ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE
SCHOOL OF PUBLIC HEALTH

Does mothers/caregivers‘fasting status affect the dietary diversity of children 6-23 months? A before-after study in Debrebirhan, Ethiopia

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This thesis, by Addisalem Zebene, is accepted in its present form by the board of examiners as fulfilling for the degree of masters of public health in public health nutrition.

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List of Acronym and Abbreviation

ANC: Antenatal Care

AOR: Adjusted Odds Ratio

BF: Breast Feeding

CI: Confidence Interval

COR: Crude Odds Ratio

CSA: Central Statistical Agency of Ethiopia

DD: Dietary diversity

DDS: Dietary Diversity score

EOTC: Ethiopian Orthodox Tewahido Church

EDHS: Ethiopian demographic and Health Survey

HEW: Health Extension Worker

IYCF: Infant and Young Child feeding

MDD: Minimum Dietary Diversity

OR: Odds Ratio

PNC: Post Natal Care

SSA: Sub Saharan Africa

WHO: World Health Organization

Abstract

Background: Ethiopia has various religions, of which the Orthodox Tewahido Christian religion accounts for 44% of the population. According to the Ethiopian Orthodox Tewahido tradition close to 200 days are dedicated to religious fasting annually, at which time all followers who are above seven years old are expected to abstain from all types of food, including animal source foods, and water for up to some hours daily. It is possible that such practice by mothers or caregivers could affect children's food consumption. However, it is not clear if mothers/caregivers' fasting status influences the diversity of food that children are getting during these periods.

Objective: The objective of this study was to estimate the effect of mothers/caregivers' fasting status on dietary diversity of children 6-23 months in Debrebirhan, Ethiopia, 2019

Methods: A community-based longitudnal study was conducted in Debrebirhan, North Shewa Zone, at randomly selected seven kebeles with a sample size of 218, from January 29 to February 25, 2019 in the pre-fasting period and from March 18 to April 10, 2019, during fasting period on same participants. Data was entered on Epi data version 4.4.2.1 and analyzed using STATA 15 software. Children's dietary diversity was measured using the WHO standardized questionnaire for infant and young child feeding. McNemar paired test was used for comparison of baseline and end line measurements. Statistical significance was determined at $p<0.05$.

Result: A total of 218 and 216 mothers/caregivers with children 6-23 months participated in the study before and during fasting season with a response rate of 100.0% and 99.0% respectively. The median age of children was 15 months. It was found out that the proportion of children who ate four or more food groups in the pre-fasting period was 23.4% and it significantly decreased to 5.5% in the fasting period ($p<0.0001$).

Conclusion: The study pointed out that mothers/caregivers' fasting status during the Ethiopian Orthodox Tewahido fasting periods could negatively affect the dietary diversity of children 6-23 months in the household apparently by decreasing their consumption of animal source food. Therefore, intervention strategies in promoting children's dietary diversity should be designed in a way that considers Ethiopian Orthodox Tewahido Christian mothers/caregivers' fasting practices.

1. INTRODUCTION

1.1 Background

Infant and young child age from birth to two years of age is a critical window period where they need to have a proper feeding practice in order to promote optimal growth and development and prevent child malnutrition (1). These infant and young child feeding (IYCF) practices in children under 24 months of age are measured by different indicators developed by the World Health Organization (WHO) (2).

Dietary diversity (DD) is one of those core indicators used to assess the appropriateness of children's diet, which refers to increasing consumption of the number of variety of foods across and within the food groups capable of ensuring adequate intake of essential nutrients. In both developed and developing countries, it has been used as a proxy indicator of dietary quality, nutrient adequacy and children's nutritional status (3,4). The World Health Organization recommends children 6-23 months to consume a minimum of four foods out of the seven food groups (Minimum Dietary Diversity(MDD)); which are grains, roots and tubers; legumes and nuts; dairy products; flesh foods (meats/fish/poultry); eggs; vitamin A-rich fruits and vegetables; and other fruits and vegetables (2).

However, attaining adequate children's dietary diversity has been a constant challenge for many countries in the world specially for South Asian and Sub Saharan regions including Ethiopia (5). So far, different individual, household and societal determinants were identified for the low prevalence of child dietary diversity. The societal factors could affect the individual dietary practices in political, economic, socio-cultural or religious context (6). Religion, as one of the societal factors, can influence individual dietary choice, household food consumption pattern and family feeding practice (7).

Ethiopia is home to various religions of which the Orthodox Tewahido Christians, who belong to the Ethiopian Orthodox Tewahido Church, accounts for 44% of the country's population. According to the 2007 census report majority of the Orthodox Tewahido Christian followers in Ethiopia are found in Tigray (95.6%) and Amhara (82.5%) in both urban and rural residences (8).

Most religions have their own dietary rules that guide followers on what to eat and not to eat (7). Fasting by Ethiopian Orthodox Tewahido Christians is one of those well-known important dietary proscriptions (9). It is defined as a partial or total abstention from all foods, or a select abstention from prohibited foods of animal origin for a limited time until the period of fasting is over. There are seven principal fasting periods annually. These are, fifty-five days lent fast period preceding Easter, the fast of the apostles ranging 14-44 days, the fast of the prophets of 43 days, the fast of the assumption 15 days in august, 3 days of the Nineveh fast, Gehad of Christmas and epiphany and with the exception of two months after Ethiopian Easter, every Wednesday and Friday are fasting days almost all year-round. The great Easter fast (lent) or Abiy tsom is the most important and longest continuous fasting period of all fasts of the year (10).

The church requires followers above the age of seven to practice fasting for over 200 days a year, at which time consuming their first meal of the day after noon and the consumption of diet of animal origins is strictly forbidden. The church has always exempted children less than seven years old, soldiers, the sick, pregnant and lactating mothers from strict fasting and are permitted to eat both animal source foods and other foods including water, without abstention during the religious fasting periods (11).

Although mothers are well aware of the fact that children are not expected to fast, it possible that the fasting behavior of adults in the household affects children's access to diverse groups of foods including foods of animal origin. This is because during fasting periods fasting mothers may not prepare non-fasting foods separately for their children due to fear of touching the forbidden foods or contamination of utensils used for family food cooking and non-availability of non-fasting foods in the market (12, 13). This implies inadequate child dietary diversity can possibly be attributed to a mothers' or care givers' fasting status. So in order to make IYCF

programs and intervention designs more effective, religious fasting practices should be well understood in the context of their effect on children's diet.

1.2 Statement of the problem

Worldwide the prevalence of childhood under nutrition remains alarming contributing to 45% of all child deaths (14). According to WHO and UNICEF 2018 report, globally 151 million under-five years old children were stunted and 51 million were wasted. Asia and African countries have the highest prevalence of stunting with 55% and 39% and wasting 69% and 27% respectively (15). In Ethiopia, according to the Ethiopian Demographic and Health Survey (EDHS), the 2016 report; 38% of children are stunted, 24% are underweight and 10% are wasted, which shows that both acute and chronic undernutrition persist. From the regional report, the highest prevalence of stunting is in the Amhara region at 46.3% (16) which is even higher in North Shewa Zone of Amhara region at 52.4% (17).

While there several factors contribute to the problem of undernutrition in low-income countries including Ethiopia (18-20), inappropriate infant and young child feeding specially poor dietary diversity for children aged 6-23 months is one of the principal predictors of stunting (21-23). The nutritional deficiencies from this improper child feeding practice will result in growth retardation, impaired cognitive development, poor educational achievement and lower economic productivity which could become impossible to reverse later in life (24).

Many infants and young children in South East Asia and sub-Saharan Africa countries including Ethiopia subsist on less diversified and low nutrient density foods like gruel and porridges mostly made from cereal and legumes, lacking animal foods, fruits, and vegetables (25). In these countries children, 6-23 months with adequate minimum dietary diversity scores ranged from 15-71% (26, 27). In Ethiopia, only 14% of children 6-23 months feeding practices meet the minimum dietary diversity requirement. With regards to regional variation, the Amhara region has the second lowest consumption of minimum dietary diversity among children aged between 6 and 23 months which at 3.2% preceded by only the Afar region (16).

Living in rural residence, lower maternal education, poor maternal knowledge on child feeding practice, lack of access to maternal health care services (ANC,PNC and health facility delivery), not receiving nutrition education, younger age of the child, breast feed children, being the first child in birth order, lower household wealth status and having two and more number of children less than five years old in the household are some of the factors that affect the attainment of minimum dietary diversity of children 6-23 months (28-32).

In addition, those dietary practices related to religious beliefs that have been passed on from generation to generation can also possibly affect the child feeding practice (7). For instance, during the Orthodox Christian fasting periods followers are expected to be abstained from animal source foods for around 200 fasting days. During these fasting periods, it might be difficult for mothers/caregivers to prepare foods of animal origin to their children due to fear of utensil contamination and/or limited/non-availability of animal foods in the market. This can affect the dietary diversity and intake of nutrient rich foods by children (12, 13). Although the effect of these religious fasting periods on food consumption at a household level can be felt in both rural and urban areas, a previous study showed it is more prominent in urban areas because of the little contribution of animal source foods in rural areas (33).

Despite concern on the possible negative effect of fasting periods, there are limited published works investigating the effect of mothers/caregivers' fasting during the widely observed Ethiopian Orthodox Tewahido Christians fasting periods on children's dietary diversity. The few studies available did not measure the dietary diversity of children before and after the fasting periods making inference difficult (12, 13).

The present community based before-after study aimed at filling the current research gap by examining the effect of mothers/caregivers' fasting during the Ethiopian orthodox lent fasting season on dietary diversity of children's 6-23 months before and after the fasting season.

1.3 Significance of the study

Given attaining the minimum child dietary diversity is a major public health challenge in Ethiopia, there is a need for more information to fully understand its barriers and facilitators. The commonly identified factors affecting dietary diversity of children such as the educational and socioeconomic status of caregivers are dynamic which change from time to time. Religious values and related long established fasting practices, on the other hand, are rather static parameters that are likely to persist into the future generation affecting infant and young child feeding practice if not given due attention. Hence, it is important to investigate the role of religious fasting on reducing children's dietary diversity. The findings of this longitudinal study will help to shade light on the possible effect of long held religious beliefs with an emphasis on prioritizing children's diet during such periods.

2. LITERATURE REVIEW

2.1 Child under nutrition

Globally, over the past 20years, a notable decline in child under-nutrition had been witnessed. Stunting was reduced by more than 15% and wasting was slashed by 5% (15). Yet, childhood malnutrition still remains a major public health challenge especially in sub Saharan Africa and South Asia (5). Different studies conducted in resource poor settings including Sub-Saharan Africa (SSA) have shown that the prevalence of chronic child malnutrition ranged from 39.9-57.7% (34). In Ethiopia according to EDHS 2016; 38% of children under the age of five years were stunted (16). This high prevalence of stunting is attributed to different factors in different continents (19). In Africa, inappropriate complementary feeding practice is the most important determinant identified (18).

2.2Infant and Young child feeding /dietary diversity

Children with age between 6 and 23 months need more energy and nutrient dense foods to grow and develop, hence it is one of the windows of opportunity to prevent childhood malnutrition and growth faltering (1). Various indicators are used to assess infant and young child feeding practices. Among these, dietary diversity is one of the core indicators which is used to measure the proportion of children 6-23 months of age who received foods from four or more out of seven standard groups in the preceding day (2).

Studies show that dietary diversity is a useful indicator of dietary quality, nutrient adequacy (3, 4) and nutritional status of children. It is also significantly associated with height-for-age Z-scores (HAZ) for children 6–23 months old independent of socio economic factors (23, 35, 36). Therefore increasing dietary diversity in meals is one of the approaches to reduce the burden of stunting and chronic malnutrition among young children (35-37). However, globally only one-fourth of infants 6–23 months of age meet the criteria of dietary diversity and feeding frequency that are appropriate for their age (38). Data from Demographic and Health Surveys between 2010 and 2013 from 27 countries also reported that the median share of young children with a minimum dietary diversity (MDD) is low which was 27% (39).

The problem is worst in developing countries like Sub Saharan and South Asian families where complementary feeding practices lack the desirable amount, feeding frequency and nutrient density for optimal child growth and development (25) and so far meeting the minimum DD standard has been a major challenge to those countries (5). According to data from demographic and health survey and national family health survey analysis, the minimum dietary diversity among children aged 6–23 months across five South Asian countries ranged from 15% in India to 71% in Sri Lanka (27). A similar nutrition data in the WHO thirty two African regions from 2010–2015 showed that children 6-23 months fulfilling the MDD requirement range from 4.8% to 40.9% (40).

In Ethiopia, inadequate child dietary diversity is still a major problem not to attain appropriate infant and young child feeding. A systematic review and meta-analysis in Ethiopia from 2011 up to 2018 showed that the pooled prevalence of child dietary diversity among children age 6–23 months is 23.25% with considerable heterogeneity among different regions where the highest prevalence was observed in Addis Ababa (43.4%) and the lowest (12.6%) in Amhara region (41). Also from the results of different cross sectional studies done in the Amhara region of Ethiopia, we can see that the proportion of children 6-23 months with optimum dietary diversity is very low which ranged from 7% to 17% (28, 30, 42, 43). This large difference in children's dietary diversity between different regions is mainly due to differences in household wealth, parental education, and access to health services between rural and urban areas (44).

These findings are close to the analysis of EDHS 2011 and 2016 results (45, 46) but lower than the report from analysis of demographic health survey data in Kenya, Tanzania, and Uganda which showed 30-40% of children consumed diets with adequate diversity (26). It was also noted that the lower the dietary diversity in the household, the lesser the probability of consuming animal source foods like meat, milk, egg, and fish (47).

2.3 Factors associated with child dietary diversity

Different socio-demographic and economic characteristics of mothers/caretakers and children are identified for poor dietary diversity among children aged less than two years. A secondary data analysis of demographic health from different sub-Saharan and Asian countries survey showed that child breast feeding status (31), maternal education (48-52), child age (31, 48, 51), house hold wealth index (53), media exposure(48, 49, 53), and lack of postnatal care (48) are determinants for low child dietary diversity.

In Ethiopia different studies identified mothers age (43, 54-56), educational status (28, 32, 54),institution delivery (29, 42), receiving PNC (42, 43), birth order (28), age of the child (28, 30, 43), number of children less than five years old in the household (46), house hold income (13, 32, 45, 46) and knowledge of the mothers on MDD practice (30, 32, 56) as significant factors for the mother to attain the recommended child DD.

2.4 Religion taboo and diet

Culture, religion and the embedded traditional knowledge are the major determinants for our food preference. This is because of what and how we eat is affected by religious dietary rules like absolute or temporary food taboos including fasting periods (7). A well-known example of absolute religious taboos is the pork taboo among Muslims, beef meat taboo in Hindu and meat from animals that do not have cloven hoofs including pig meat are forbidden in Ethiopian Orthodox Tewahido Christian church (9, 57). In Ethiopia, religion plays a central role in shaping diets during a calendar year. This is particularly the case for the Orthodox Tewahido Christians who comprise 44% of the Ethiopian population (8).

2.5 Fasting and child dietary diversity

The Ethiopian Orthodox Tewahido Church year has a number of fasting periods ranging from a single day to eight weeks in the case of the Great Lent. During this period consumption of animal source food is forbidden for followers who are greater than seven years of age (10, 57). And studies have shown that during this fasting periods animal foods are occasionally found in the market and even if it is available most of the mothers do not like to touch any of the animal

source foods let alone prepare such foods to their children, perceiving that it will break the fasting rule (12, 13, 58).

