**

10 data collection facilitators who are Degree holders in public health officer or nursing and 1MSc in nutrition holder supervisor who knew the local language and culture were recruited for questionnaire administration and supervision, respectively. Two days training was given for data collection facilitators and supervisors, both before and after the pretest, on the objectives of the study, the contents of the questionnaire, issues related to the confidentiality of the responses and the rights of respondents. One week prior to data collection, a pretest was conducted in limu seka that was not included in the main survey, to ensure clarity of questions. The result of the pretest was discussed, and some correction and changes like: wordings, logical sequence and skip patterns were revised before the questionnaire was finalized. To ensure maximal response, mothers assured that the information gathered was treated confidentially by strongly emphasizing the anonymity of questionnaire responses.

Pre-testing of the questionnaire were conducted on 5 % of the study household involving all trained data collectors. After pre-test, necessary modifications were made based on the nature of gaps identified in the questionnaire and the process. Reaction of the respondents towards questions, interview time to the study instrument and logistic materials were identified by data collectors.

#### **4.11 Data collection process**

Interviewer administered face to face data collection technique was used in a study Subjects' usual place of residence. Semi-structured was used.

#### **4.12. Data Quality control**

To maintain the data quality: Questionnaires were prepared first in English then translated to Afan Oromo then back to English by another person in order to ensure consistency. Completed questionnaires were checked for their completeness and consistency at every step of data management. The quality of the data was assured by using validated questionnaire, translation, retranslation and pre-test of the questionnaire. A local language were used to collect the data for more understanding of the questions. The facilitators and Supervisor were trained for two days

before and after pretest. Feedback from the supervisor and facilitators were incorporated to enrich the questionnaire and make more applicable to the local situations. During questionnaire administration unclear and ambiguous matters were clarified for the respondents. The principal investigator and supervisors checked each questionnaire daily and Random check was conducted by the investigator. Moreover, data entry were made by using EpiData to control skip patterns and allow double entry.

#### **4.13. Data processing and Analysis**

The data were checked for missing values , outliers, completeness and consistency. The data were entered by using EPI data verion 3.1 software, then the data were exported to SPSS version 20 program for analysis. Descriptive statistics was conducted and the results were presented by tables, graphs and figures. PCA was used for wealth index from 27 items and ranked in tertial. Questions which address optimal child feeding were computed. Bivariate analyses were carried out to identify candidate variables for the multivariable model. Variables having a p-value <0.25 in the bivariate analysis were included in to the multivariate analysis, in the multi variate analysis variables having p- value < 0.05 were declared as a significant factor.

#### **4.14. Ethical consideration**

Ethical clearance was sought from the ethical clearance committee of Jimma University College of health Sciences to conduct the study after the approval of the proposal. Letter of permission was obtained from jimma Zone health bureau, Manna, Gomma and limmu kosa Woreda health office. The parents were clearly informed about the objective of the study. The respondents were assured that they have the right to withdraw from the study at any time. The respondents' confidentiality was kept secret by avoiding respondents' identifiers (such as name of the respondents) on the final report.

#### **4.15. Dissemination plan**

The results of the study will be submitted to Jimma university college of health sciences department of population and family health it will also be presented to Jimma university scientific community on different conferences. The result will be disseminated also to the Regional Health Bureau zonal health bureau, Woreda Health office, Education Bureau, different issue concerned NGO and other stakeholders. Besides this publication of the study on international journals will be considered.

#### **4.16. Operational Definition**

**Optimal child feeding:** means breast initiation within one hour after delivery exclusively breastfed for the first six months and timely complementary foods while breastfeeding continues for up to two years of age or beyond. There are different questions those address this definition during computing them answer those fulfill all of 4 indicator 1 was given and for those who didn't fulfill the one of indicator 0 was given(1).

**Sub optimal child feeding:** If one of criteria mentioned on optimal child feeding definition missed it is considered sub optimal child feeding practice.

**Infant:** A person from birth to 12 months of age.

**Mixed feeding:** feeding both breast milk and other foods or liquids.

**Food taboo:** A social or religious custom prohibiting or restricting eating food.

**Child care:** Any participation contributed on rational or activities involving on promoting and enhancing better caring practices on meeting optimal exclusive breastfeeding, complementary feeding and sick child feeding.

**Optimal child care** (based on national guide line of Ethiopia); A “caregiver say” on Exclusive breast feeding and optimal complimentary feeding and Seek child feeding

**Wealth index:** was developed based ownership of fixed asset using PCA then It was ranked by tertial and recoded as low, middle and high.

## CHAPTER FIVE: RESULTS

### 5.1 Socio demographic characteristics of the study subject

From a total of 749 samples involved in the study 195 (26%) and 554(74%) were from urban and rural areas, respectively. Of these seven hundred and twenty (96.1%) were married five (0.7%) were single ten(1.3%) were widowed and 14(1.9%) were divorced. Respondent's age group ranged from 15-60 years. The mean ( $\pm$ SD) age of the mothers was 26.97years ( $\pm$ 6.85) While six hundred seventy nine (90.7%) have number of dependent family (none working group family. whose age less than 15 and greater than 65. Majority of the Respondents have four hundred eighty five (64.8%) 1-5 family size While Educational status is seen by categorizing head and spouse education. From household head educational status majority of them three hundred forty one (45.5%) were attend primary education. From spouse those attend primary education was account three hundred twenty four (43.3%). About the respondent religion five hundred ninthly nine (80%) are Muslim, one hundred thirty one (17.5%) are orthodox tewahido followed by nineteen (2.5%) followers of protestant. The predominant ethnic group is Oromo accounting five hundred eighty nine (78.6%) followed by Amhara sixty eight (9.1%). Most of mother age at delivery fall to 15-19 account three hundred thirty eight (45.1%)(Table1).

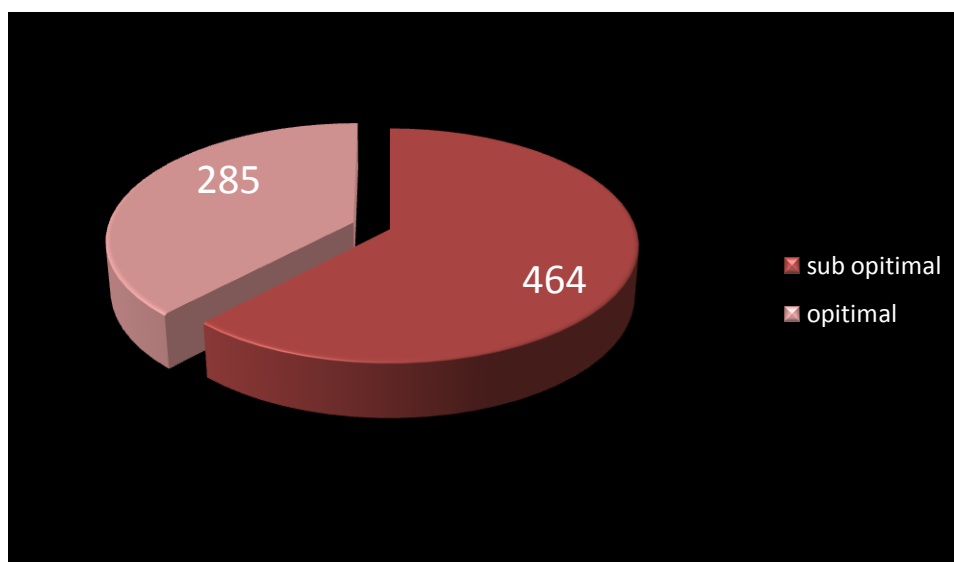


**Table Socio demographic Characteristics of the respondents in coffee producing wereda,Jimma zone,southern Ethiopia,june,2015**