A formative research conducted by Alive & Thrive in Tigray identified fasting seasons as a key determinant for mothers and family members not to adopt the recommended IYCF practices because mothers were not willing to prepare non-fasting foods to their children during fasting periods. Some mothers also mentioned the non-affordability and non-availability of those animal foods in the market as a reason (12).

Another cross sectional study conducted during the fasting season in Dejen district report 13.6% of children 6-23months met the minimum dietary diversity and a very small proportion of children consumed animal source foods. Again, the reflected reason by the mothers for not preparing those animal foods separately to their children was fear of contamination of utensils that are used for cooking family foods. Also during the fasting season, many butcher shops closed their businesses due to lack of demand so it was difficult to obtain animal products in the market. And compared to their economic condition, the mothers fasting status was found as the main reason not to fed diet of animal origin to the children during the fasting period (13). But unlike the Ethiopian Orthodox Tewahido Christians' fasting, Ramadan affects only the timing of meals, rather than restricting the content of the meals, so it may not have a similar effect on child dietary diversity (12, 13, 59).

2.6 Conceptual framework

This conceptual framework is an adaptation of the conceptual model developed by UNICEF for explaining factors affecting childhood malnutrition and from different literatures. This study mainly focuses on those variables in the colored boxes.

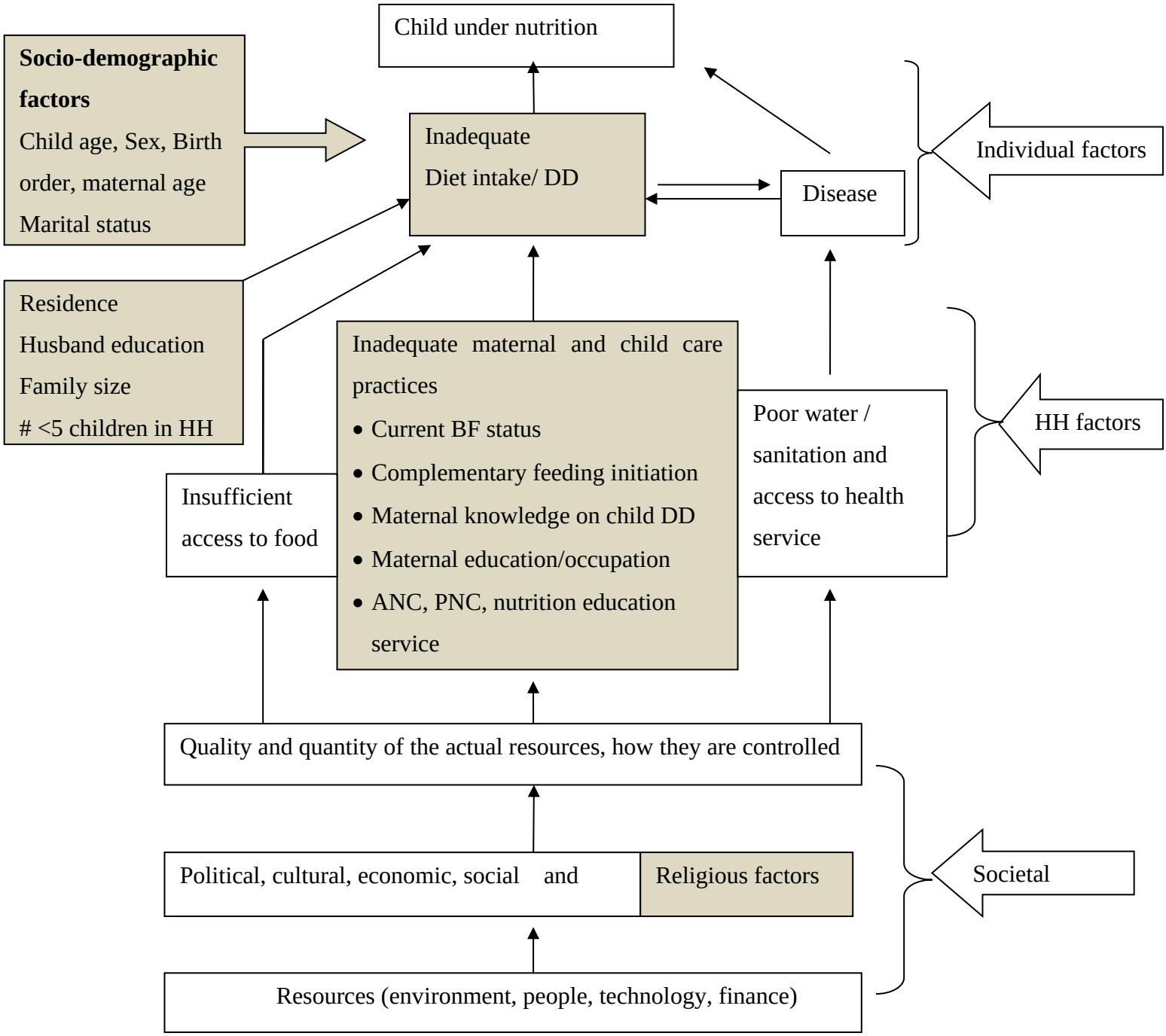

Figure 1. Conceptual framework of factors affecting the DD of children 6-23 months (28-32).

3. OBJECTIVES

3.1 General objective

- To estimate the effect of mothers/care givers' fasting on dietary diversity of children 6-23 months from January to April 2019, in Debrebirhan, North Shewa zone, Ethiopia

3.2 Specific objective

- To estimate the effect of mothers/care-givers' fasting status on dietary diversity of children 6-23months from January to April 2019 in Debrebirhan, Ethiopia

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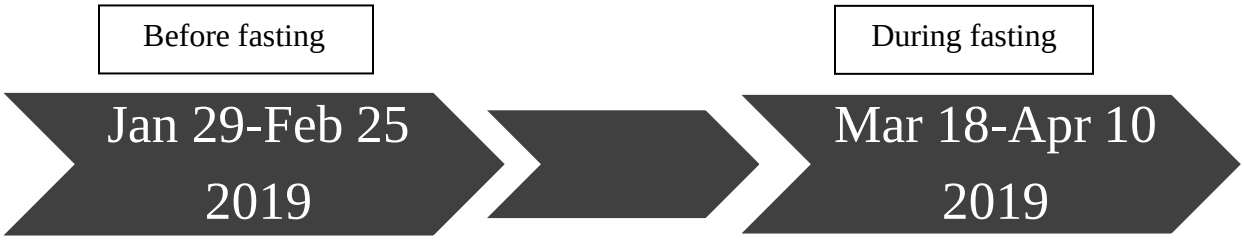
6. METHODOLOGY

6.1 Study Area

The study was conducted in Debrebirhan wereda, which is one of the 177 districts of Amhara Regions in Ethiopia. It is found in North Shewa Zone, Amhara regional state, 130 km away from Addis Ababa. The Woreda is administratively divided into 9 urban and 5 rural kebeles. Based on the 2018 Debrebirhan Health Bureau report, its population is estimated to be 108,825 and children aged under two are estimated to be around 5,952 of which 5,084 are in urban and 868 in rural areas. The majority of the inhabitants practice Ethiopian Orthodox Christianity at 94.1% while 3.3% and 2.2% of the population identify themselves as Muslims and Protestants. The most commonly produced cereals in the area are Teff, maize, wheat, barley, and sorghum. From vegetable and root crops red/green peppers, Ethiopian cabbage, tomatoes, potatoes, onion, and garlic are also produced. It's also the main area for livestock production like cattle, sheep, and goats (8, 60).

6.2 Study Period

The study was conducted during the Ethiopian Orthodox non-fasting periods (29th January 2019 to 25th February 2019) and lent fasting period (18th March 2019 to 10th April 2019).



6.3 Study Design

A community based longitudnal study was conducted to assess the dietary diversity of children 6-23 months before and during the lent fasting season.

6.4 Population

6.4.1 Target population

All children 6-23months whose mothers were Orthodox Tewahido Christian living in Debrebirhan.

6.4.2 Source population

All children 6-23months whose mothers were Orthodox Tewahido Christian living in Debrebirhan.

6.4.3 Study population

Randomly selected households with Children's 6-23 months whose mothers/care givers were Orthodox Tewahido Christian in the selected urban and rural kebeles of Debrebirhan.

6.4.4 Inclusion criteria

- All children aged 6-23 months, whose mothers/caregivers were orthodox Tewahido Christian

- All children aged 6-23 months, whose mothers/caregivers were permanent residents (lived at least for 6 months in Debrebirhan)
    - In households where more than one child 6-23months were found, the youngest child was included.

6.4.5 Exclusion criteria

- Children whose mothers or care givers were seriously ill or couldn't respond or communicate (e.g., Unable to hear/talk)
- Children who had illness in the past 1 week of data collection time that prevented him/her from eating as usual (decreased or increased the child's appetite)
- Mothers/caregivers who were absent in two repeated visits during data collection were excluded.

6.5 Sample size determination

The sample size was calculated using the formula of sample size determination for a double population proportion by Epi Info window version 7 statistical software based on the following assumptions. The double proportion formula,

$$N = \frac{(Z\alpha/_2\sqrt{(1 + 1/_r)P(1-P)} + Z_\beta\sqrt{P_1(1-P_1) + \frac{P_2(1-P_2)}{r}})^2}{(P_1 - P_2)^2}$$

$$P = \frac{P_1 + rP_2}{1 + r}$$

With the assumptions of;

- P1=Proportion of minimum child dietary diversity during fasting period =13.6% (13)
- P2=Expected proportion of minimum child dietary diversity during the non-fasting period =27.2% (13)
- $Z_{\alpha/2}$ =5% probability of committing type 1 error (1.96)
- $Z_{1-\beta}$ =20% probability of rejecting a true difference (0.84)
- r=the ratio of the two samples; that is one.
- Using the above formula, the sample size became 137 and after correction formula, $\frac{n}{1+n/N}$, it was 130 for each group. On this number, 10% for non-respondent and design effect of 1.5 was added and gave us a sample of **218** participants before and during the fasting period**.**

6.6 Sampling procedure

A three stage sampling technique was used to recruit study subjects. First, all kebeles, which are the smallest administrative unit, was stratified into urban and rural settings. The total sample size was then distributed to the two strata proportionally to the size of children 6-23months found in each stratum using the data from Debrebirihan health office. Second, five kebeles from urban and two kebeles from rural settings were selected by a simple random sampling technique and the sample from each stratum was again proportionally allocated to each urban and rural kebeles. Third, households fulfilling the inclusion criteria were included from each kebeles by a simple random sampling technique using the house hold list from HEWs. Only one study subject was selected from each household.

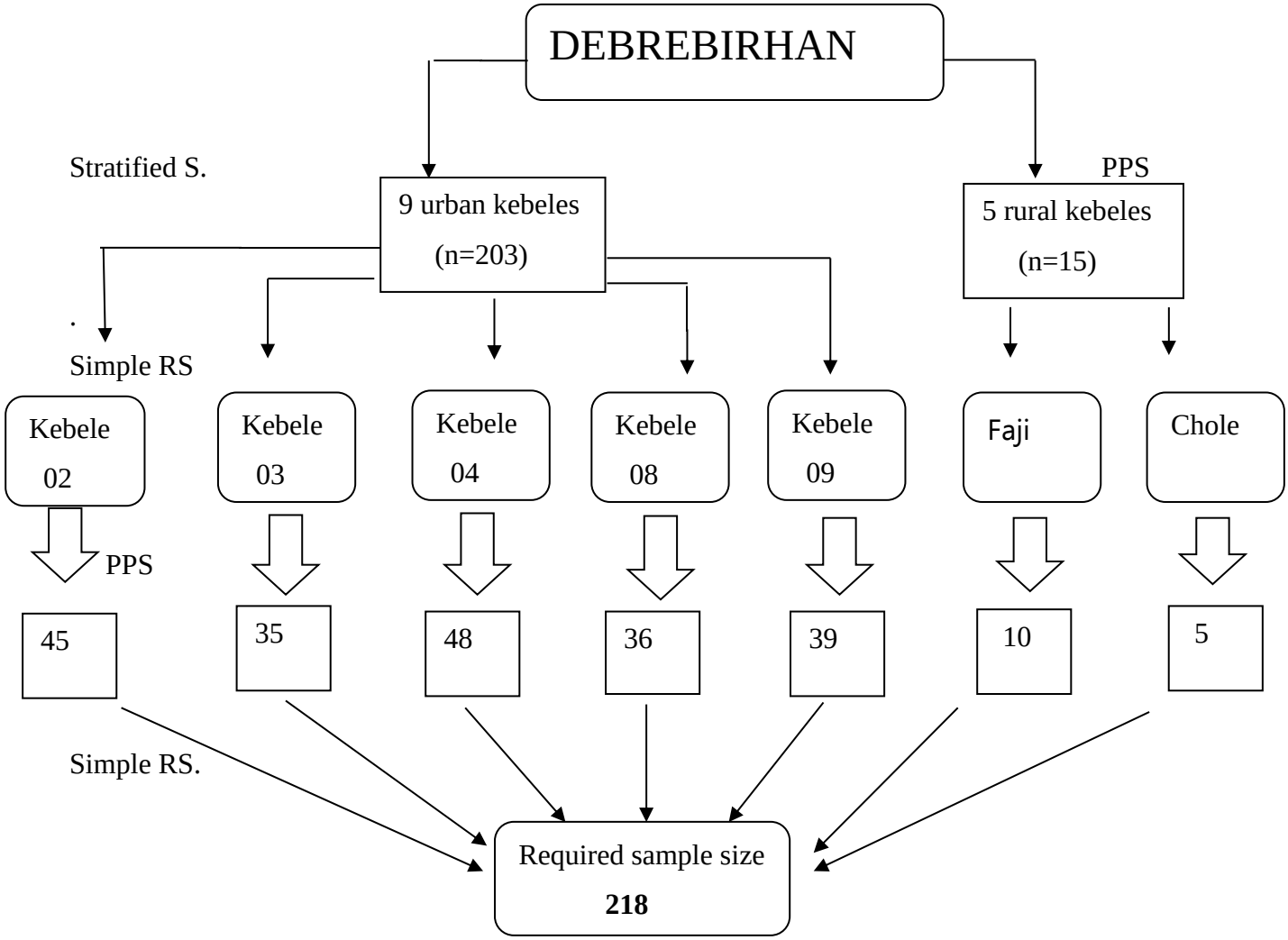


Figure 2.sampling technique and procedure

6.7 Data collection procedure

Data was collected two times from the same participants 6 days before the lent fasting period and during the fasting period (on the 15th fasting day) using the interviewer- administered questionnaire. The questionnaire consisted of information on socio-demographic factors, fasting characteristics, dietary intake, household conditions, and health services related factors. Information on child dietary diversity and child breast feeding status was collected at both times while questions on background socio-demographic profile of respondents were asked only once at the first interview. Fasting status of mothers/care-givers was asked during the second follow-up interview.

Dietary data were collected using dietary diversity score (DDS) which is adopted from the WHO standardized questionnaire for infant and young child feeding (IYCF) (2). This is based on mothers'/caregivers' recall of foods given to her child in the past twenty-four hours (24 h) before the survey. Other parts of the data collection tool were adapted from EDHS 2016(16). The questionnaire was first prepared in English and translated to the local language (Amharic).

6.8 Data quality management

Data quality was assured before, during and after the data collection process.

Before data collection

Before data collection, the principal investigator gave three-days training for the data collectors/health extension workers and supervisor to have the same understanding about the purpose of the study, data collection procedure, what each question in the questionnaire intend to measure and how they can maintain ethical standards. The content of the questionnaire was crosschecked by the principal investigator against the conceptual framework of the study, to make sure that all items that should be included in the final questionnaire were really in there. Pre testing of the translated Amharic version questionnaire was made in Debrebirhan wereda, Kebele 01, to check the consistency of the questionnaires and was modified accordingly.

During data collection: Completeness, consistency & coding of the data was checked. Day-To-Day supervision was made by the supervisor and principal investigator throughout the data

collection process to assure the quality of the data. Non-respondents were re-contacted twice and respondents who return forms with missing information were asked to complete the questionnaire.

After data collection: Non-overlapping numerical code was assigned for each question and the coded data were entered using Epi data version 4.4.2.1 and cleaned by STATA 15.

6.9 Study variables

6.9.1 Outcome variable

- **Minimum Dietary Diversity (MDD)(Yes, No)**

The outcome measure of this study is minimum dietary diversity, which was measured according to the WHO standard definition as the proportion of children 6–23 months of age who received foods from 4 or more foods out of the seven food groups; namely, [(1) grains, roots, and tubers, (2) legumes and nuts, (3) dairy products, (4) flesh foods (meat, fish, poultry and liver/organ meats), (5) eggs, (6) vitamin-A rich fruits and vegetables, (7) other fruits and vegetables] within the preceding 24 h of interview for both breast fed and non-breastfed children. Consumption of any amount of food from each food group was sufficient to count unless if an item was only used as a condiment. Those children who received three foods or fewer out of the seven food groups within the preceding 24 h of interview were considered as they had a **sub-optimal dietary diversity.**

6.9.2 Other variables

- **Demographic and Socio-economic characteristics**

Residence, age (maternal, child), education status and occupation(mother, father), marital status, family size, number of under 5 years old children in the HH, child sex and birth order were included. Child age was measured in completed months, while maternal age measured in completed years. Educational status was measured using scales ranging from 1) cannot read and write, 2) read and write, but no formal school 3) primary education 4) secondary education 5)some college or technical school 6) college graduate or above. Socio economic status of the household was assessed using a wealth index. Household asset ownership variables and variables related to housing conditions, which could indicate the living standard of the survey area was

included in the principal component analysis. The wealth quintile was computed with 5 categories; namely, poorest, poor, medium, rich and richest.

- **Maternal health care service and child breast feeding status**

The mother was asked the number of Ante-Natal Care visit she had during her pregnancy of the index child and Post Natal Care visit with a score of "1" given to those who have and score of "0" given to those who did not. Place of delivery for the index child was also assessed if it was in a health institution or home.

- **Maternal nutrition education**

The mother was asked if she ever got a nutrition education/counseling about the main IYCF components. 1) about exclusive breast feeding 2) about the continuation of breast feeding 3) about the initiation of complementary feeding 4) about types of food groups the child should get /dietary diversity/ 5) about the consistency of the food 6) about the frequency of feeding. A score of "1" given to those who said "Yes" and score of "0" given to those who said "No". A mother who said yes to at least one of the six components was also asked the place where she got the nutrition education or counseling.

- **Maternal/care givers knowledge about dietary diversity and child feeding**

The mothers' knowledge was assessed using eight knowledge questions. 1) Age to start complementary feeding 2) Number of food groups a 6-23month child should obtain 3) A 6–8month child can feed meat, organ meat, like liver, kidney 4) A 9- 11month child can feed meat, organ meat, like liver, kidney 5) A 12-23 month child can feed meat, organ meat, like liver, kidney 6) A 6–8 month child can feed egg 7) A 9–11 month child can feed egg 8) A 12–23 month child can feed egg.

6.10 Operational definitions

Caregiver: -a family member or another individual other than the mother who knows the most about what the child is fed in the past 24 hr.

Fasting mothers/care givers: - were defined as those mothers/care givers who were in any of the three categories during the lent fasting season for the past 24 hours.

I. Those who were not consuming animal source food except fish OR
II. Those who were not consuming animal source food including fish OR
III. Those who were not consuming animal source food ± fish and stay for some hour a day with no consumption of any food including water (up to 9 am, 12 am, 3 pm or 6 pm)

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Received nutrition education

Mothers who received a nutrition education were those whose response was "YES" to all of the six main IYCF indicators.

Maternal/care givers knowledge about dietary diversity and child feeding

Knowledgeable mothers/caregivers were those who had a score of six and above from the provided eight knowledge questions about dietary diversity and child feeding. For the eight knowledge questions, each correct response (yes) earned one point, whereas any wrong response (no) got zero. The calculated knowledge score ranged from 1 to 8 points. Average (mean) score of 6 points (±1.74 standard deviation) was used to decide the cutoffs.

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6.11Data processing and analysis

The collected data was entered into using Epi data 4.4.2.1 and exported to STATA 15 for cleaning and further analysis. Both descriptive and analytic statistical methods were used to present the findings of the study.

'Minimum Dietary Diversity ' was coded as '1' for those who consumed four or more foods and '0' for those less than four food groups during the previous day.

McNemar paired test was used to analyze within group comparison of pre and during fasting test results. A P-value of less than 0.05 with a 95% confidence level was used to declare statistical significance.

6.12 Ethical considerations

The ethical approval for this study was obtained from the Ethical Review Committee of Addis Ababa University, College of Health Sciences, and School of Public Health prior to initiation of the study. Additional letter of support was obtained from Debrebirhan wereda administration and health office and disseminated to respective kebeles. The purpose of the study was explained to the study participants. They were informed that the procedures used in the study do not cause any harm to them or their child. They were told that they have a full right to participate or not, to withdraw the consent and stop participation at any time without any form of prejudice.

Study participants were also informed that confidentiality of the information and privacy of the respondents would be assured at each step of the study process by that all the data obtained from them would be kept confidential using codes instead of any personal identifiers. Before enrolment in the study, both verbal and written consent was obtained from mothers/care givers after the nature of the study was fully explained. Finally, the eligible and the volunteer mothers/care givers were included in the study.

After collecting the second round data, the study participants who did not attain the MDD has been counseled by the data collectors on how to meet the optimum child dietary diversity using available foods in the household and how to prepare animal source foods to their children without affecting their fasting status.

6.13 Dissemination of results

The final report of this study will be submitted to Addis Ababa University, College of Health Sciences School of Public Health. The report will also be shared with Debrebirhan Health Bureau. In addition, effort will be made to disseminate the results through presentations in different seminars, workshops, scientific conferences and publications in scientific journals.

7. RESULT

7.1 Socio-demographic characteristics

Among 218 sampled participants, 216 and 214 participants completed interviews in the pre-fasting time and during the fasting period with a response rate of 99.0% and 98.2% respectively. This is mainly because in the second round children above 23 months and those participants who were absent after two repeated visits were excluded.

The median age of the children was 14 months. Of the children included in the study, 52.7 % were male and 47.2 % were female. Most of the children's mothers/caregivers (86.2%) belonged to age less than 34 years old and 59.2% of the children were the first child of their parents. Regarding the educational status 57.4% and 55.5% of mother and father, had attained secondary school and above respectively. Occupationally, more than half (60.5%) of the mothers were housewives, and 38.9% of the fathers were privately employed.

The majority (87.6%) of the mothers were in a union or married during the data collection period. The median household size was four and of the total households, 84.4% had only one under five children. Regarding feeding practice, 88.5% and 83.5% of mothers were breastfeeding their children before and during the fasting time respectively.

Table 1. Socio-demographic and economic characteristics of the study participants (n = 218) at baseline in Debrebirhan, North Shewa Zone Ethiopia (February-June, 2019).

Characteristics		Number n	Percent %
Residence	Urban	172	78.9
	Rural	46	21.1
Age of the mothers/caregivers	15-24	33	15.1
	25-34	155	71.1
	>=35	30	13.8
Mother/caregivers education status	Noformal education	34	15.6
	Primary school	59	27.1
	Secondary school	78	35.8
	Higher education	47	21.6
Father education status	Noformal education	44	20.2
	Primary school	53	24.3
	Secondary school	51	23.4
	Higher education	70	32.1
Mothers/caregivers occupation	Housewife/Farmer	132	60.5
	Government employe	35	16.1
	Merchant	13	5.9
	Private/NGO	33	15.1
	Other[a]	5	2.3
Father occupation	Farmer	38	17.4
	Government employe	72	33.0
	Merchant	15	6.9
	Private/NGO	85	38.9
	Other[b]	8	3.7

Marital status	single	15	6.9
	married	191	87.6
	divorced	12	5.5
Family size	≤4	171	78.4
	>=4	47	21.6
Number of < 5 children in HH	One	184	84.4
	> = two	34	15.6
child age in month	6–11 month	60	27.5
	12–17 month	97	44.5
	18–23 month	61	27.9
Child sex	Male	115	52.7
	Female	103	47.2
Birth order	First	129	59.2
	Second	56	25.7
	Third and above	33	15.1
HH Wealth index	Poorest	57	26.1
	Poor	44	20.2
	Middle	37	16.9
	Rich	37	16.9
	Richest	43	19.7
Breastfeeding status	Yes		
(Before fasting)	No	193	88.5
		25	11.5
Breastfeeding status	Yes	182	83.5
(During fasting)	No	36	16.5

[a]student /own business [b] student /daily laborer/own business/priest

7.2 Maternal health care service and nutrition education characteristics

Table 2 summarizes the maternal health services and nutrition education. The majority of the mothers/caregivers (72.6%) had four or more antenatal care visits (ANC) during their last pregnancy. Around 51.8% of them had a post-natal care visit (PNC) during their last pregnancy.

Almost all of the mothers (99.5%) had given their last births at health facilities. About 77.1% of the mothers get education/advice about exclusive breast feeding, continuation of breast feeding up to two years, initiation of complementary feeding, the types of food groups that the child should get i.e. dietary diversity, consistency of the food, and frequency of feeding per day.

Most of the mothers/caregivers (85.7%) reported that they got this education or advice at health facility during their pregnancy or delivery or after delivery when they went for vaccination or family planning. The remaining 14.3% of the respondents got it from media (TV, Radio, Internet), at home by health extension workers and from another source like from elders or friends or by her own experiences.

Table 2. Maternal health care service and nutrition education characteristics at baseline in Debrebirhan town, North Shewa Ethiopia, 2019

Characteristics		**Number**	**Percent**
		N	**%**
Number of ANC visit	<=One	5	2.3
	Two	10	4.6
	Three	44	20.3
	.>=Four	158	72.8
PNC visit	Yes	113	51.8
	No	105	48.2

Place of delivery	Institution	218	100.0
	Home	0	0.0
Ever received nutrition education	Yes	168	77.1
	No	50	22.9
Place where nutrition education is received	From health facility	180	85.7
	At home by HEW	10	4.8
	From media (TV, Radio…	11	5.2
	Other [c]	9	4.2

[c]from her experience/heard from others like from elder mother, neighbors

7.3 Knowledge of mothers/caregivers on dietary diversity and child feeding

Concerning the knowledge of mothers/caregivers about child feeding, out of the eight knowledge questions on dietary diversity and child feeding more than half (68.1%) were knowledgeable answering six and above questions correctly. Among the participants, 214(98.2%) of mothers/caregivers knew that complementary foods should be introduced at six months of child age.

With regard to the provision of different food groups to the child, 99.5% of them listed a minimum of four types of food groups that a child should consume. The percentage of mothers/caregivers who stated that a child with age of 6-8months, 9-11months, and 12-23months could consume meat was 69.3%, 84.4%, and 89.9% respectively. Similarly, 73.4%, 87.6% and 93.1% of the participants recognized that they could feed egg to a child age 6-8months, 9-11months, and 12-23months respectively.

Table 3. Knowledge of mothers/caregivers on dietary diversity and child feeding at baseline in Debrebirhan town, North Shewa Ethiopia, 2019

Characteristics		Number N	Percent %
Age to start complementary feeding	At 6 month	214	98.2
	Other	4	1.84
Number of food groups a 6-23month child should obtain	Mothers/caregivers who list ≥food groups	215	99.5
	Mothers/caregivers who list<4food groups	3	0.46
A 6–8month child can feed meat, organ meat, like liver, kidney	Yes	151	69.3
	No	67	30.0
9- 11-month child can feed meat, organ meat, like liver, kidney.	Yes	184	84.4
	No	34	15.6
A 12–23 month child can feed meat, organ meat, like liver, kidney.	Yes	196	89.9
	No	22	10.1
A 6–8 month child can feed egg.	Yes	160	73.4
	No	58	26.6
A 9–11 month child can feed egg.	Yes	191	87.6
	No	27	12.4
A 12–23 month child can feed egg.	Yes	203	93.1
	No	15	6.9
Overall knowledge score	Good knowledge	147	68.1
	Poor knowledge	69	31.9

7.4 Fasting characteristics of the mothers /care givers

All the respondents, 218 (100%) were fasting during the lent season (Great fast). The subjects had been practicing the fasting rituals for a mean of 17 ± 7.2 years. Among the respondents, 89.4% practiced all the seven fasting periods of the Ethiopian Orthodox Church and 98.2% practiced fasting on Wednesday and Friday. Two percent of the mothers/caregivers did not participate in any of the fasting period. During the fasting period, all the fasting mothers/caregivers had a practice of avoiding animal source foods; in addition, 66.5% of them stay up to 9 am without eating/drinking any meal/drinks and 50.9% of them skip breakfasts and stay up to 12 pm and 3.6% of the fasting group fasted until 3 pm without taking any food/ drink.

Table 4. Fasting characteristics of the mother/care giver in Debrebirhan town, North Shewa Ethiopia, 2019

Characteristics		**Frequency(n)**	**Percent (%)**
Mothers/caregivers fasting status during lent	Yes	218	100.0
Fasting characteristics	Not consuming animal source food except fish	9	4.1
	Not consuming animal source food including fish	206	94.5
	Not consuming animal source food including fish and fast up to 9 am	145	67.4
	Not consuming animal source food including fish and fast up to 12 pm	111	51.6
	Not consuming animal source food including fish and fast up to 3 pm	8	3.7
Fasting experience(in years)	<10 years	19	8.9
	10-20years	156	72.9
	>20 years	39	18.2

Reason not to fed diet of animal origin	Insufficient income	36 (57.1)	4 (3.3)
	Non-availability	1 (1.6)	11 (9.1)
	child is too young	9 (14.3)	3 (2.5)
	Fasting status	0 (0.0)	96 (79.3)
	Other[d]	17 (26.9)	7 (5.8)

[d]child didn't like it/ he refuse to eat/ I didn't remember

7.5 Children dietary diversity and food consumption pattern in the two periods

Figures 3 present the types of food fed to the children in the two periods. Before the lent fasting season, the diet of the study participants (children) was mainly based on grains (98.6%) and legumes and nuts (79.4%). Meat, egg and dairy products consumption was (17.9%), (29.4%) and (55.5%) respectively. Vitamin A rich and other fruits and vegetables was consumed in 9.2%, and 15.1% respectively. The proportion of children who ate from four or more food grou ps was 23.4% (95%CI: 0.18-0.29).