<b>Setting</b>	<b>Frequency</b>	<b>Percent</b>
<b>Urban</b>	195	26.0
<b>Rural</b>	554	74.0
<b>Family size</b>		
<b>1-5</b>	485	64.8
<b>6-10</b>	254	33.9
<b>&gt;10</b>	10	1.3
<b>Marital status</b>		
<b>single</b>	5	.7
<b>married</b>	720	96.1
<b>widowed</b>	10	1.3
<b>divorced</b>	14	1.9
<b>Marital form</b>		
<b>Polygamy</b>	30	4.7
<b>mono</b>	714	95.3
<b>Household head's Educational status</b>		
<b>no formal education</b>	188	25.1
<b>primary education</b>	341	45.5
<b>secondary education and above</b>	220	29.4
<b>Spouse's education</b>		
<b>no formal education</b>	243	32.9
<b>primary education</b>	324	43.3
<b>secondary education</b>	177	23.8
<b>Ethnicity</b>		
<b>Oromo</b>	589	78.7
<b>Amhara</b>	68	9.1
<b>Dawuro</b>	37	4.9
<b>Other(silxe.tigre,etc)</b>	55	7.3
<b>Religion</b>		
<b>orthodox</b>	131	17.5
<b>Muslim</b>	599	80.0
<b>protestant</b>	19	2.5
<b>Age of mother at first birth</b>		
<b>10-14</b>	15	2.0
<b>15-19</b>	338	45.1
<b>20-24</b>	318	42.7
<b>25-29</b>	69	9.8
<b>30-34</b>	3	.4

## 5.2 Optimal child feeding practice

Our analyses of the components of optimal child feeding showed that four hundred sixty four (61.9%) were not practicing optimal child feeding, while two hundred eighty five (38.1%) practiced optimal child feeding(Figure 1)



**Figure Frequency of optimal child feeding mother in coffee producing house hold in Jimma zone south west Ethiopia, June, 2015**

For mother who has not ever practice optimal child feeding, the perceived reasons were. For Giving liquid after birth during 0-6month was Breast immediately doesn't produce milk (8.2%) Child may starve(15.7%),to moisten /hydrate the mouth throat(53.0%)and due to societal norm and other. (Table3)

**Table .The association of reasons for giving the food/liquid after birth with optimal child feeding in coffee producing wereda Jimma zone, south west Ethiopia. June 2015**

Variables		Child Feeding practice		P
		Suboptimal	Optimal	
Breast immediately doesn't produce milk	Yes	16(8.2)	16(25.4%)	<0.0001
	No	180(91.8%)	47(74.6%)	
child may starve	yes	31(15.7%)	11(17.5%)	.734
	No	167(84.3%)	52(82.5%)	
To moisten /hydrate the mouth and throat	yes	105(53%)	31(58.7%)	.104
	No	93(47.0%)	26(41.3%)	
Societal norm	yes	19(9.6%)	8(12.7%)	.489
	No	178(90.4%)	55(87.3%)	
Others	Yes	52 (26.3%)	55(87.3%)	.026
	No	146 (73.7%)	8(12.7%)	

Among mothers who have ever breastfed, 80.8% initiated breastfeeding with in the first hour after delivery and the rest initiated breast feeding one hour later (Fig.2).

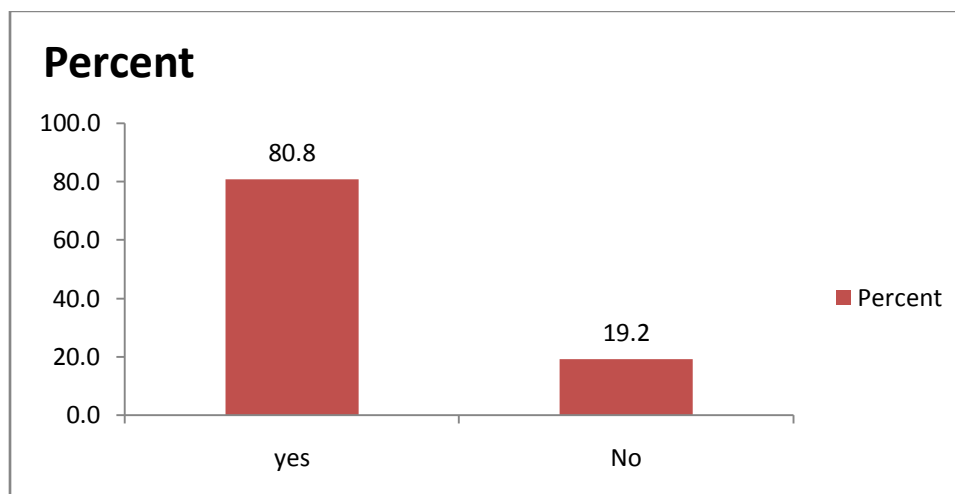


Figure Time of initiation of breastfeeding in coffee producing wereda Jimma zone,south west Ethiopia.june 2015

Infants those received colostrum was six hundred six(80.9%) and those didn't received the first milk was one hundred fourty three(19.1%). (Fig.3).

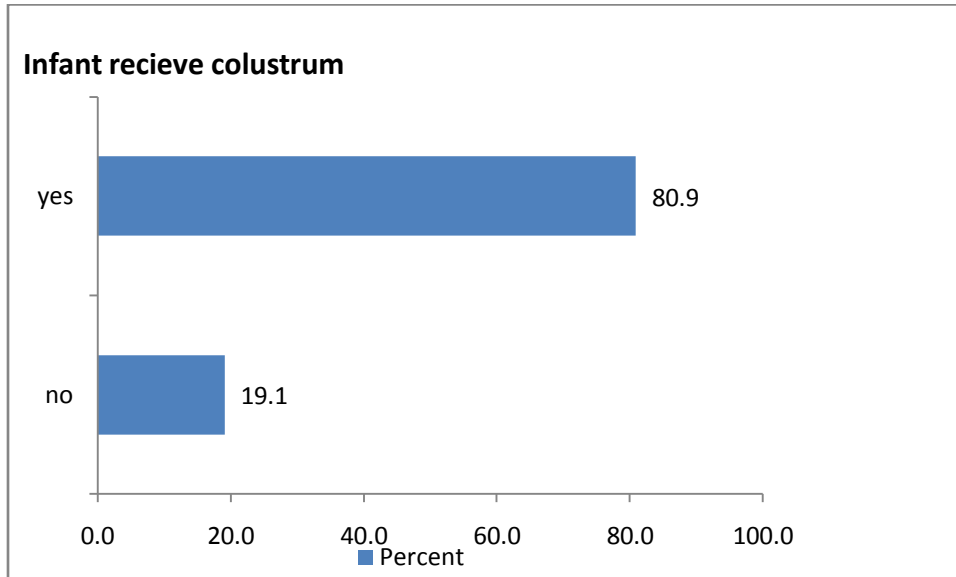


Figure Infants those receive the first milk (colostrum) coffee producing wereda in jimma zone,south west Ethiopia.june 2015

Prevalence of exclusive breast feeding in the study area is 67.7% while timely initiation of complementary feeding and continuation of breast feeding up to 24 and more is 41.7% and 91.3% respectively.(Fig 4,5and 6).