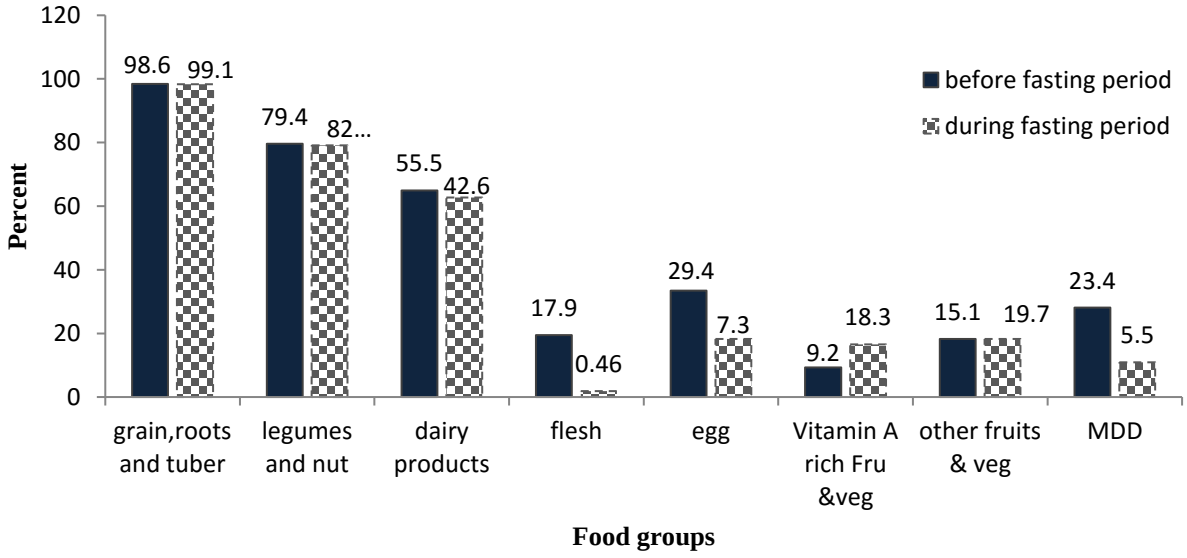

Figure 3. Food consumption patterns of children 6-23months before and during the fasting period, Debrebirhan North Shewa, Ethiopia, 2019

During fasting time, grain and tuber consumption was 99.1% and legumes, nut was 82.1 %. Meat, egg and dairy products consumption was 0.46% ,7.3% and was 42.6% respectively. Consumption of Vitamin A rich and other fruits and vegetables was 18.3 % and 19.7%

respectively. 5.5% (95% CI: 0.03-0.09) of the children had received minimum dietary diversity during this fasting time.

Table 5 shows the different food group consumption in the two periods with mean and Standard deviation. Before fasting time the mean Dietary Diversity Score (DDS) which was determined based on a 24-h recall method was 3.05 (± 0.94) ranging between 1 and 6 and during fasting time the mean DDS was 2.68 (± 0.68) ranging between one and six.

Table 5Consumption of different food groups and dietary diversity in the two periods

Food groups	**Before fasting**	**During fasting**
	Mean (±)SD	**Mean (±) SD**
Grain, tuber & roots	1.01±0.12	1.01±0.09
Legume & nut	1.21±0.40	1.18±0.38
Dairy products	1.44±0.49	1.57±0.49
Flesh foods	1.82±0.38	1.99±0.07
Egg	1.71±0.46	1.92±0.26
Vitamin A rich fruits & vegetables	1.91±0.28	1.81±0.38
Other fruits & vegetables	1.84±0.34	1.80±0.39
MDD	3.05±0.94	2.68±0.68

7.8 Comparison of food consumption pattern before and during lent fast period

The result from McNemar test shows a significant decrement in child DDS from the pre-fast period 23.4% to 5.5% during the lent fast season (p=0.0000). The proportion of children who consumed flesh,milk and egg was significantly higher during the pre-fasting period (p=0.0149, p=0.0000 and p=0.0000, respectively), while vitamin A rich fruits and vegetables food groups were consumed more during the fasting period (p=0.0022). However, there was no significant difference in the consumption of grains, roots and tubers, legumes and nuts and other fruits and vegetables food groups in the two periods.(Table 6)

Table 6 Comparison of food consumption pattern of 6–23-month-old children during the non fasting and lent fasting periods in Debrebirhan, North Shewa Ethiopia, 2019

Characteristics	Before Lent fasting time n(%)	During Lent fasting time n(%)	McNemar p-value	95% CI
Children who consumed grain, roots, and tuber	215(98.6)	216(99.1)	1.0000	(-0.02,0.02)
Children who consumed legumes and nut	173(79.4)	179(82.1)	0.3075	(-0.02,0.08)
Children who consumed dairy product	121(55.5)	92(42.6)	0.0000**	(-0.19,-0.07)
Children who consumed flesh foods	39(17.9)	1(0.46)	0.0000**	(-0.23,-0.12)
Children who consumed Vitamin A rich fruits and vegetable	20(9.2)	40(18.3)	0.0022*	(0.03,0.15)
Children who consumed other fruits and vegetables	33(15.1)	43(19.7)	0.2280	(-0.03,0.12)
MDD	51(23.4)	12(5.5)	0.0000**	(-0.25,-0.11)

P - Values were from comparison between before and during fasting using McNemar test with significant level at $p < 0.05$

*P-value is significant at < 0.01. **P-value is significant at < 0.001

From the result of multiple linear regression wherein all covariates were included, a statistically significant negative association between child dietary diversity and time variable was observed. i.e. a time changes from non-fasting to the fasting period was associated with 0.14 units decrease in child dietary diversity. Similariy a change in time period was associated with a 0.14, 0.54 and 0.39 unit decreamnet in the child diary products,flesh and egg consumption.

Table 7 Multiple linear regression analysis of the association between maternal and child DD

Variables	Before fasting period n(%)	During fasting period n(%)	Crude β	Adjusted β	P value	95% CI
MDD	51(23.4)	12(5.5)	-0.13	-0.14	0.000	-0.19,-0.08
Consumption of grain, roots, and tuber	215(98.6)	216(99.1)	0.10	0.09	0.676	-0.35,0.54
Consumption of legumes and nut	173(79.4)	179(82.1)	0.04	0.05	0.430	-0.07,0.17
Consumption of dairy product	121(55.5)	92(42.6)	-0.13	-0.14*	0.005	-0.23,-0.04
Consumption of flesh foods	39(17.9)	1(0.46)	-0.52	-0.54*	0.000	-0.70,-0.38
Children who consumed Egg	64(29.4)	16(7.3)	-0.37	-0.39*	0.000	-0.51,-0.27
Consumption of Vitamin A rich fruits and vegetable	20(9.2)	40(18.3)	0.19	0.19*	0.006	0.06,0.34
Consumption of other fruits and vegetables	33(15.1)	43(19.7)	0.08	0.08	0.230	-0.05,0.20

Result from bivariate and multiple linear regression adjusted for covariates(breast feeding status, child age,

maternal education, maternal knowledge on child dietary diversity and nutrition education)

*P-value is significant at < 0.01

8. DISCUSSION

The main aim of this study was to see the effect of mothers/caregivers' fasting practice on the dietary diversity of children 6-23 months by measuring their food intake at two different time intervals. This study revealed that due to change in the consumption of meat, egg, milk and Vitamin A rich fruits and vegetables, there was a significant difference in the children's dietary diversity score with in these periods.

In the first measurement before the fasting time, 23.4% of children met the required dietary diversity based on the WHO recommendation by receiving a minimum of four food groups in the past 24hour preceding the survey. This result is consistent with results from a meta-analysis pooled prevalence of dietary diversity feeding practice in Ethiopia (41) and with results from some African regions like Namibia, Benin, Ghana, Rwanda and Mozambique (40). However, this finding is higher than the previous results conducted in different regions of Ethiopia (28, 41, 43, 55, 56) and lower when compared with studies conducted in Kenya, Bangladesh, Nepal and Srilanka (27, 40).

This variation in result could be due to the differences in study setting; Debrebirhan is close to Addis Ababa that makes it a better urbanized area than the areas in the previous studies (28, 43). Socioeconomic factors like women's literacy rate (27, 40) and the timing of different studies also vary (13, 28, 42, 43). This finding is also different from the 2011 and 2016 EDHS analysis results (45, 46), and this might be explained by that the EDHS was done countrywide on a larger sample. In the second measurement during the fasting time, the childrens dietary diversty significantly decreased to 5.5%. This result is in line with the result from a study done in Dejen district north west Ethiopia (13).

The diet of children in the study area was on average dominantly composed of grains (98.8%) and legumes (80.7%) which were consumed in the same amount in both the pre and during fasting periods. This is similar to that of results from a study done in the northwest and southern region of Ethiopia (29, 32, 42). The other and main finding of the study is the consumption of these different food groups specifically animal foods significantly decreased over the fasting

period. This, in turn, resulted in a significant decrement of the children's dietary diversity in the fasting period.

Before the fasting time, the consumption of flesh foods was 17.9% which is almost similar to results from studies done in Dabat, Addis Ababa and Pakistan (31, 32, 43). But it was relatively higher when it is compared to the results of other studies (28, 29,42, 43). This can possibly be due to the variation in the study time and also the community in the area of this study could have a good animal food consumption culture (61). During the fasting period, the proportion of children who ate flesh decreased to 0.5%, which is comparable with that result of a study done during a fasting period (0%) (13).

Egg was also consumed by 29.4% of children in the pre-fasting period which is almost close with the report from AddisAbaba (30%) and Wolaita Zone (32.2%) (32, 54). But during the fasting time, it decreased to 7.3% which is higher than the Dejen report (2%) (13). This can be possibly due to that most of the mothers/caregivers in our area were from urban residence and might have a better child feeding practice compared to mothers from the previous area.

The consumption of dairy products before the fasting time was 55.5%. This result was almost close to the finding from a study done in Addis Ababa (32).This number decreased to 42.6% during fasting time which is much more higher than the Dejen report. This discrepancy could be explained by that there is a better cattle production and milk availability in our study area (61).

Vitamin A rich fruits and vegetables were consumed by 9.2% of the children before the fasting time. This finding was similar to studies conducted in Amhara and Southern regions (43, 55). As opposed to meat, milk and egg consumption, consumption of vitamin A rich fruits and vegetables increased to 18.3% in the fasting time. This was similar to a study conducted in Dejen during the lent fast season, where the consumption of Vitamin A rich food and vegetable was found to be 17.5% (13). This might be because vegetables are more available during fasting season and mothers predominantly use those vegetables for consumption at this period.

The reason for the drop in consumption of animal source foods during fasting time is mainly explained by the mothers/caregivers' fasting status. Despite the fact that children under seven are exempted from following the fasting rule, mothers/caregivers didn't prepare those foods separately and fed to their children during the fasting seasons due to fear of contamination of utensils that are used for other family members, to avoid the smell of the food while cooking, by considering touching those foods as breaking their fast (79.3%) and non-availability of those foods in the area during this fasting period (9.1%).

This finding is supported by the previous studies (12, 13) which reported the mothers/caregivers' fasting practice as one of the contributing factors not to attain the recommended child dietary diversity. A study done by Seleshe.S and his colleges also showed that this religious periodic restriction of animal food consumption influences meat consumption pattern in the population because most of the butcheries were closed due to the decrease in demand of meat during fasting seasons including Wednesday and Friday, so that it was difficult to obtain animal foods in this periods (59).

In this study there was a significant relation ship between child dietary diversity score and fasting time where the proportion of children with adequate dietery diversity decreased during the fasting periods compared to the non-fasting periods. This was supported by a study done in Dejen which showed that compared to other proposed factors by the mothers, the reasons related to their fasting status took the higher odds for not meeting the MDD (13).

9. LIMITATION AND STRENGTH OF THE STUDY

9.1 Limitation

- We used only a single 24hr recall to get the children consumption of seven food groups.
- Recall bias.
- Social desirability bias

9.2 Strength

- The major strength of this study is its longitudinal nature which helped us better understand the effect of fasting on the children's dietary diversity by that it tried to determine the dietary diversity of children at two different times.

10. CONCLUSION AND RECOMMENDATION

10.1 Conclusion

The findings from this study showed that mothers/caregivers' fasting status or abstention from animal foods during the orthodox fasting periods could negatively affect the dietary diversity of children 6-23 months in the household by decreasing the consumption of animal source foods by those children. This is in fact due to fear of utensil contamination and non-availability of those foods in fasting time, mothers/caregivers did not prepare animal foods for their children. Therefore, the mothers/caregivers' fasting practice might be a worsening factor for the problem issue, thought the dietary diversity of children 6-23months in this area is very low in general.

10.2 Recommendation

For organizations working on nutrition

- We suggest organizations working in the nutrition areas to strongly work with EOTC and strengthen their strategies by considering mothers fasting practice as one of the contributing factors for the low prevalence of child dietary diversity practice in Ethiopia.
- They should give a continuous trainings or seminars to priests and deacons about proper child feeding practice.

For religious leaders

- They should teach the mothers/caregivers that children under two years old need special care to have healthy growth and development so that mothers should feed their children from all types of nutritious foods including animal source foods without restrictions throughout the year irrespective of the fasting periods.

For health professionals/ Medias

- Since there is a knowledge practice gap among the mothers/caregivers, both health professional and media personnel should give special attention and give proper counseling on appropriate child feeding practices to the mothers to feed the recommended dietary diversity to their children regardless of the mothers fasting status.

Ministry of Education and Women Affairs Bureau

- Should encourage mothers/caregivers to get a better education as it is one of the strategies to improve child-feeding practice.

Agricultural and meat processing industries

- As vegetables were consumed less before the fasting time and meat/eggs were consumed in small amount during fasting time, agricultural and meat processing industries should try to promote availability of vegetables, eggs and meat butcheries in the market in all seasons; so that this will improve access to meat, fruits, and vegetables throughout the year.

Future studies

- As the magnitude of child dietary diversity varies in the fasting and non-fasting periods, future nutrition studies including EDHS should have to specify the time of data collection with regard to fasting seasonal character and better report separately for the two periods.

REFERENCE

1. Dewey K. Guiding principles for complementary feeding of the breastfed child. 2002.
2. Organization WH. Indicators for assessing infant and young child feeding practices: part 2: measurement. 2010.
3. Ruel MT. Operationalizing dietary diversity: a review of measurement issues and research priorities. The Journal of nutrition. 2003;133(11):3911S-26S.
4. Kennedy GL, Pedro MR, Seghieri C, Nantel G, Brouwer I. Dietary diversity score is a useful indicator of micronutrient intake in non-breast-feeding Filipino children.The Journal of nutrition. 2007;137(2):4727.
5. Lartey A. Maternal and child nutrition in Sub-Saharan Africa: challenges and interventions. Proceedings of the Nutrition Society. 2008;67(1):105-8.
6. Ijarotimi OS. Determinants of childhood malnutrition and consequences in developing countries. Current Nutrition Reports. 2013;2(3):129-33.
7. Briones Alonso E, editor The impact of culture, religion and traditional knowledge on food and nutrition security in developing countries. FoodSecure Working Paper Series; 2015.
8. Commission FDRoEPC. Summary and Statistical report of the 2007 population and housing census. Addis Ababa, Ethiopia. 2008.
9. Meyer-Rochow VB. Food taboos: their origins and purposes. Journal of Ethnobiology and Ethnomedicine. 2009;5(1):18.
10. EOTC. The order of fasts in Ethiopian Orthodox Tewahdo Church. Addis Ababa: EOTC,Ras tafari Tv; 2010.
11. Patriarch of the Ethiopian Orthodox Tewahedo Church Endorses Nutrition Sermon Guide Encouraging Better Nutrition for Mothers and Children. [press release]. Addis Ababa: Ethiopian Orthodox Church, January 12 2016.
12. Thrive. A. IYCF Practices, Beliefs, and Influences in Tigray Region, Ethiopia. 2010.
13. Kumera G, Tsedal E, Ayana M. Dietary diversity and associated factors among children of Orthodox Christian mothers/caregivers during the fasting season in Dejen District, North West Ethiopia. Nutrition & Metabolism. 2018;15(1):16.