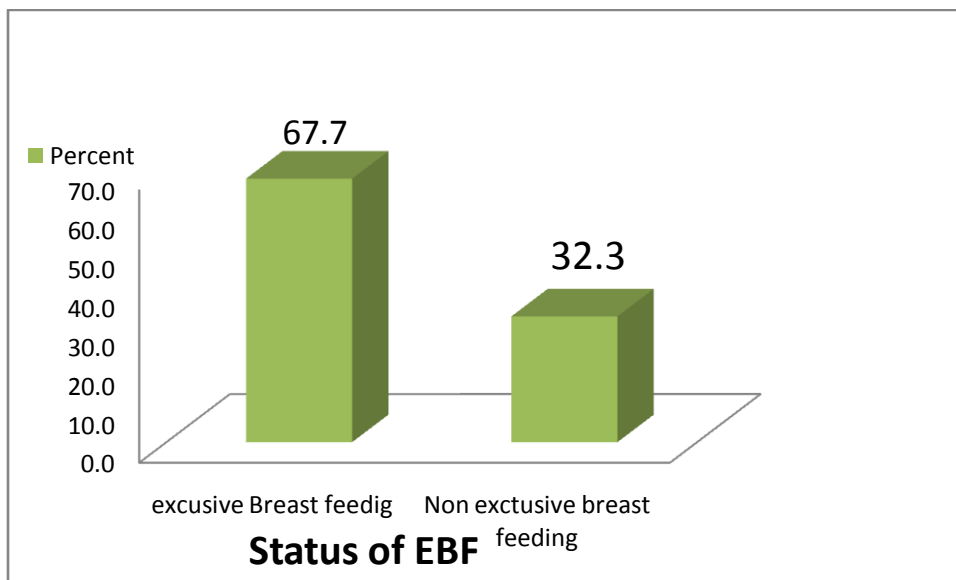


Figure Showing prevalence of excusive breast feeding in coffee producing wereda jimma zone southwest Ethiopia,June 2015.

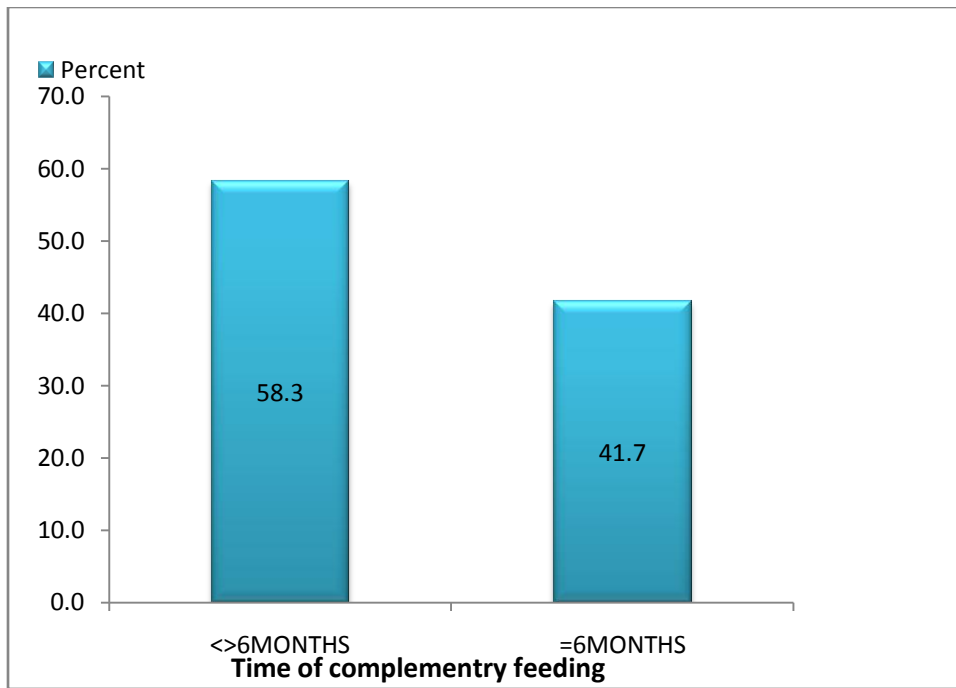
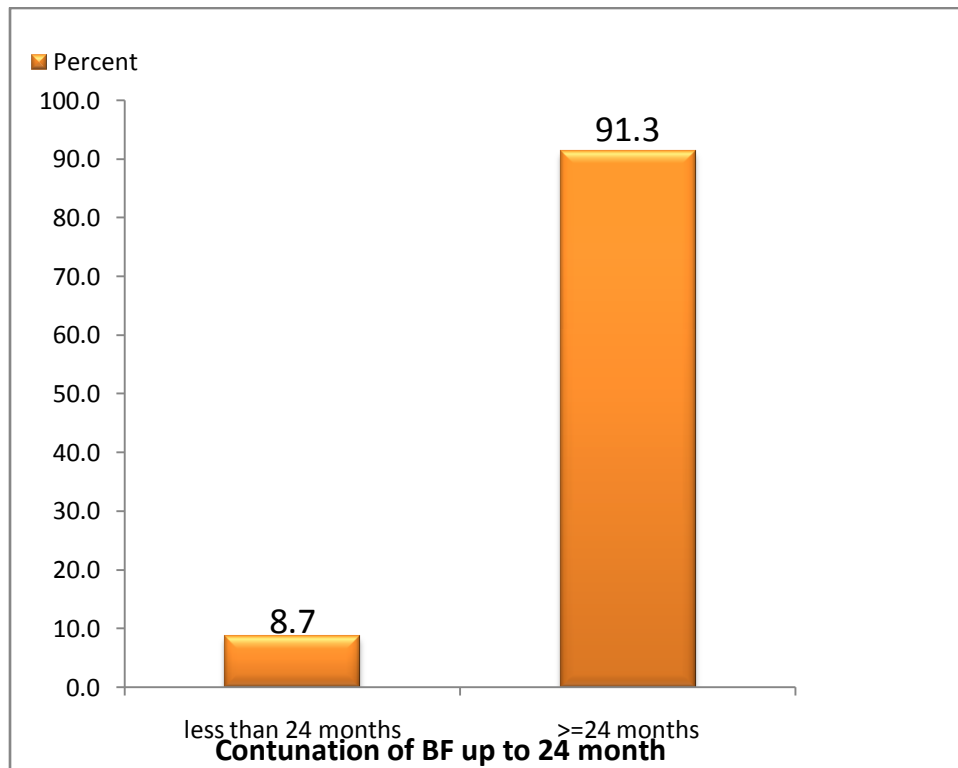


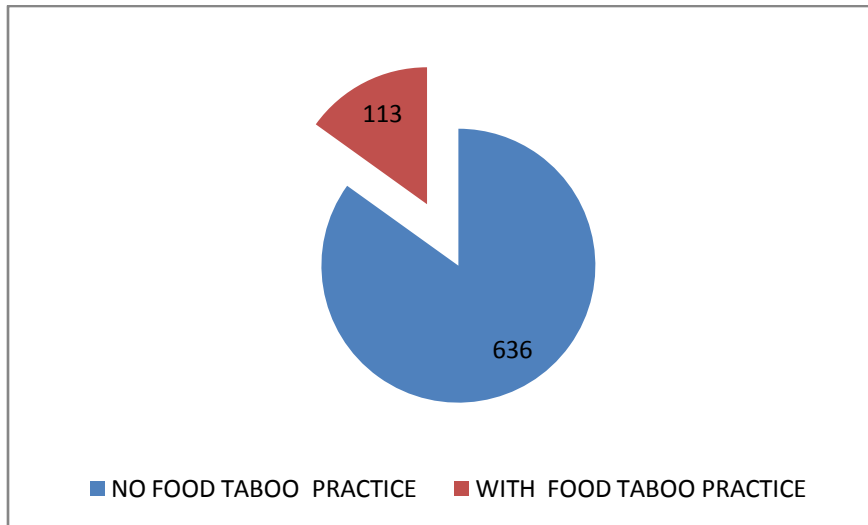
Figure . Shows number of infants timely initiation of complementary feeding in coffee producing wereda Jimma zone, southwest Ethiopia 2015.



**Figure** Shows number of infants those continued breast feeding up to 24 month and more in coffee producing wereda jimma zone, southwest, Ethiopia June, 2015

### 5.3 Food avoidance during pregnancy and lactation

Food taboos during pregnancy and after childbirth as displayed by women in the study area avoided certain kinds of food, which – according to them – were harmful for the infant. They avoided food believed to have laxative properties, food considered to be cold, food that caused skin rash, and acidic food. Foods that are generally avoided were: Vegetables (Kale, cabbage), Fruit(Banana,mango,Avocado,papaya),Tuberandroots(godere,sugarcane,sweetpotato,tomato),CerealsandGrains ,papper(barbere)garlic, chicken ,meat,cheese,egg ,pasta and soft drink like Merida and butter. This account one hundred threaten (15.1%) of the study population.(Fig3)



**Figure :Frequency of mothers Food avoidance during pregnancy and lactation coffee producing wereda in jimma zone,south west Ethiopia,June 2015**

#### **5.4 Food prohibition for children**

Food prohibited for children account more than mothers in the study population. Women in the study area avoided certain kinds of food, which – according to them – were harmful for the infant. They avoided food believed that it twists their tongue and can't speak fluently after growth ,cause abdominal distention, and the food that believe children are not able to digest. Foods that are avoided in the study area are mainly honey fruit(banana,mango,avocado),vegetable(cabbage, kale) cereal grains(barely,maize,injera) tubers and root (tomato, sugarcane) legumes,meat,butter,enest].One hundred eighty eight(25.1%) of the study population practice food taboos of children which must be changed through intervention in different strategy.

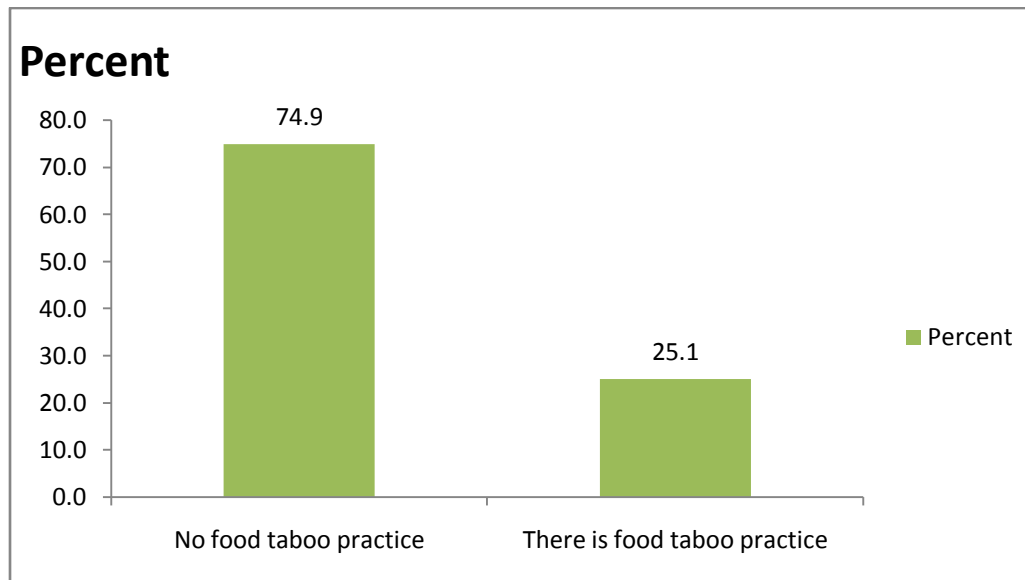


Figure Frequency of children food prohibition coffee producing wereda in Jimma zone, south west Ethiopia. June

### 5.5 predictors of optimal child feeding

On Bivariate logistic regression mother age, wealth, educational status of the household head and the spouse and member of the house hold those are candidates having P-value <0.25 for multiple logistic regression.

On multivariable logistic regression age of mother, age difference between spouse, spouse education, age of father and educational level of the household head were associated with optimal child feeding. The model showed that as age of mother increase by 1 year the likelihood of optimal child feeding is 5.1% more. (AOR=1.051[95%CI: 1.001, 1.104]). Similarly age difference between spouse increase by one year the likelihood of optimal child feeding increased by 3.9%(AOR=1.039[95%CI:1.002,1.079]). As Age of father increase by 1 year the likelihood of optimal child feeding decreased by 5% less (AOR=0.947[95%CI: 0.902, 0.995]). Additionally, mothers who had primary education were 31%less likely to have optimal child feeding compared to those mothers who didn't have formal education (AOR=0.691[95%CI: 1.002, 1.079]). Similarly when we consider the association of optimal child feeding with educational status of household head children in the households where the household head had attended secondary education and above were 1.5 times more likely to be optimally fed compared to those in the households where the household head had no formal education (AOR=1.494[95%CI: 1, 005, 2.222])(Table 3).