14. Black R, Alderman H, Bhutta Z, Gillespie S, Haddad L, Horton S. Executive summary of The Lancet maternal and child nutrition series. Maternal and Child Nutrition Study Group (eds), Maternal and Child Nutrition. 2013:1-12.

15. Unicef. Levels and trends in child malnutrition. eSocialSciences; 2018.

16. Central Statistical Agency (CSA) [Ethiopia] and ICF. 2016. Ethiopia Demographic and Health Survey 2016. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF

17. Abeway S, Gebremichael B, Murugan R, Assefa M, Adinew YM. Stunting and its determinants among children aged 6–59 months in northern Ethiopia: a cross-sectional study. Journal of nutrition and metabolism. 2018;2018.

18. Wondimagegn ZT. Magnitude and determinants of stunting among children in Africa: a systematic review. Current Research in Nutrition and Food Science Journal. 2014;2(2):88-93.

19. Danaei G, Andrews KG, Sudfeld CR, Fink G, McCoy DC, Peet E, et al. Risk factors for childhood stunting in 137 developing countries: a comparative risk assessment analysis at global, regional, and country levels. PLoS medicine. 2016;13(11):e1002164.

20. Abdulahi A, Shab-Bidar S, Rezaei S, Djafarian K. Nutritional status of under five children in Ethiopia: a systematic review and meta-analysis. Ethiopian journal of health sciences. 2017;27(2):175-88.

21. Motbainor A, Worku A, Kumie A. Stunting is associated with food diversity while wasting with food insecurity among underfive children in East and West Gojjam Zones of Amhara Region, Ethiopia. PloS one. 2015;10(8):e0133542.

22. Jones AD, Ickes SB, Smith LE, Mbuya MN, Chasekwa B, Heidkamp RA, et al. W orld H ealth Organization infant and young child feeding indicators and their associations with child anthropometry: a synthesis of recent findings. Maternal & child nutrition. 2014;10(1):1-17.

23. Frempong RB, Annim SK. Dietary diversity and child malnutrition in Ghana. Heliyon. 2017;3(5):e00298.

24. Martins VJ, Toledo Florêncio TM, Grillo LP, Do Carmo PF, Martins PA, Clemente APG, et al. Long-lasting effects of undernutrition. International journal of environmental research and public health. 2011;8(6):1817-46.

25. Abeshu MA, Lelisa A, Geleta B. Complementary feeding: review of recommendations, feeding practices, and adequacy of homemade complementary food preparations in developing countries–lessons from Ethiopia. Frontiers in nutrition. 2016;3:41.

26. Gewa CA, Leslie TF. Distribution and determinants of young child feeding practices in the East African region: demographic health survey data analysis from 2008-2011. Journal of Health, Population and Nutrition. 2015;34(1):6.

27. Senarath U, Agho KE, Akram DeS, Godakandage SS, Hazir T, Jayawickrama H, et al. Comparisons of complementary feeding indicators and associated factors in children aged 6–23 months across five South Asian countries. Maternal & child nutrition. 2012;8:89-106.

28. Beyene M, Worku AG, Wassie MM. Dietary diversity, meal frequency and associated factors among infant and young children in Northwest Ethiopia: a cross-sectional study. BMC public health. 2015;15(1):1007.

29. Gatahun A, Abyu M. Dietary diversity feeding practice and determinants among children aged 6-23 months in Kemba Woreda, southern Ethiopia implication for public health intervention. Nutrition & Food Sciences. 2015.

30. Gebremedhin S, Baye K, Bekele T, Tharaney M, Asrat Y, Abebe Y, et al. Predictors of dietary diversity in children ages 6 to 23 mo in largely food-insecure area of South Wollo, Ethiopia. Nutrition. 2017;33:163-8.

31. Iqbal S, Zakar R, Zakar MZ, Fischer F. Factors associated with infants' and young children's (6–23 months) dietary diversity in Pakistan: evidence from the demographic and health survey 2012–13. Nutrition journal. 2017;16(1):78.

32. Solomon D, Aderaw Z, Tegegne TK. Minimum dietary diversity and associated factors among children aged 6–23 months in Addis Ababa, Ethiopia. International journal for equity in health. 2017;16(1):181.

33. Hirvonen K, Taffesse AS, Hassen IW. Seasonality and household diets in Ethiopia. Public health nutrition. 2016;19(10):1723-30.

34. Akombi BJ, Agho KE, Merom D, Renzaho AM, Hall JJ. Child malnutrition in sub-Saharan Africa: A meta-analysis of demographic and health surveys (2006-2016). PloS one. 2017;12(5):e0177338.

35. Sié A, Tapsoba C, Dah C, Ouermi L, Zabre P, Bärnighausen T, et al. Dietary diversity and nutritional status among children in rural Burkina Faso. International health. 2018;10(3):157-62.

36. Ahmad I, Khalique N, Khalil S. Dietary diversity and stunting among infants and young children: A cross-sectional study in Aligarh. Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine. 2018;43(1):34.

37. Dwyer JT, Butte NF, Deming DM, Siega-Riz AM, Reidy KC. Feeding Infants and Toddlers Study 2008: progress, continuing concerns, and implications. Journal of the American Dietetic Association. 2010;110(12):6.

38. Bristol UDI. 2018 Global Nutrition Report: Shining a light to spur action on nutrition. 2018.

39. Haddad L, Achadi E, Bendech MA, Ahuja A, Bhatia K, Bhutta Z, et al. The Global Nutrition Report 2014: Actions and Accountability to Accelerate the World's Progress on Nutrition–. The Journal of nutrition. 2015;145(4):663-71.

40. WHO. nutrition in WHO African region. Brazaville: WHO; 2017.

41. Temesgen H, Negesse A, Woyraw W, Mekonnen N. Dietary diversity feeding practice and its associated factors among children age 6–23 months in Ethiopia from 2011 up to 2018: a systematic review and meta-analysis. Italian journal of pediatrics. 2018;44(1):109.

42. Temesgen H, Yeneabat T, Teshome M. Dietary diversity and associated factors among children aged 6–23 months in Sinan Woreda, Northwest Ethiopia: a cross-sectional study. BMC Nutrition. 2018;4(1):5.

43. Belew AK, Ali BM, Abebe Z, Dachew BA. Dietary diversity and meal frequency among infant and young children: a community based study. Italian journal of pediatrics. 2017;43(1):73.

44. Hirvonen K. Rural–urban differences in children's dietary diversity in Ethiopia: A Poisson decomposition analysis. Economics Letters. 2016;147:12-5.

45. Eshete T, Kumera G, Bazezew Y, Mihretie A, Marie T. Determinants of inadequate minimum dietary diversity among children aged 6–23 months in Ethiopia: secondary data analysis from Ethiopian Demographic and Health Survey 2016. Agriculture & Food Security. 2018;7(1):66.

46. Aemro M, Mesele M, Birhanu Z, Atenafu A. Dietary diversity and meal frequency practices among infant and young children aged 6–23 months in Ethiopia: a secondary analysis of Ethiopian demographic and health survey 2011. Journal of nutrition and metabolism. 2013;2013.

47. Workicho A, Belachew T, Feyissa GT, Wondafrash B, Lachat C, Verstraeten R, et al. Household dietary diversity and Animal Source Food consumption in Ethiopia: evidence from the 2011 Welfare Monitoring Survey. BMC public health. 2016;16(1):1192.

48. Senarath U, Godakandage SS, Jayawickrama H, Siriwardena I, Dibley MJ. Determinants of inappropriate complementary feeding practices in young children in Sri Lanka: secondary data analysis of demographic and health survey 2006–2007. Maternal & child nutrition. 2012;8:60-77.

49. Reinbott A, Jordan I. Determinants of child malnutrition and infant and young child feeding approaches in Cambodia. Hidden Hunger. 115: Karger Publishers; 2016. p. 61-7.

50. Rakotonirainy NH, Razafindratovo V, Remonja CR, Rasoloarijaona R, Piola P, Raharintsoa C, et al. Dietary diversity of 6-to 59-month-old children in rural areas of Moramanga and Morondava districts, Madagascar. PloS one. 2018;13(7):e0200235.

51. Kabir I, Khanam M, Agho KE, Mihrshahi S, Dibley MJ, Roy SK. Determinants of inappropriate complementary feeding practices in infant and young children in Bangladesh: secondary data analysis of Demographic Health Survey 2007. Maternal & child nutrition. 2012;8:11-27.

52. Agrawal S, Kim R, Gausman J, Sharma S, Sankar R, Joe W, et al. Socio-economic patterning of food consumption and dietary diversity among Indian children: evidence from NFHS-4. European journal of clinical nutrition. 2019:1.

53. Khanal V, Sauer K, Zhao Y. Determinants of complementary feeding practices among Nepalese children aged 6–23 months: findings from demographic and health survey 2011. BMC pediatrics. 2013;13(1):131.

54. Sagaro GG, Alemayehu M. Dietary diversity and associated factors among infants and young children in Wolaita Zone, Southern Ethiopia. Science Journal of Clinical Medicine. 2017;6(4):53.

55. Dangura D, Gebremedhin S. Dietary diversity and associated factors among children 6-23 months of age in Gorche district, Southern Ethiopia: Cross-sectional study. BMC pediatrics. 2017;17(1):6.

56. Agize A, Jara D, Dejenu G. Level of Knowledge and Practice of Mothers on Minimum Dietary Diversity Practices and Associated Factors for 6–23-Month-Old Children in Adea Woreda, Oromia, Ethiopia. BioMed Research International. 2017;2017.

57. Guindeuil T, editor What do Christians (Not) Eat: Food Taboos and the Ethiopian Christian Communities (13th-18th c.). Annales d'Éthiopie; 2014: Editions de la Table Ronde.
58. Karle CS. Fasting among Orthodox Christians in Ethiopia: The symbolic and nutritional significance of the fast for reproductive women: Bachelor's Thesis, Department of Public Health, University of Copenhagen, Copenhagen, Denmark; 2017.
59. Seleshe S, Jo C, Lee M. Meat consumption culture in Ethiopia. Korean journal for food science of animal resources. 2014;34(1):7.
60. Mekete B. Determinants of livestock and feed water productivity in the mixed crop–livestock production system of debre berhan milkshed, central highlands of ethiopia 2018.
61. Beneberu T, Lemma W, Shenkute G, Aschalew T, Solomon G, Getachew L, et al. Sheep and feed value chain analysis in North Shewa, central highlands of Ethiopia. 2012.

ANNEXES

Annex 1: participant Information sheet and Consent form (Amharic version)

Addis Ababa University, School of public health

Subject Information Sheet

Hello,

My name is ———————————————— I am here on behalf of Addisalem Zebene, a student at Addis Ababa University School of Public Health Nutrition department. She is conducting research for her MPH thesis with a title of "Does mothers/caregivers'fasting status affect the dietary diversity of children 6-23 months? A before-after study in Debrebirhan, Ethiopia". She has received permission from Addis Ababa University School of Public Health to conduct this research.

You are selected by simple random sampling technique. Your participation in this study will only be based on your willingness. You have the right to choose not to take part in this study. If you choose to take part, you have the right to stop at any time. If you are willing to participate, refuse, or decide to withdraw later, you will not be subjected to any ill-treatment.

Both you and your infant or child information that is going to be accessed for this study will remain confidential. Data will be documented only using codes for each participant and no names will be recorded at the time of data processing. If you agree to participate in the study, you will be asked questions regarding your socio-demographic status, fasting status, dietary intake of your child, community and household conditions, and health services factors.

For further clarifications, you can contact the primary investigator of the research- Addisalem Zebene

Phone number- + 2519 10 80 92 09

Informed Consent

Based on the understanding of the above information, are you willing to participate in this study?

A) Yes

B) No If yes, I will continue and If no I will skip to next participant after writing the reasons of refusal ——————————— ——————————————————————————————

Respondent Signature _____Date_____

Data collector Name_____ Signature_____

Questionnaires ID number_____

Date of data collected_____

Result of data collected A) Completed B) Not completed C) Partially completed D) Refused

Checked by Supervisor: Name _____Signature_____

For further explanation, use the Principal Investigator' Address; Name Addisalem Zebene Email: zebene.addisalem@gmail.com Cell phone: +251 910 80 92 09

Home: +251116633155

Annex 2: First visit data collecting checklist (English Version)

First visit data collecting check list on "Does mothers/caregivers'fasting status affect the dietary diversity of children 6-23 months? A before-after study in Debrebirhan, Ethiopia" (English Version)

Name of participant----------Study ID: -------Mob|___|___|__|___|__|___|__|___|___|

Address Wereda: ----------Kebeles: ----------House number: ----------

Date of first visit by the data collector |___|___|2019G.C

Time started: __ __: __ __ AM/ PM Time Ended: __ __: __ __ AM / PM

SECTION 1: QUESTIONS REGARDING THE SOCIO-DEMOGRAPHIC CHARACTERISTICS, FASTING EXPERIANCE OF MOTHER/CAREGIVER AND CHILD BACKGROUND

1.1Questions regarding the socio-demographic characteristics of parents and fasting status of the mother/care giver

serial no	Questions	Options of answer	Skip
101	Maternal/care givers age	age in years----------	
102	Mother/caregiver educational status	1. Illiterate (can't read and write) ☐ 2. Can read and write but no formal school ☐ 3. Primary school (grade 1-8) ☐ 4. Secondary school (grade 9-12) ☐ 5. Some college or technical school ☐ 6. College graduate or above ☐ 88. I don't know ☐	
103	Father's education	1.Illiterate (can't read and write) ☐ 2. Can read and write ☐ 3. Primary school (grade 1-8) ☐ 4. Secondary school (grade 9-12) ☐ 5. Some college or technical school ☐ 6. College graduate or above ☐	

		88. I don't know ☐	
104	Mother/caregiver's occupation	1. Housewife/farmer ☐ 2. Government employed ☐ 3. Merchant ☐ 4. Private employed ☐ 5. NGO ☐ 77.Other(specify)----------	
105	Father's occupation	1. Farmer ☐ 2. Government employed ☐ 3. Merchant ☐ 4. Private employed ☐ 5.NGO ☐ 77.Other(specify)----------	
106	Mother's marital status	1. Married ☐ 2. single ☐ 3. divorced ☐ 4.widowed ☐	
107	Family size	----------in number	
108	In which of the fasting periods do you participate? **(multiple response is possible)**	1. Salivation fasting (Wednesday Friday) ☐ 2. Eves of Christmas and Epiphany (Gehad tsom) ☐ 3. The fast of prophets (Gena) ☐ 4. Nenewie tsom ☐ 5. The great fast (Abiy tsom) ☐ 6. Fast of apostles (Sene tsom) ☐ 7. Assumption of the Virgin Merry(Filseta) ☐ 8.All ☐ 9. None ☐ 77. Other(specify)----------	