**Table :\Multivariable logistic regression model predicting the likelihood of optimal child feeding of less than two children among mothers in coffee producing households in Jimma zone, south western Ethiopia, June 2015.**

Variables	COR	95%CI		B	P	AO R	95% C.I.	
		lower	Upper				Lower	Upper
Members of HH between 15&65	.885	.748	1.047	-0.145	0.119	0.865	0.721	1.038
Members of HH less than 15&greater than 65.	1.073	.964	1.195	0.048	0.483	1.050	0.917	1.202
Age of mother	1.016	.994	1.038	0.050	0.046*	1.051	1.001	1.104
Age of the father	.996	.985	1.008	-0.054	0.030*	0.947	0.902	0.995
Age at first delivery	.994	.972	1.016	-0.052	0.185	0.950	0.880	1.025
Age of mother at first marriage	1.000	.978	1.023	0.024	0.540	1.025	0.948	1.107
Age difference between spouses	1.000	.991	1.009	0.039	0.040*	1.039	1.002	1.079
Spouse Education								
No formal Education	.730	.518	1.029			1		
Primary Education	.904	.610	1.342	-0.399	0.045*	0.671	0.455	0.990
Secondary Education and above	.346	.038	3.138	0.023	0.929	1.023	0.623	1.678
Place of Residence								
Rural	.921	.659	1.287	0.138	0.444	1.148	0.807	1.632
Urban	.921	.659	1.287			1		
Wealth Index Tertile								
Poor						1		
Medium	.722	.502	1.037	0.204	0.281	1.227	0.846	1.780
Rich	.849	.593	1.215	-0.110	0.579	0.896	0.608	1.321
Education of the household head								
No formal Education						1		
Primary Education	1.222	.813	1.836	0.213	0.391	1.237	0.761	2.010
Secondary Education and above	1.420	.997	2.022	0.402	0.047*	1.494	1.005	2.222

AOR=Adjusted odd ratio    NB\*=indicates significant at 0.05.

**Table :Multivariable logistic regression model predicting the likelihood of optimal child feeding of less than two children among mothers in coffee producing households in Jimma zone, south western Ethiopia, June 2015.**

Variables	COR	95%CI		B	P	AOR	95% C.I.	
		lower	Upper				Lower	Upper
Age of mother	1.016	.994	1.038	0.050	0.046*	1.051	1.001	1.104
Age of the father	.996	.985	1.008	0.054	0.030*	0.947	0.902	0.995
Age difference between spouses	1.000	.991	1.009	0.039	0.040*	1.039	1.002	1.079
Spouse Education								
No formal Education	.730	.518	1.029			1		
Primary Education	.904	.610	1.342	0.399	0.045*	0.671	0.455	0.990
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Secondary Education and above	1.420	.997	2.022	0.402	0.047*	1.494	1.005	2.222

AOR=Adjusted odd ratio NB\*=indicates significant at 0.05.

## Chapter Six: Discussion

The study determined the prevalence of optimal child feeding and associated factors in coffee producing households in Jimma Zone. The prevalence of optimal among the study population was 38. 1%, while the suboptimal child feeding was 61.9 in our study area.

The mothers were asked when they initiated breastfeeding and 80.8% of mothers reported that they initiated breastfeeding within one hour of infant birth, which is relatively high when compared with 52% of infants started breastfeeding within one hour of birth, and 80 percent, within the first day. According to EDHS 2011. There was also considerable variation by region. Initiation of breastfeeding within one hour was lowest in the Amhara and Somali regions (38%

and 40 %, respectively), and highest in the SNNP and Dire Dawa regions (67 % and 66 %, respectively)(18) this might be due to socio economic variation. And 80.9% the baby received first milk (colostrums) is relatively consistent with study conducted in arba minch ,More than three-fourth (89%) of mothers provided colostrum to their infants provision of colostrum considered as vaccines given to infants to prevent diseases(25).

Despite national attempts to disseminate the importance of Timely initiation of complementary feeding 41.7% initiate complementary feeding at 6 month as recommended. It less when compared to study conducted in northern Ethiopia and Harar which was 79.7% and 60.5% respectively.44.3% of mothers were early initiate complementary feeding, Approximately which is much higher from study in north Ethiopia that is Only 2.1%.14% mothers initiated late after 6 month which is approximately consistence with 15.9% in northern Ethiopia and in Harar19%(33,34). This is might be due to cash crop area mothers have less opportunity to stay at home and they tend to feed their children different foods other than initiating complementary food timely.

Concerning exclusive breastfeeding 67.7% exclusively breast feed infant under six month in the area and it is less when compared to 71.3% in Bale zone Goba wereda(31).This might be due to socio demographic variation.

The global and national infant and young child feeding guidelines of WHO recommend that all infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional needs, infants should receive safe and nutritionally adequate complementary foods while breastfeeding continues for up to two years of age or beyond. Exclusive breastfeeding from birth is possible except for a few rare medical conditions as specified by WHO and UNICEF and virtually every mother can breastfeed (1).

Pursuant to this, the Ethiopian government had developed national infant and young child feeding (IYCF) guideline with clear objectives concerning optimal child feeding. For the

implementation of these objective tremendous health extension worker were trained and giving varying level of health related community services like promotion of timely initiation and exclusive breast feeding, time of complementary feeding and continuation of breast feeding up to 24 months.

However the fact that we found more than two third of infants not adhering this feeding recommendations and getting suboptimal feeding practices is an issue that needs further consideration. This cortically important as it is an indicators of how the infant and young child feeding guideline developed by the government of Ethiopia since 2005 is implemented at the grassroots level. Ethiopian is a country level as a very high stunting rate 44%. The government has identified accelerated stunting reduction as one of the key nutrition programs that are current being address in the revised version of the national nutrition program (NNP2). Short of addressing this high level of sub-optimal child feeding practice will hinder the above national efforts and increase child mortality functional disability.

On mutivariabl logistic regaression after controlling for other variables: maternal age, age of the father, age difference between spouses, household head's education, household spouses education were independent predictors of optimal child feeding practices. as age of mother increase by 1 year the likelihood of optimal child feeding is 5.1% more. When compare to other study in Gamo Gofa Kamba wereda it was relatively high (40). Beside the fact that as age increases they were influenced by different traditional and cultural misconception. Like in many other developing countries; most mothers provided their children water because they believe that the breast milk was insufficient as breast milk is seen primarily as food and water is required to satisfy the needs of the child and so on(25). This positive finding might be related to the effect of the health extension worker existing in the community, which changes this traditional practice. In addition expansion of health facilities to the preferable areas of Ethiopia might have contributed for this difference. However mothers who had primary education were 32%less likely to have optimal child feeding when compared to those mothers who didn't have formal education. This finding is inverse when compared other researches(18,40,41). Even though education empowers them to resist external interferences and pressures from traditional belief,

misconception and better economic status, mother in this coffee producing Zone when they became economically better they tend to feed their children packed commercial foods and they have less opportunity to stay at home and practice exclusive breast feeding and timely initiation complementary feeding .

This study revealed household head those have attended secondary educational status 1.4times more likely to have optimal child feeding when compared with those who have no formal education. This result supported by study done in Arba minch zuria Women whose husbands did not attend any formal education had less knowledge about optimal breastfeeding practices compared to whose husbands attended primary school and above. Age difference between spouse increase by one year the likelihood of optimal Child feeding increased by 3.9%. This might be due to when one of the father or mother age increase their awareness increase about optimal child feeding. As age of father increase by 1 year the likelihood of optimal child feeding decreased by 5% less (AOR=0.947[95%CI:0.902,0.995]). Probably due to as father age increase their attention to their child may decrease and also there might be increase responsibility and work load because of having many children.

## **Strengths of the study**

All indicators of optimal child feeding were considered.

## **Limitations of the study**

Since this study used a cross sectional by design, it was not possible see seasonal variations in the feeding practices, which could change in some way during coffee harvest seasons. There might be also recall bias on child feeding practices as mothers could forget when they initiated breastfeeding and gave an additional food, but this bias was minimized by relating to events and training data collectors how to probe the mothers to remember what she fed. On the other hand during the determination of exclusive breastfeeding using a 24-hour recall period measures current status and may cause the proportion of exclusively breastfed infants to be slightly overestimated, since some infants who were given other liquids regularly may not have received them in the 24 hours before the survey.

## **Chapter seven: conclusion and recommendation**

### **7. 1 Conclusion**

The proportion of optimal IYCF is low (38.1%) compared to what is expected. In this study among socio-demographic variables educational status, mother age, Age of father educational status of the household head and the spouse significantly associated optimal child feeding. Food prohibited for children account more than mothers in the study population.

Factors associated with optimal child feeding should be taken into account while designing intervention strategies and in promotion of strong community based networks using Health Extension Workers and local community resource people including women's development army. Findings from this study have significant input in the promotion of optimal child feeding practices for stunting reduction.

### **7.2. Recommendation**

#### **To Regional health bureau / Zonal Health Department and Wereda Health department**

- ✚ Activities focused on promotion of optimal child feeding at health facilities level should be extended to community level using different strategies like Educating mothers about optimal child feeding practices at different occasion like a meeting, coffee ceremony and edirs is the good opportunity to enhance mothers' awareness of child feeding practices with collaboration of agricultural bureau.
- ✚ Main contact point of mothers (ANC, PNC, EPI ) and establishment and promotion of TIBF, EBF and TCF should be integrated.
- ✚ Coordinate exclusive breastfeeding support and promotion with other programs in the health department, private and public health care systems and community organizations.
- ✚ Maternal leave at least for 6 month should be considered.

#### **To health extension workers**

- ✚ Health extension workers should focus and work on behavior change towards all parameters of OCF.

#### **To The Health Care Providers and Counsellors**

- ✚ ANC providers should use the opportunity to promote OCF.
- ✚ They should anticipate and focuses on possible barriers for TIBF, EBF and CF hence, counselors should clarify and recommend possible solutions during counseling session

- ✚ Interventions should focus on addressing barriers to early initiation and should include a community component.

### **To Researchers**

- ✚ Further analytic study that mainly addresses all areas of associated factors (knowledge and awareness of mothers, individual level, group level and societal level factors) that significantly affect using mixed methods.
- ✚ Look into the effect of culturally appropriate BCC strategies to curb high level of suboptimal child feeding in the study community.



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# **ANNEXES: I QUESTIONNAIRE (ENGLISH VERSION)**

**Jimma University**

**College of Health Sciences (CHS)**

**School of Graduate Studies**

**Department of Population and Family Health**

Good morning/afternoon! dear respondent my name is \_\_\_\_\_. I am working as data collector in a study conducted by the College of Public Health Sciences of Jimma University. We are interviewing mothers here about feeding practice associated factors among mothers in order to generate information necessary for the planning of appropriate strategies (interventions) to promote appropriate infant feeding practice in this woreda and the country. To attain this purpose, your honest and genuine participation by responding to the question prepared is very important and highly appreciated.

### **Confidentiality and consent**

I would like you to ask some questions that you may find it difficult to answer. Your answers are completely confidential. Your name will not be written on this form. Anybody will not be told what you said in connection to your name. You do not have to answer any question if you don't want to and you can stop the interview at any time. However your honest answer to these questions will help us to better understand the practice of mothers related to infant feeding practices (timely initiation, exclusive feeding, complementary practice, time of continuation and associated factors). We would greatly appreciate your help in responding to this study. The interview will take about **15 - 25** minutes. Would you be willing to participate?

**Yes** \_\_\_\_\_  
**No** \_\_\_\_\_

## QUESTIONNAIRE IDENTIFICATION

Questionnaire ID No \_\_\_\_\_

Region: Oromiya

Zone: Jimma

Woreda: Manna,Gomma,Limukosa

Kebele \_\_\_\_\_

House No \_\_\_\_\_

Name of interviewer \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

### Questionnaire

*Instructions: Randomly identify coffee producing household. The key respondent should be the head of the house hold (Either the mother or Father).*

#### Section1: Household Information

Name	Variable	Response
A1	Date of interview	
A2	Setting	1=rural                  0= urban
A5	Kebele	_____
A6	Village Gote	
A7	Household ID	
A8	Family size of the respondent	Persons
A9	How many members of the household are below age 15 and above 65?	
A10	How many members of the your household are between the age b/n 15-65	
A11	Marital status of the respondent	1. Single.                  2. Married 3. Widowed                  4. Divorced
A12	what is your marital form	1. Mono                  0. Polygamy
A13	Sex of the household head	1. Male                  0. Female
A14	Household head's Educational status	1=no formal education 2=primary education 3=secondary education 4=college/University
A15	Spouse's education	1=no formal education 2=primary education 3=secondary education 4=college/University
A16	Age of Father	_____ Years
A17	Age of mother	_____ Years
A18	Age at first marriage (mother)	_____ Years
A19	Age at first birth (mother)	_____ Years

A20	Age difference between spouse (years)	_____ Years
A21	Ethnicity	
A22	Religion	

**Section C- Child Care**

<b>Breastfeeding</b>	<b>Responses</b>
<b>C1. What have you heard or what advice have you received about breastfeeding? (Probe)</b>	1. Exclusive up to six month 2. Feeding at least 8 or more times 3. Early initiation 4. Colostrum advantage 5. Others_____
<b>C2. Who has talked to you about breastfeeding?</b>	1. Health workers 2. Media 3. Neighbor hood 4. Husband 5. Others_____
<b>C3. What did you think of their advice?</b>	1. Useful 2. Neutral 3. Useless 4. Others_____
<b>C4. Has your husband ever given you advice about how to feed your baby?</b>	1. Yes      0. No
<b>C5. If Yes, what did he said?</b>	1. Exclusive up to six month 2. Feeding at least 8 or more times 3. Early initiation 4. Colostrum advantage 5. other_____
<b>C6. What did you think of his advice?</b>	1. Useful 2. Neutral 3. Useless 4. Others_____
<b>Putting to the breast</b>	
<b>C7. Was your child put to breast right after the birth?</b>	1. Yes      0. No
<b>C8. How soon after giving birth did the baby first receive breast-milk?</b>	1. Immediately 2. 30 minutes later 3. One hour later 4. Others_____
<b>C9. Reasons for giving breast milk at that particular time</b>	1. Health benefit 2. Societal norm 3. The health worker told to