109	For how many years have, you participated in the above chosen fasting.	----------(in years)	
110	Was yesterday a celebration day (baptism, marriage, and funeral) or market day?	1. Yes ☐ 0. No ☐	
1.2 Questions regarding the child background			
111	Number of < 5 years children in the house hold	----------in number	
112	birth order	----------in rank (write as 1st, 2nd, 3rd…..)	
113	child age in completed months	----------month(in completed month)	
114	Child sex	1. Male ☐ 2. Female ☐	
115	Which person was in charge of the child's meals yesterday?	1. The mother ☐ 2. The grandmother ☐ 3. Another adult family member /nanny ☐ 4. A family member under 15 years ☐ 5. People outside the family (neighbors, friends……. ☐	Ask this person to answer the questions about the child's diet
116	Did the Child breast-feed in the past 24 hours during the day or the night time?	1. Yes ☐ 0. No ☐	

SECTION TWO: QUESTIONS REGARDINGSOCIO-ECONOMIC INFORMATION OF THE HOUSEHOLD			
201	How is food obtained in family? (Probe for all responses)	1. Farming (crops, animals) ☐ 2. Buying from market ☐ 3. Food aid/donation ☐ 77. Other (specify)_____	
202	Does the household own any agricultural land?	1. Yes ☐ 0. No ☐	If No, skip to Q207
203	If yes, how much is put for food production/agriculture? Give an approximate average area in hectare	_____ in hectare	
204	Which of the following vegetables do you currently cultivate? (*Multiple answers possible*)	1. Tomatoes ☐ 2. Potatoes ☐ 3. Onions ☐ 4. Cabbages ☐ 5. Carrots ☐ 77. Other (specify)_____	
205	Which of the staple foods and other crops do you currently cultivate? (*Multiple answers possible*)	1. Wheat ☐ 2. Teff ☐ 3. Barley ☐ 4. Rice ☐ 5. Pea ☐ 6. Bean ☐ 7. Maize ☐ 77. Other (specify)_____	
206	Currently, your cultivated land is covered by what?	1. Cash crops (chat, coffee...) ☐ 2. Cereals ☐ 77. Other (specify)----------	
207	Does this household own any livestock, herds, other	1. Yes ☐	If No, skip

	farm animals, or poultry?	0. No ☐	to Q209
208	If yes, how many of the following animals does this household own?	1. Cows, Bulls, Oxen _____ in number 2. Horses, Donkeys, Mules__ in number 3. Goats _____ in number 4. Sheep _____ in number 5. Chicken _____ in number 77. Other (specify)_____	
210	What is the main current source of drinking water for members of your household?	1. Pipe water piped into dwelling ☐ 2. Pipe water piped to yard ☐ 3. Public Tap/Stand Pipe ☐ 4. Borehole ☐ 5. Protected well ☐ 6. Unprotected well ☐ 7. Protected Spring ☐ 8. Unprotected Spring ☐ 9. Rain water ☐ 10. Tanker truck ☐ 11. Cart with small tank ☐ 12. Surface water ☐ 13. Bottled water ☐ 77. Other (specify)---------- _____	
211	What is the main source of water used by your household for other purposes such as cooking and hand washing?	1. Pipe water piped into dwelling ☐ 2. Pipe water piped to yard ☐ 3. Public Tap/Stand Pipe ☐ 4. Borehole ☐ 5. Protected well ☐ 6. Unprotected well ☐ 7. Protected Spring ☐ 8. Unprotected Spring ☐ 9. Rain water ☐ 10. Tanker truck ☐ 11. Cart with small tank ☐ 12. Surface water ☐ 77. Other (specify)_----------	

212	Which of the following does your household have? (*Ask one by one*)	a. Electricity 1.Yes ☐ 0.No ☐ b. Radio 1.Yes ☐ 0.No ☐ c. Television 1.Yes ☐ 0. No ☐ d. Refrigerator1. Yes ☐ 0. No ☐ e. electric mitad 1.Yes ☐ 0.No ☐	
213	Does any member of this household own:	a.Mobile 1.Yes ☐ 0.No ☐ b. Motorcycle 1. Yes ☐ 0.No ☐ c.animal-drawn cart 1.Yes ☐ 0.No ☐ d.Bajaj 1.Yes ☐ 0. No ☐ f. Car/truck 1.Yes ☐ 0.No ☐	
214	What kind of toilet facility do members of your household usually use? (Observe)	1. Flush to piped sewer system ☐ 2. Flush to septic tank ☐ 3. Flush to pit latrine ☐ 4. Flush to somewhere else ☐ 5. Flush,don't know where ☐ 6. Ventilated improved pit latrine (VIP). ☐ 7. Pit latrine with slab ☐ 8. Pit latrine without slab ☐ 9. Composting toilet ☐ 10. Bucket toilet ☐ 11. Hanging toilet ☐ 12. No facility/bush/field ☐ 77. Other (specify)_____	
215	What are the main materials of the floor of the house? (Observe)	1. Soil/Sand ☐ 2. Dung ☐ 3. Wood planks ☐ 4. Palm/Bamboo ☐ 5. Ceramic Tiles ☐ 6. Cement ☐ 77. Other (specify)_--------	

216	What are the main materials of the roof of the house? (*observe)*	1. Thatch/straw ☐ 2. Leaf/Earth/ Mud/Cow dung ☐ 3. Wood planks, cardboard ☐ 4. Finished roof (iron, tin, finished wood, cement, ceramic) ☐ 77. Other (specify)_____	
217	What are the main materials of the Walls of the house? (*observe)*	1. No walls ☐ 2. Bamboo/cane ☐ 3. Bamboo with mud ☐ 4. stone with mud ☐ 5. plywood, cardboard ☐ 6. Finished walls with cement, brick, stone with cement, wood planks/shingles ☐ 77. Others (specify)_____	
218	How many rooms in this household are used for sleeping?	_____ in number	
219	What type of fuel do you mainly use for cooking? (*Multiple answers possible)*	1. Electricity ☐ 2. Wood ☐ 3. Kerosene ☐ 4. Animal dung ☐ 5. Charcoal ☐ 77. Other (specify)---------- _____	

SECTION 3. QUESTIONS REGARDING MATERNAL HEALTH AND NUTRITION EDUCATION

serial no	Questions	Options of answer	Skip
301	Did you have ANC visit during your pregnancy of this child(index child)	1. Yes ☐ 1. No ☐	If the answer is NO skip to 303
302	If yes to 301, how many number of ANC visit you had? (index child)	----------in number	
303	Place of delivery for this child? (index child)	1. government Hospital/Health center ☐ 2. Health post ☐ 3. Private hospital/clinic/NGO ☐ 4. Home ☐ 77.other(specify)----------	
304	PNC visit(for index child)	1. Yes ☐ 0. No ☐	
305	Have you ever heard/ received an education/counseling about appropriate infant and Young child feeding by any means?	a. about exclusive breast feeding 1. Yes ☐ 0. No ☐ b.about continuation of breast feeding 1. Yes ☐ 0. No ☐ c. about initiation of complementary feeding 1. Yes ☐ 0. No ☐ d. about types of food groups the child should get /dietary diversity/ 1.Yes0. No ☐ ☐ e. about the consistency of the food 1. Yes ☐ 0. No ☐ f. about the frequency of feeding 1. Yes ☐ 0.No ☐	If the response to all this is NO, skip to section 4

306	If the response is YES to one of the above questions(305), ask where did she get the education/advice(multiple response is possible)	1.On health facility during pregnancy ☐ 2.On health facility on day of delivery ☐ 3. On health facility after delivery ☐ 4.At home by HEW or women development army ☐ 5. From media/TV, radio, magazine ☐ 77. Other----------	

SECTION 4. QUESTIONS REGARDING KNOWLEDGE OF MOTHERS/CAREGIVERS ON **DIETARY DIVERSITY AND CHILD FEEDING**

Instruction:-Don't read the alternative answers for the respondent

SerialNo	Questions	Options of answer	Skip
401	At what age, complementary feeding should start?	----------	
402	From which food groups a 6-23months child should obtain. (Read the alternative food groups for the respondent)	1. Grain,roots&tuber ☐ 2. Legumes & nut ☐ 3. Flesh food including poultry ☐ 4. Dairy product ☐ 5. Eggs ☐ 6. fruits and vegetables ☐ 77.other(specify)----------	
403	Can a 6–8 months child feed meat, organ meat, like liver, kidney?	1.Yes ☐ 0. No ☐	
404	Can a 9–11 month child feed meat, organ meat, like liver, kidney?	1.Yes ☐ 0.No ☐	
405	Can a 12–23 month child feed meat, organ meat, like liver, kidney?	1.Yes ☐ 0. No ☐	
406	Can a 6–8-month child feed egg?	1.Yes ☐ 0. No ☐	
407	Can a 9-11 month child feed egg?	1. Yes ☐ 0. No ☐	
408	Can a 12-23 month child feed egg?	1.Yes ☐ 0. No ☐	

SECTION 5 QUESTIONS REGARDING THE TYPES OF FOOD GROUPS FED TO THE CHILDREN IN THE PAST 24 HOUR/DATA ON DD.

Dietary Diversity Questionnaire

Instruction 1: Please describe the foods (meal and snacks) that the child ate or drink yesterday during the day and night time, weather at home or outside the home. Start with the first food or drink of the morning.

Write down all the food and drinks mentioned. When composite dishes are mentioned, ask for the list of ingredients and condiments.

A food item is an ingredient if the quantity used in the recipe is more than 1 table spoon.

A food item is condiment if the quantity used in the recipe equal to or less than 1 table spoon.

When the respondents have finished, probe for meals and snacks not mentioned.

Breakfast	Snack	Lunch	Snack	Dinner	Snack

If any condiments: ----------

Remind. Did the child ate outside yesterday?

When the respondents recall is complete, fill in the food groups based on the information recorded above. For any food groups not mentioned ask the respondent if a food item from the group was consumed.

Instruction 2: Underline the corresponding foods in the list under the appropriate food group and write 1 in the column next to the food group if at least one food in this group has been

underlined. If there is a condiment added to the mixed food, write it on the last column of the table. A food item is **condiment** if the quantity used in the recipe is less than one tablespoon

serial no	Food group/ Dietary diversity	Response (1) Yes (0) NO	Condiment (Salt, chili, magi... (1)YES (0) NO
501	**Grain, tuber, and roots** Teff, maize, oats, barley, Rice, wheat, sorghum, millet, , finger millet etc. or foods made from them like Injera, bread kita, qollo, Nifro,Pizza,Ambasha,Anebabero,Atmit,Besso,Bonbolino,sambusa,Sandwitch,cake,Chechebsa,dabokolo,Fetira,Firfir,Kinche,suffitfit, biscuit, porridge, dry roasted or boiled grain, pasta/macaroni, wat made from powdered chickpeas or bean. Potato, beets, yams, cassava or any other food made from roots or tubers like bulla, kocho, etc.		
502	**Legumes and nut** Beans, peas, broad beans, chickpeas, lentils, kidney bean, soybean, or nuts like Almond or foods made from them; like stew, peanut butter, testy soya, dry roasted or boiled pulses, etc.		
503	**Dairy products** Any milk including cow milk, powdered milk, cheese, yogurt, butter, sour cream, ice cream, custard(milk based), whey or other milk products		
504	**Flesh food** Any wat or fried prepared from beef, lamb, goat, sheep, chicken, liver /any organ meat or fish (fresh, dried & canned like roasted, stew, boiled mutton/goat meat, lebeleb, etc.)		
505	**Eggs** Any Eggs (fried, boiled, omelet in salad, in baked goods, etc.)		

506	**Vitamin A rich fruits and vegetables** Any vitamin A rich fruit like mango, papaya, peaches, or 100% fruit juice made from these. Any vitamin A rich vegetables and tubers like carrot, kale, pumpkin, spinach, sweet potato, red sweet pepper, chili greens, and broccolietc.		
507	**Other fruits and vegetables** Like avocado, banana, apple, blackberry, blueberry, lemon, Watermelon, orange, dates, pineapple, strawberry, grapes Cauliflower,beets,tomato,greenpepper,onion,garlic,mushroom,cucumber ,cabbage,lettuce(light-green leaves), etc.		
508	Other foods. Please write down other foods in this box that respondents mentioned but are not listed above	----------	

Instruction 3: If their child did not consume animal source food in the past 24 hours, ask his/her mother/care taker the reason not to fed diet of animal origin to her child and tick in the boxes. DON'T READ THE ALTERNATIVE ANSWERS

509	What is the reason not to feed the diet of animal origin for your child yesterday?	1. Due to Insufficient income ☐ 2. Due to non-availability in that area or market ☐ 3. Due to thinking that the child is too young to eat animal origin foods ☐ 77. Other(specify)---------- ☐	

Annex 3: Second visit data collecting checklist (English version)

Second visit data collecting check list on "Does mothers/caregivers'fasting status affect the dietary diversity of children 6-23 months? A before-after study in Debrebirhan, Ethiopia" (English version)

Study ID: |___|___ |___|___|___|___|___|

Name: _____

Delivery date |___|___|2019E.C

Date of first visit by the data collector |___|___|2019E.C

SECTION 1. QUESTIONS REGARDING FASTING STATUS OF THE MOTHER OR CARE GIVER AND CHILD BREAST FEEDING STATUS IN THE PAST 24 HOUR.

Serial no	Questions	Response	Skip
101	Did you fast this lent /Abiy tsom in the past 24 hour	1. YES ☐ 0. NO ☐	If the response is No, skip to question number 103
102	If the answer is YES, tick in one of the boxes	1. Not consuming animal source food except fish 1.yes ☐ 0. No ☐ 2. Not consuming animal source food including fish 1. Yes ☐ 0. No ☐ 3. Not consuming animal source food including fish and stay up to 9 am with no consumption of any food including water. 1. Yes ☐ 0. No ☐ 4. Not consuming animal source food including fish and stay up to 12 pm with no consumption of any food including water. 1. Yes ☐ 0. No ☐ 5. Not consuming animal source food	

☐ ☐

		including fish and stay up to 3 pm with no consumption of any food including water. 1. Yes 0. No 6. Not consuming animal source food including fish and stay up to 6 pm with no consumption of any food including water. 1. Yes ☐ 0. No ☐ 77. other (specify) ----------	
103	Which person was in charge of the child's meals yesterday?	1. The mother ☐ 2. The grandmother ☐ 3. Another adult family member/nanny ☐ 4. A family member under 15 years ☐ 5. People outside the family (neighbors, friends……. ☐	Ask this person to answer the questions about the child's diet
104	Did the Child breast-feed in the past 24 hours during the day or the nighttime?	1. Yes ☐ 0. No ☐	

Section 2 Questions regarding the types of food groups fed to the children in the past 24 hours/data on DD.

DIETARY DIVERSITY QUESTIONNAIRE

Instruction 1. Please describe the foods (meal and snacks) that the child ate or drink yesterday during the day and night time, weather at home or outside the home. Start with the first food or drink of the morning.

Write down all the food and drinks mentioned. When composite dishes are mentioned, ask for the list of ingredients and condiments.

A food item is an ingredient if the quantity used in the recipe is more than 1 tablespoon.

A food item is condiment if the quantity used in the recipe is equal to or less than 1 tablespoon.

When the respondents have finished, probe for meals and snacks not mentioned.

Breakfast	Snack	Lunch	Snack	Dinner	Snack

If any condiments: ----------

Remind. Did the child ate outside yesterday?

When the respondents recall is complete, fill in the food groups based on the information recorded above. For any food groups not mentioned ask the respondent if a food item from the group was consumed.

Instruction 2: Underline the corresponding foods in the list under the appropriate food group and write 1 in the column next to the food group if at least one food in this group has been underlined. If there is a condiment adde3d to the mixed food write it on the last column of the table. A food item is **condiment** if the quantity used in the recipe is less than 1 table spoon DON'T READ THE ALTERNATIVE ANSWERS

serial no	Food group/ Dietary diversity	Response (1) Yes (0) NO	Condiment (Salt, chili, magi... (1) YES (0) NO
201	**Grain, tuber, and roots** Teff, maize, oats, barley, Rice, wheat, sorghum, millet, , finger millet etc. or foods made from them like Injera, bread kita, qollo, Nifro, Pizza, Ambasha, Anebabero, Atmit, Besso, Bonbolino, sambusa, Sandwitch, cake, Chechebsa, dabokolo, Fetira, Firfir, Kinche, suffitfit, biscuit, porridge, dry roasted or boiled grain, pasta/macaroni, wat made from powdered chickpeas or bean. Potato, beets, yams, cassava or any other food made from roots or tubers like bulla, kocho, etc.		
202	**Legumes and nut** Beans, peas, broad beans, chickpeas, lentils, kidney bean, soybean, or nuts like Almond or foods made from them; like stew, peanut butter, testy soya, dry roasted or boiled pulses, etc.		
203	**Dairy products** Any milk including cow milk, powdered milk, cheese, yogurt, butter, sour cream, ice cream, custard(milk based), whey or other milk products		
204	**Flesh food** Any wat or fried prepared from beef, lamb, goat, sheep, chicken , liver /any organ meat or fish (fresh, dried & canned like roasted, stew, boiled mutton/goat meat, lebeleb, etc.)		

205	**Eggs** Any Eggs (fried, boiled, omelet in salad, in baked goods, etc.)		
206	**Vitamin A rich fruits and vegetables** Any vitamin A rich fruitlike, mango, papaya, peaches, or 100% fruit juice made from these. Any vitamin A rich vegetables and tubers like carrot, kale, pumpkin, spinach, sweet potato, red sweet pepper, chili greens, broccoli, etc.		
207	**Other fruits and vegetables** Like avocado, banana, apple, blackberry, blueberry, lemon, Watermelon, orange, dates, pineapple, strawberry, grapes… Cauliflower,beets,tomato,greenpepper,onion,garlic,mushroom,cucumber ,cabbage,lettuce(light-green leaves), etc.		
208	Other foods. Please write down other foods in this box that respondents mentioned but are not listed above	----------	

Instruction3. If their child did not consume animal source food in the past 24 hours, ask his/her mother/care taker the reason not to fed diet of animal origin to her child and tick in the boxes. DON'T READ THE ALTERNATIVE ANSWERS

208	What is the reason not to feed the diet of animal origin for her child?	1. Due to Insufficient income ☐ 2. Due to non-availability in that area/market ☐ 3. Due to thinking that the child is too young to eat animal origin foods ☐ 4. Due to the fasting status of the mother/caregiver /fear of contamination and smell while cooking ☐ 77. Other(specify)----------	

Adapted from the 2016 EDHS, WHO indicators for assessing infant and young child feeding practices and different literature with some modification to fit with the context.

Annex 4: participant Information sheet and Consent form (Amharic version)

አዲስ አበባ ዩኒቨርስቲ ጤና ሣይንስ ፋካሊቲ የህብረተሰብ ጤና አጠባበቅ ትምህርት ክፍል

የተጠያቂው/ የመላሾች የመረጃ ቅፅ

ጤና ይስጥልን እንደምን ነዎት

ስሜ——————————————————ይባላል፡፡የመጣሁት በአዱስአበባ ዩኒቨርስቲ የህብረተሰብ ጤና አጠባበቅ የስነምግብ ትምህርት ክፍል ለሚያደርገው የማስተርስ ዲግሪ የማሟያ የጥናትና የምርመር ስራ እየሰራች ያለችውን ተማሪ አዲስዓለም ዘበነን ወክዬ ነው:: የኢትዮጵያ ኦርቶዶክስ ተዋህዶ ቤተክርስቲያን የእናቶች ጾም ከስድስት ወር እስከ ሁለት አመት ያሉ ህጻናት የአመጋገብ ስብጥር ላይ ያለውን አስተዋጽኦ ከጾም በፊትና የጾም ጊዜ በደብረብርሀን ወረዳ በሚገኙ መኖሪያ ቤቶች ጥናት እያደረገች ሲሆን ከአዲስ አበባ ዩኒቨርሲቲ ፍቃድ አግኝታለች፡፡እርስዎ በዚህ ጥናት ላይ እንዲሳተፉ የተመረጡት በተደጋጋሚ በተደረገ የኢጋጣሚ የናሙና አወሳሰድ ስሌት መሰረት ነው፡፡የእርስዎ ተሳትፎ ሙሉ በሙሉ በእርስዎ ሙሉ ፈቃደኝነት ላይ የተመሰረተ ነው፡፡በጥናቱ ላይ ያለመሳተፍ ሙሉ መብት አሎዎት፡፡ ለመሳተፍ ፍቃደኛ ከሆኑ በኋላም በፈለጉት ጊዜ ማቆም ወይም ማቋረጥ ይችላሉ፡፡ በጥናቱ ባለመሳተፍዎ የሚደርስቦት ምንም አይነት ችግር አይኖርም፡፡ በጥናቱ ለመሳተፍ ከተስማሙ እርስዎን ና ልጅዎን በተመለከተ የተወሰኑ ጥያቄዎችን እንጠይቆታለን፡፡ በዚህ መጠይቅ መሰረታዊ መረጃ፤ የጾም ሁኔታ፣ የጤናአገልግሎትን እና የልጆትን የአመጋገብ ሁኔታ ጋር በተገናኘ የመረጃ ምንጭ ሊሆኑ የሚችሉ ጥያቄዎችን እጠይቅዎታለሁ፡፡ በመጠይቁ ጊዜ ጥሩ ስሜት ካልተሰማዎት በማንኛውም ጊዜ አቋርጠው መሄድ ይችላሉ፡፡በመጨረሻም ከእርስዎ የምንሰበስበው መረጃ ከስምዎ ጋር አይያያዝም፡፡ ስምዎት እንደማይጠቀስ፤ ሚስጥራዊ ሆኖ እንደሚቆይ እና ለማንም አካል ተላሌፎ እንደማይሰጥ ልናረጋግጥልዎት እንወዳለን፡፡ የዚህ ጥናት ውጤት ግን ተጠርዞ እና ተዘጋጅቶ ጉዳዩ ወደሚመለከታቸው የጤና ድርጅቶች ወይም ለሌሎች አካላት ሊሰጥ ይችላል፡፡

መረጃው የተሰጠበት ቀን _____

የአጥኚው ፊርማ _____

ለተጨማሪ ማብራሪያ የዋና አጥኚውን አድራሻ ይጠቀሙ

ስም፡አዲስዓለም ዘበነ **ኢሜይል**: zebene.addisalem@gmail.com

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የስምምነትመጠየቂያ/ማረጋገጫቅፅ

ከላይ በሰጠዎት መረጃ መሰረት በጥናቱ ላይ ለመሳተፍ ፍቃደኛ ነዎት?
1. **አዎ**
2. **አይደለሁም**

ፍቃደና ከሆኑ እቀጥላለሁ ፍቃደኛ ካልሆኑ ምክኒያቱን ፅፌ ወደሚቀጥለው ተሳታፉ አልፋለሁ——————————————————————————————

የተሳታፊ ፉርማ——————————**ቀን**——————————

የመረጃ ሰብሳቢ ስም——————————————————**ፉርማ**——————————

የመጠይቁ ቁጥር—————————— **መጠይቁ የተካሄደበት ቀን**——————----------
-

የመጠይቁ ውጤት 1.**ሙሉ በሙሉ የተሟላ** 2. **በከፊል የተሟላ** 3. **ምንም ያልተሟላ**

በተቆጣጣሪዎች·ተረጋግጧል፡ስም——————————**ፉርማ**——————————

ለተጨማሪ ማብራሪያየዋናአጥኚውንአድራሻይጠቀሙ

ስም፡አዲስዓለም ዘበነ

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Annex 5: First visit data collecting checklist (Amharic Version)

Questionnaire (Amharic Version) **የመጀመሪያ ዙር መጠይቅ**

በአዱስ አበባ ዩኒቨርስቲ ህክምና ሣይንስ ፋኩሊቲ የህብረተሰብ ጤና አጠባበቅ ትምህርት ክፍል በኢትዮጵያ ኦርቶዶክስ ተዋህዶ የእናቶች ጾም ከስድስት ወር እስከ ሁለት አመትያሉ ህጻናት የአመጋገብ ስብጥር ላይ ያለውን አስተዋጽኦ ከጾም በፊትና የጾም ጊዜ የሚሰራ የጥናታዊ ፅሁፍ መረጃ መሰብሰቢያ መጠይቅ

የግለሰቡ/ቧ ስም----------መለያኮድ: ----------

አድራሻ: ወረዳ: _____ ቀበሌ: _____ የቤትቁጥር: _____

ቃለ-መጠይቁየተደረገበትቀን: ____ / ____ / 2011ዓ.ም

ቃለ-መጠይቁ የተጀመረበት ሰዓት: ከ__ __: __ __ ቃለ-መጠይቁ ያበቃበትሰዓት: __ __: __

ክፍል 1፡- የእናት አባትማህበራዊ ሁኔታ፣ የእናት/የአሳዳጊ የጾም ሁኔታና የህጻን ሁኔታን የተመለከተ መጠይቅ

1.1 የእናት አባት ማህበራዊ ሁኔታ እና የእናት የጾም ሁኔታን የተመለከተ መጠይቅ

ተ.ቁ	ጥያቄ	መልስ	ወደሚቀጥለውጥ ያቁሂድ
101	ዕድሜሽስንትነው?	----------በዓመት	
102	የወላጅ እናት/የአሳዳጊ የትምህርት ደረጃ	1. ያልተማረች(ማንበብናመፃፍየማትችል) ☐ 2. ያልተማረች ግን ማንበብናመፃፍየምትችል☐ 3. የመጀመሪያ ደረጃ (ከ1ኛ-8ኛክፈሌ) ☐ 4. ሁለተኛ ደረጃ (ከ9ኛ-12ኛክፈሌ) ☐ 5. የተወሰነ የኮሌጅ ወይም የቴክኒክና ሙያ ት/ትያላት ☐ 6. ኮሌጅ ያጠናቀቀች ወይም ከዛ በላይ ☐ 88.አላቅም ☐	
103	የወሊጅአባትየትምህርት ደረጃ?	1. ያልተማረ (ማንበብናመፃፍ የማይችል) ☐ 2. ያልተማረ ማንበብና መፃፍ የሚችል ☐	የህጻኑ አባት በህይወት ከሌለ

		3. የመጀመሪያ ደረጃ (ከ1ኛ-8ኛክፍል) ☐ 4. ሁለተኛደረጃ (ከ9ኛ-12ኛክፍል) ☐ 5. የተወሰነ የኮላጅ ወይም የቴክኒክና ሙያ ት/ት ያለው ☐ 6. ኮሌጅ ያጠናቀቀ ወይም ከዛ በላይ ☐ 88. አላቅም☐	ይህን ጥያቄ ዝለል
104	የእናት የስራ ሁኔታ	1.የቤት እመቤት/ገበሬ ☐ 2.የመንግስት ቅጥረኛ ☐ 3. ነጋዴ ☐ 4. የግል ቅጥረኛ ☐ 5. መንግሰታዊ ያልሆነ ድርጅት ☐ 77.ሌላ(ይገለጽ)----------	
105	የአባት የስራ ሁኔታ	1.ገበሬ ☐ 2.የመንግስት ቅጥረኛ ☐ 3. ነጋዴ ☐ 4. የግል ቅጥረኛ ☐ 5. መንግሰታዊ ያልሆነ ድርጅት☐ 77.ሌላ(ይገለጽ)----------	የህጻኑ አባት በህይወት ከሌለ ይህን ጥያቄ ዝለል
106	የእናት የጋብቻ ሁኔታ	1. ያላገቡ ☐ 2. ያገቡ ☐ 3. የተፋቱ ☐ 4. ትዳርአጋራቸውንበሞትያጡ ☐	
107	የቤተሰብ አባላት ብዛት	---------- በቁጥር	
108	የትኛውን የኦርቶዶክስ ክርስትያን አጿማት ትጾሚያለሽ? (ከአንድ በላይ መልስ ይቻላል)	1.እሮብ አርብጾም ☐ 2.የገሀድ ጾም ☐ 3.የገናጾም (ጾመ ነቢያት)☐ 4.የነነዌ ጾም☐ 5. የፋሲካ/ የዓብይጾም (ጾመሐዋሪያት)☐ 6.የሰኔጾም ☐	

		7. የፍልሰታ ጾም ☐ 8.ሁሉንም እጾማለሁ ☐ 9.ምንም አልጾምም ☐ 77.ሌላ(ይገለጽ)----------	
109	መጾም ከጀመሩ ስንት አመት ሆነዎት?	---------- ዓመት	
110	ትናንትናበቤትዎውስጥልዩ የሆነክብረበዓል (ክርስትና፣ ሰርግ ፣ቀብር....) ነበር?	1. አዎ ☐ 0. የለም ☐	

1.2 የህጻኑን ሁኔታ የተመለከተ ጥያቄ

111	ቤት ውስጥ ያሉ ከ 5 አመት በታች ያሉ ህጻናትብዛት?	---------- በቁጥር	
112	ህጻኑ ስንተኛ ልጅ ነው?	----------በደረጃ(1ኛ፣2ኛ፣3ኛ በማለት አስቀምጥ/ጪ	
113	የልጁ እድሜ በሙሉ ወር?	---------- ወር(በሙሉ ወር አስቀምጥ/ጪ)	
114	የህጻኑ ጾታ	1. ወንድ ☐ 2. ሴት ☐	
115	ትናንት ህጻኑን የመገበው ማን ነበር?	1. የልጁ እናት ☐ 2. የልጁ ሴት አያት ☐ 3. ሌላ የቤተሰብ አባል የሆነ ትልቅ ሰው ☐	ህጻኑን የተመለከተ ጥያቄ ይህን ሰው ጠይቅ

		4. ከ 15 አመት በታች ያለ የቤተሰብ አባል ☐ 5. ከቤተሰብ ውጪ ያለ ሰው (ጎረቤት፣ጓደኛ.....) ☐	
116	ትናንት በቀን ወይም በለሊት ህጻኑ ጡት ጠብቶ ነበር?	1. አዎ ☐ 0. አልጠባም ☐	

ክፈል 2፡-የቤተሰብንየሀብትደረጃየተመለከቱ የጥያቄዎች			
201	የቤት ውስጥ ምግብ እንዴት ነው የምታገኙት?	1. ግብርና (ሰብል, ከብት) ☐ 2. ከገበያ በመግዛት ☐ 3. ከእርዳታ ☐ 77. ሌላ(ይገለጽ)_____	
202	የዳበረ መሬት አሎት?	1. አዎ ☐ 0. የለም ☐	ከሌለ ወደ ጥያቄ 207 ዝለለ
203	መልሶ አዎ ከሆነ ምን ያህል ሄክታር የምግብ ማምረቻ/የእርሻ መሬት አሎት?	_____ ሄክታር	
204	የትኛው አትክልት በአሁን ሰዓት ያዳብራሉ? (*ከ 1 በላይ መልስ ይቻላል*)	1. ቲማቲም ☐ 2. ድንች ☐ 3. ሽንኩርት ☐ 4. ጎመን ☐ 5. ካሮት ☐ 77. ሌላ(ይገለጽ)_____	