	do so 4. I don't know 5. Others _____
<b>C10. How did you know when to start giving your baby breast-milk?</b>	1. Health workers 2. Media 3. Neighbor hood 4. Others _____
<b>C11. Did your baby receive anything else before receiving breast-milk?</b>	1. Yes            0. No
<b>Colostrum</b>	
<b>C18. Did the baby receive the first milk (colostrums)?</b>	1. Yes            0. No
<b>C19. If yes, what did you feel about giving colostrum?</b>	1. Useful 2. Neutral 3. Useless 4. Others _____
<b>C20. Has your husband ever given you advice about Colostrum?</b>	1. Yes            0. No
<b>C21. What do you know about colostrums?</b>	1. It has good nutrient 2. It prevent disease 3. I don't know 4. Other _____
<b>C22. What could happen if the baby is given colostrum?</b>	1. Healthy 2. No change 3. I don't know
<b>Breast milk (exclusive)</b>	
<b>C22. What do you think about the quantity of breast milk up to six months?</b>	1. Adequate 2. Inadequate 3. I don't know
<b>C23. Did your baby receive any other food or liquid other than breast milk after birth? (during 0-6 months)</b>	1. Yes            0. No
<b>C24. If yes, what other food or liquid other than breast milk after birth did your child receive? (during 0-6 months)</b>	1. Water 2. Milk 3. Butter 4. Other _____
<b>C25. Who told you about other fluids to be given in the first few days of life? (during 0-6 months)</b>	1. Elderlies 2. Husband 3. Neighbor hood 4. Others _____
<b>C26. From what age your baby receive any other food or liquid other than breast milk after birth? (during 0-6 months)</b>	_____ Months

<b>C27. What were the reasons for giving the food/liquid after birth? (during 0-6 months)</b>	<ol style="list-style-type: none"> <li>1. Breast immediately doesn't produce milk</li> <li>2. Child may starve</li> <li>3. To moisten/hydrate the mouth and throat</li> <li>4. others</li> </ol>
<b>Breast-feeding pattern</b>	
<b>C28. If you gave only breast milk after birth, how did you decide that?</b>	<ol style="list-style-type: none"> <li>1. Convinced by Health workers information</li> <li>2. Convinced by Media</li> <li>3. Convinced by Neighborhood</li> <li>4. Earlier experience</li> <li>5. Husband decision</li> <li>6. Others_____</li> </ol>
<b>C29. How long do you plan to continue to breastfeed?</b>	-----
<b>C30. Reasons mother will continue BF?</b>	<ol style="list-style-type: none"> <li>1. My child health will be kept</li> <li>2. Economic benefit</li> <li>3. Husband to do so</li> <li>4. Contraceptive</li> <li>5. Others-----</li> </ol>
<b>C31. How long do you think a baby should be breastfed exclusively?</b>	-----
<b>C32. Could you tell me your reasons for that?</b>	<ol style="list-style-type: none"> <li>1. My child health will be kept</li> <li>2. Economic benefit</li> <li>3. Husband to do so</li> <li>4. Contraceptive</li> <li>5. Others-----</li> </ol>
<b>C33. For how long have you breastfeed the child?</b>	<ol style="list-style-type: none"> <li>1. -----months</li> <li>2. I stopped breast feeding</li> </ol>
<b>C34. If Breast feeding stopped when did you stop breastfeeding? ( age of child month)</b>	_____
<b>C35. What were your reasons for stopping breastfeeding?</b>	<ol style="list-style-type: none"> <li>1. Health concern</li> <li>2. It is enough for the child</li> <li>3. Work related</li> <li>4. Others_____</li> </ol>
<b>C36. Have you planned to stop breastfeeding?</b>	1. Yes 0.No
<b>C37. IF,yes ,Why would you stop breastfeeding?</b>	<ol style="list-style-type: none"> <li>1. Health concern</li> <li>2. It is enough for the child</li> </ol>



	3. Work related 4. Others_____
<b>C38. What did you think about breastfeeding for the mother?</b>	1. Useful 2. Neutral 3. Useless 4. Others_____
<b>Already began with Introduction of foods</b>	
<b>C39. At what age did you start giving other liquids or food to your baby?</b>	_____
<b>C40. What was/ were the food/s you started with?</b>	1. Porridge of cereal    2. Bread/Injera 3. Cow milk                4. Potato 5. Formula                6. Others_____
<b>C41. Can you tell me the reasons for this?</b>	1. Convinced by Health workers information 2. Convinced by Media 3. Convinced by Neighbor hood 4. Earlier experience 5. Husband decision 6. Culture/norm 7. Others_____
<b>C42. Which of the following foods your child has received?</b>	1. Grains, roots and tubers 2. Legumes and nuts 3. Dairy products 4. Flesh food 5. Eggs 6. Vitamin A rich fruits and vegetables 7. Other fruits and vegetables
<b>C43. How often do you give your baby other liquids/foods? Probe.</b>	
<b>C44. When will you (if not already giving) start to give other foods to your child?</b>	_____
<b>C45. Has your husband ever given you advice about how to feed your baby?</b>	1. Yes 2. no

### Section T. Food taboo questions

<b>T1</b>	<b>Do you have any food prohibition for children?</b>	<b>A. Yes    B. No</b>
<b>T2</b>	<i>If Yes</i> , What type of Foods are prohibited for children (probe).	1. Meat 2. sorghum

		3. Mango 4. Banana 5. Egg 6. maize 7. Other_____
<b>T3</b>	Who told you to do so?	1. Elderly 2. Neighbors 3. Husband 4. Religious leaders 5. Others
<b>T4</b>	What are the reason you did not give the above food?	1. No health benefit 2. To get social acceptance 3. Others
<b>T5</b>	What special food Do you feed your child to improve strength, Endurance and/or vitality for your child	
<b>T6</b>	What foods do avoid for your child for preventing illness or disease?	
<b>T7</b>	Do you avoid any food because you are nursing?	<b>1. Yes            0. no</b>
<b>T8</b>	If yes, which food?	
<b>T9</b>	What is the reason you didn't give the above food?	1. No health benefit 2. It makes my child sick 3. It hinder breast milk production/quality 4. Other_____
<b>T10</b>	Do you avoid any food because you are/ you were pregnant?	<b>1. Yes            0. no</b>
<b>T11</b>	If yes, which food?	1.Suger cane 2.Mango 3.Godere 4.Kalee 5.Maize
<b>T 12</b>	Who told you to do so?	A. Elderily B. Neighours C. Husband D. Religious leaders E. Others

**(CHECK THE QUESTIONNAIRE TO MAKE SURE THAT ALL RESPONSES  
HAVE BEEN PROVIDED)**

**Thank you very much for your time**

**CHECKED BY SUPERVISOR**

Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

**ANNEX 2 QUESTIONARY AFAAN OROMO VERSION**

**III. QUETIONNAIRE (Afan Oromo Version)**

**Yunivarsiitii Jimmaa**

**Koollejji Fayyaa Hawaasaa fi Saayinisii Madikaalaa**

Akkam gaafatamaa? Ani maqaan koo \_\_\_\_\_ n jedhama. Ani qorannoo Yunivarsiitii Jimmaa, coollejji Fayyaa Hawaasaa fi Saayinisii Madikaalaatiin gaggeeffamu keessatti odeeffannoo funaansarran hojjedha. Odeeffannoo karoora mala gaarii fi soora daa'immanii sirrii fi itti fufinsa hama ji'aa 24f qabu aanaa kanaa fi biyyaaf qopheessuuf nu barbaachisan maddisiisuuf jecha nuti waa'ee gocha jalqabiinsa harma hosissuu ta'ee harma qofa hoosisuu nyaata daa'imaniif yeroon nyaata jalqabuu fi hamaa wagaa 2 itti fufu waliin wantoota wal qabatan irratti haawwaniin gaaffii gaafanna. Fayidaa kana argachuuf, amanamummaa fi garummaadhaan deebiin gaaffii gaafatamtaniif deebifan baay'ee barbaarchisaa fi kan ajaa'ibsifamudha/dinqisiifamuudha.

**Guca Waliigaltee**

Gaaffii deebisuuf si rakkisu/sitti ulfaatu/ akka tasaa si gaafachuun danda'a ta'a. Icittiin deebii kee guutummaatti kan eeggamedha. Maqaan kee guca kanarratti hi katabamu/hin barreeffamu/. Maqaakeen walqabsiisee enyumtuu waan ati jette hin dubbatu. Gaaffii deebisuu hin barbaanne deebisuuf dirqama hin qabdu. Akkasumas eerga jalgabnee booda yeroo barbaadde dhaabuuf mirgi kee kan eeggamedha. Ta'ullee amanamummaan deebiin ati nuuf kennitu, gochoota haawwan soora daa'immanii keessatti raawwatan (dahanii yeroon harma jalqabsiisuu, harma qofaa hoosisuu fi wantoota kanneen waliin walqabatan) sirritti hubachuuf kan nu gargaarudha. Qorannoo keenyaaf deebiin nuuf kennitu barbaachisaa akka ta'e sirritti hubattee? Gaaffii deebiin keenya daqiiqaa 15 – 25 tti fudhata. Itti hirmaachuuf fedhii keetii?

**Eeyyee** \_\_\_\_\_

**Lakki** \_\_\_\_\_

## Gaaffii fi deebii

*Ajaja : Maatiiwwan buna oomishaan randamaan addaa baasuu. Deebii furtuu kan tahaan dursaa maatii warreen tahannidha. (abbaa ykn haadhaa).*

**Kutaa 1: odeeffaanaa warraa (maatii)**

Maaqa	Jijiramtu	Deebii
A1	Guyyaa gaaffii fi deebii	
A2	Naannoo	1=baaadiyyaa ____ magaala _____
A3	Ganda	_____
A4	Maqaa gooxii	
A5	Lakkoofsa manaa	
A6	Baay'ina maatii	Namoota _____
A7	Baay'ina miseensota maatiiwwan umurii isaanii 15 gadii -65 ol kan tahee	
A8	Baay'ina miseensota maatiiwwan umurii isaanii 15-65 kan tahee	
A9	Haala ykn bifa heerumaa	2. Kan hin heerumne 2. Kan heerumette3.Koobeettii yknkan abbaan manaa isheerra du'ee irraa du'ee 4. Kan hiikette
A10	Bifni heerumaa maalii	2. Tokko tokkoo 3. Tokkoo oli
A11	Saalli dursaa maatii maalii	1=dhiiraa 2= dhalaa
A12	Sadarkaa barumsaa kan abbaa manaa	1.kan hin baranee 2.sadarkaa 1 <sup>ffaa</sup> (1-8) 3.sadarkaa 2 <sup>ffaa</sup> (9-12) 4.sadarkaa olaanaa (kolleejjii ykn yuniversity )
A13	Sadarkaa barumsaa haadha manaa	1.kan hin baranee 2.sadarkaa 1 <sup>ffaa</sup> (1-8) 3.sadarkaa 2 <sup>ffaa</sup> (9-12) 4.sadarkaa olaanaa (kolleejjii ykn

		yuniversitii )
A14	Umurii abbaa manaa	Waggaa _____
A15	Umurii abbaa haadha manaa	Waggaa _____
A16	Umurii heerumaa jalqabaa (kan haadha)	Waggaa _____
A19	Garaagarummaa umurii abbaa manaa fi haadha	Waggaa _____
A20	Saba	
A21	Amantii	

**KutaaT. Gaaffilee nyaatoolee Adaan hin nyaatamine irraatti Xiyyeefatan**

<b>T1</b>	<b>Daa'imaniif umriin isaan ji'aa 6-24 ta'aniif nyaanni dhorgamu jira?</b>	<b>B. eyyee</b>	<b>B.Lakkii</b>
<b>T2</b>	Deebii eyyee yoo ta'ee ,Bifaa nyaata dhorkamuu nattii himi. _____ _____	Kan hoo 1.Foon 2.Mishinga 3.Mango 4.Muza 5.Bupha/Hanqaquu/kilee 6.Boqqollo	
<b>T3</b>	Kan akka gootuuf ennutu sitti himi	6. Jaarsoolee 7. Olaa 8. Abba manaa 9. Abbooti Amantii 10. Kan biroo	
<b>T4</b>	Sababni nyaatollee armaan olitti tarreeffaaman hin keenninef maalii	4. Faayidaa fayyaa waan hin qabneef 5. Ummata biraatti fudhatama argachuuf 6. Kan biroo	
<b>T5</b>	Daa'imini kee human ,jabiina akka argaatuf nyaatuuf nyaata kan akkamii kennitaafi		
<b>T6</b>	Dhukkubaaf akka saaxiil hin baane nyaatoolee akkami daa'ima keef akka hin kennamine goota?		
<b>T7</b>	Harma waan hosiftuuf nyaata hin nyaanne jira?	<b>1.eyyee</b>	<b>2.Lakki</b>
<b>T8</b>	Yoo eyyee,ta'ee nyaata maal fa'aa		

<b>T9</b>	Sababni nyaatollee armaan olitti tarreefaman hin nyaannef maalii?	5. Faayidaa fayyaa waan hinqabneef 6. Daa'ima koo waan dhukkubsiisuuf 7. Qabiyyee fi hamma annaan harma waan hir'isuuf 8. Kan biroo
<b>T10</b>	Ulfaa yeroo taateeti sababi ulfaa taateef nyaata kan hin nyaane jira?	<b>eyyee lakki</b>
<b>T11</b>	Eyyee yoo ta'ee maal fa'aa?	Kan hoo 1.Shankora 2.Mango 3.Godere 4.rafuu 5.Boqqolloo
<b>T 12</b>	Akkas akka gootuuf eenyuutu sitti hime?	A. Jaarsoolii B. Olaa C. Abbaa manaa D. Abbootii amantii E. Kan biroo

## DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in this or any other university and that all sources of materials used for the thesis have been fully acknowledged.

Name: **FELAGOT BEZUWERK BEKELE**

Signature: \_\_\_\_\_

Name of the institution: **JIMMA UNIVERSITY**

Date of submission:

This thesis has been submitted for examination with my approval as University advisor

Name and signature of first advisor:

**PROF. TEFERA BELACHEW**

signature\_\_\_\_\_ Date\_\_\_\_\_

Name and signature of second advisor:

**Dr.MULUEMEBET ABERA(BSC,MPH,PHD)**

Signature\_\_\_\_\_ Date\_\_\_\_\_

Name and Signature of the second advisor:

**KALIKIDAN HASSEN (MSC.PHD FELLOW)**

Signature\_\_\_\_\_ Date\_\_\_\_\_