205	የትኛውን እህል ና ጥራጥሬ በአሁን ሰዓት ያዳብራሉ? (*ከ 1 በላይ መልስ ይቻላል)*	1. ስንዴ ☐ 2. ጤፍ ☐ 3. ገብስ ☐ 4. ሩዝ ☐ 5. አተር ☐ 6. ባቄላ ☐ 7. በቆሎ ☐ 77. ሌላ(ይገለጽ)_____	
206	በአሁን ሰአት በመሬትዎ ላይ ያለው ምንድነው?	1. ጥሬ ገንዘብ ማግኘ ሰብል (ጫት፣ቡና..) ☐ 2. እህል ☐ 77. ሌላ(ይገለጽ)_____	
207	የቤት ውስጥ ከብት ወይም ዶሮ አሎት?	1. አዎ ☐ 0. የለኝም ☐	መልስዎ የለኝምከሆነወደ 209 ዝለል
208	አዎ ከሆነ ስንት አለዎት?	1. ላም፣በሬ፣ጥጃ_____በቁጥር 2. ፈረስ፣አህያ፣በቅሎ-----በቁጥር 3. ፍየል _____ በቁጥር 4. በግ _____ በቁጥር 5. ዶሮ _____ በቁጥር 77. ሌላ(ይገለጽ)_____	
209	ቤተሰቡ የመጠጥ ውሀ የሚጠቀመው ከየት ነው?	1. በቤት ውስጥ ካለ ቧምቧ ውሀ ☐ 2. በግቢ ውስጥ ካለ ቧምቧ ውሀ 3. ከህዝብ ቧምቧ/ቦኖ ውሀ ☐ 4. ከጥልቅ ጉድጓድ ውሀ/በፖምፕ የሚወጣ ☐ 5. ከተጠበቀ የጉድጓድ ውሃ ☐ 6. ካልተጠበቀ የጉድጓድ ውሃ ☐ 7. ከተጠበቀ የምንጭ ውሀ ☐ 8. ካልተጠበቀ የምንጭ ውሀ ☐ 9. ከዝናብ ውሀ ☐ 10. በቦቴ መኪና ከሚታደል ውሀ ☐ 11. በጋሪ እየተጎተተ ከሚታደል ውሀ ☐ 12. የገጸ ምድር ውሀ (ወንዝ፣ኩሬ. ኧሮረት፣ ግድብ) ☐ 13. ከታሸገ ዉሀ ☐ 77.ሌላ (ይገለጽ) _____	

210	ለቤት ውስጥ አገልግሎት፣ለምግብ መስሪያና ለመታጠቢያ የሚሆን ውሀ ከየት ነው የምትጠቀሙት ከየት ነው?	1. በቤት ውስጥ ካለ ቧምቧ ውሀ ☐ 2. በግቢ ውስጥ ካለ ቧምቧ ውሀ ☐ 3. ከህዝብ ቧምቧ/ቦኖ ውሀ ☐ 4. ከጥልቅ ጉድጓድ ውሀ/በፖምፕ የሚወጣ ☐ 5. ከተጠበቀ የጉድጓድ ውሃ ☐ 6. ካልተጠበቀ የጉድጓድ ውሃ ☐ 7. ከተጠበቀ የምንጭ ውሀ ☐ 8. ካልተጠበቀ የምንጭ ውሀ ☐ 9. ከዝናብ ውሀ ☐ 10. በቦቴ መኪና ከሚታደል ውሀ ☐ 11. በጋሪ እየተጎተተ ከሚታደል ውሀ ☐ 12. የገጸ ምድር ውሀ(ወንዝ፣ኩሬ. ሸርተት፣ ግድብ) ☐ 77. ሌላ(ይገለጽ)_____	
211	ከነዚህ ውስጥ በቤትዎ ውስጥ የትኛው ይገኛል? (አንድ በአንድ ጠይቅ፣ *ለ 1 በላይ መልስ ይቻላል)*	ሀ. መብራት 1.አለ ☐ 0. የለም ☐ ለ. ራዲዮ 1.አለ ☐ 0. የለም ☐ ሐ. ቴሌቪዥን 1.አለ ☐ 0. የለም ☐ መ.ፍሪጅ/ማቀዝቀዣ 1.አለ ☐ 0. የለም ☐ ሰ. የኤሌትሪክ ምጣድ 1.አለ ☐ 0. የለም ☐	
212	ከቤተሰብ አባል ውስጥ እነዚህ ያሉት አለ?	ሀ. ሰዓት 1.አለ ☐ 0. የለም ☐ ለ. ሞባይል 1.አለ ☐ 0. የለም ☐ መ. ሞተርሳይክል 1.አለ ☐ 0. የለም ☐ ሠ. ጋሪ 1.አለ ☐ 0. የለ ☐ ረ. ባጃጅ 1.አለ ☐ 0. የለ ☐ ሰ. መኪና 1.አለ ☐ 0. የለም ☐	

213	የቤተሰቡአባላትበአብዛኛውጊዜየሚጠቀሙበትመፀዳጃቤትምንአይነትነው? (ያለውንበዓይንተመልክቶመመዝገብ)	1. ዉሃ የሚለቅ ከቁሻሻ ማስወገጃ ትቦ ጋር የተያያዘ ☐ 2. ዉሃ የሚለቅ ከቁሻሻ ማጠራቀሚያ ጉድጓድ ጋር የተያያዘ ☐ 3. ዉሃ የሚለቅ ከሸንት ቤት ጉድጓድ ጋር የተያያዘ ☐ 4. ዉሃ የሚለቅ ከሌላ ቦታ ጋር የተያያዘ ☐ 5. ዉሃ የሚለቅ ከማይታወቅ ቦታ ጋር የተያያዘ ☐ 6. አየር ማስተንፈሻ ትቦ ያለው የጉድጓድ ሸንት ቤት ☐ 7. ሊሾ ክዳን ያለው የጉድጓድ ሸንት ቤት ☐ 8. ሊሾ ክዳን የሌለው የጉድጓድ ሸንት ቤት ☐ 9. በማዳበሪያነት ለመጠቀም የተዘጋጀ የጉድጓድ ሸንት ቤት ☐ 10. ጊዜያዊ ማጠራቀሚያ ባልዲ ☐ 11. ከስር ወደ ወንዝ የሚጣል ተንጠልጣይ ሸንት ቤት ☐ 12. የተዘጋጀ መፀዳጃ የለም/ሜዳላይ ☐ 77.ሌላ (ይገለጽ)----------	
214	የቤት ውስጥ መሬት/ወለል ከምንድነው የተሰራው? (ያለውንበዓይንተመልክቶመመዝገብ)	1. አፈር/አሸዋ ☐ 2. እበት ☐ 3. ወፍራም እንጨት ☐ 4. ዘንባባ/ቀርከሀ ☐ 5. ሴራሚክ ☐ 6. ሲሚነቶ ☐ 77. ሌላ(ይገለጽ)_____	
215	የቤት ውስጥ ጣሪያ ከምንድነው የተሰራው? (ያለውንበዓይንተመልክቶመመዝገብ)	1. የሳር/ገለባ ☐ 2. ከቅጠል፣ጭቃ፣የከብትአዛባ ☐ 3. ጣውላ፣ካርቶን ☐ 4. ቆርቆሮ፣ብረት፣ሲሚንቶ፣ሴራሚክ ☐ 77. ሌላ(ይገለጽ)----------	
216	የቤት ውስጥ ግድግዳ ከምንድነው የተሰራው? (ያለውንበዓይንተመልክቶመመዝገብ)	1. ግድግዳ የለውም ☐ 2. የቀርከሀ/ሳጠራግድግዳ ☐ 3. እንጨት ከጭቃ ጋር ☐ 4. ድንጋይ በጭቃ ☐ 5. ኮምፐልሳቶ/ቸፑድ ☐ 6. ሲሚንቶ፣ጡብ፣ድንጋይ በሲሚንቶ፣ በጠጠር ☐ 77. ሌላ(ይገለጽ)----------	

217	በቤቱ ውስጥ ስንት የመኝታ ክፍል አለ?	_____ በቁጥር	
218	ለምግብ ማብሰያ የሚጠቀሙት ምንድን ነው? (*ከ 1 በላይ መልስ ይቻላል*)	1. ኤሌክትሪክ ☐ 2. እንጨት ☐ 3. ቡታጋዝ ☐ 4. የእንስሳት ፍግ ☐ 5. ከሰል ☐ 77. ሌላ(ይገለጽ)_____	

ክፍል 3 ፡-የእናት የጤና አገልግሎት እና የስነ ምግብ ትምህርት የተመለከተ መጠይቅ

ተ.ቁ	ጥያቄ	መልስ	
301	በርግዝና ወቅት ቅድመ ወሊድክትትል ነበረሽ?	1. አዎ ☐ (1) የለኝም ☐	መልሱ የለኝም ከሆነ ወደ ጥ.ቁ 303 ሂድ
302	መልስዎ አዎ ከሆነ በርግዝና ወቅት የነበረ ቅድመ ወሊድክትትል ብዛት ስንት ነው?	----------በቁጥር	
303	የወሊድ ቦታ	1.የመንግስት ሆስፒታል/ጤና ጣቢያ ☐ 2.ጤና ኬላ ☐ 3.የግልሆስፒታል/ኪኒሊክ/መንግስታዊ ያልሆነ ተቐም ☐ 4. ቤት ☐ 77.ሌላ(ይገለጽ)----------	
304	ድህረ ወሊድ ክትትል	1. አለ ☐ 0. የለም ☐	
305	ስለ ህጻኑ አመጋገብ ምክር/ትምህርት አግኝተዋል?(ከማንኛውም ቦታ ሊሆን ይችላል)	ሀ. ጡት ብቻ ስለማጠባት 1.አዎ ☐ 0. አላገኘሁም ☐ ለ. ጡት እስከመቼ መቀጠል እንዳለበት 1.አዎ ☐ 0. አላገኘሁም ☐ ሐ. ተጨማሪ ምግብ መቼ መጀመር እነዳለበት	

		1.አዎ ☐ 0. አላገኘሁም ☐ መ. ከምን ከምን የምግብ አይነት መመገብ እንዳለበት 1.አዎ ☐ 0. አላገኘሁም ☐ ሰ. የምግቡ ቅጥነት እና ውፍረት 1.አዎ ☐ 0. አላገኘሁም ☐ ረ. በቀን ምን ያህል ጊዜ መመገብ እንዳለበት 1.አዎ ☐ 0. አላገኘሁም ☐	
306	መልስዎ አዎ ከሆነ ከየት አገኙ? ከአንድ በላይ ምላሽ ይቻላል	1. በጤና ተቐም በርግዝና ወቅት☐ 2. በጤና ተቐም በወሊድ ቀን☐ 3. በጤና ተቐም ከወሊድበኋላ4. ቤት ለቤት በጤና ኤክስቴንሽን ባለሙያ /ልማት☐ድን 5. ከሚዲያ/ቴሌቪዥን፣ሬዲዮ፣ ጋዜጣ ☐ 77. ሌላ----------	

ክፍል 4፡- ስለ ህጻናትአመጋገብ እና የምግብ ስብጥር እናት ያላትን እውቀት መመዘኛ መጠይቅ

ተ.ቁ	ጥያቄ	መልስ	
401	ለ ልጅዎ ከጡት ሌላ ተጨማሪ ምግብ መጀመር ያለበት መቼ ነው?	----------	
402	ከ6-23 ያለ ልጅ ከነዚህ ውስጥ ቢያንስ የትኞቹን የምግብ አይነቶች ማግኘት አለበት?(**ምርጫዎቹን ለ ተጠያቂው አንብብ**)	1. ከእህል ዘር፣ስራስር ☐ 2. ጥራጥሬና የለውዝ አህሎች ☐ 3. ስጋ ☐ 4. ወተትና የወተት ውጤቶች ☐	

		5. እንቁላል ☐ 6. በቪታሚን ኤ የበለጸጉና ሌሎች አትክልቶችና ፍራፍሬዎች ☐ 77. ሌላ(ይገለጽ)----------	
403	የ 6—8 ወር ልጅ ስጋ እንዲሁም አካል ስጋ ልክ እንደ ጉበት ያሉትን መመገብ ይችላል?	1. አዎ ☐ 0. አይችልም ☐	
404	የ 9—11 ወር ልጅ ስጋ እንዲሁም አካል ስጋ ልክ እንደ ጉበት ያሉትን መመገብ ይችላል?	1. አዎ ☐ 0. አይችልም ☐	
405	የ 11—23 ወር ልጅ ስጋ እንዲሁም አካል ስጋ ልክ እንደ ጉበት ያሉትን መመገብ ይችላል?	1. አዎ ☐ 0. አይችልም ☐	
406	የ 6-8 ወር ልጅ እንቁላል መመገብ ይችላል?	1. አዎ ☐ 0. አይችልም ☐	
407	የ 9-11 ወር ልጅ እንቁላል መመገብ ይችላል?	1. አዎ ☐ 0. አይችልም ☐	
408	የ 12—23 ወር ልጅ እንቁላል መመገብ ይችላል?	1. አዎ ☐ 0. አይችልም ☐	

ክፍል 5፡- ህጻኑ ባለፈው 24 ሰዓት ውስጥ ስለተመገበው የምግብ ዓይነትየተመለከተ መጠይቅ

የህጻኑ የአመጋገብ ስብጥርን የተመለከተ መጠይቅ

መመሪያ 1፡ባለፈው 24 ሰዓት ውስጥ እናት ለ ልጇ በቤት ውስጥም ሆነ ከቤት ውጪ ቀን እና ማታ የመገበችውን ምግብ ና መጠጥ ጠይቅ፡፡ መጀመሪያ ጠዋት ለህጻኑ የመገበችውን በመጠየቅ ጀምር፡፡ መላሿ የምትጠቅሰውን እያንዳንዱን የምግብ እና የመጠጥ አይነት ጻፍ፡፡ ከተጠቀሱት ውስጥ የተቀላቀለ ምግብ ካለ ምግቡ ከምን ንጠረ ነገሮች እና ቅመሞች እንደተሰራ ጠይቅ፡

ንጥረ ነገር፡- የምግብ ዓይነት ሆኖ በምግቡ ውስጥ በያንስ ከ 1 የገበታ ማንኪያ በላይ

የተጠቀሙት ከሆነ

ቅመም፡- **የምግብ ዓይነት ሆኖ በምግቡ ውስጥ ከአንድ የገበታ ማንኪያ እና ከዛ በታች የተጠቀሙት ከሆነ**

- **መላሿ ትያቄውን መልሳ ከጨረሰች በኃላ፣ ያልተጠቀሱ ምግቦችን አረጋግጥ**

ቁርስ	*መክሰስ*	**ምሳ**	*መክሰስ*	*ራት*	*መክሰስ*

የተጨመረ ቅመም ካለ----------

አስታውስ፡ልጅዎት በትናንትነው ቀን ከውጪ የበላው ምግብ አለ?

መላሿ/ሹ ሁሉንም አስታውሳ/ሶ ከጨረሰች/ከጨረሰ በኃላ፣ ከላይ በመዘገብከው/ሽው መሰረት እታች ባለው የምግብ አየነት ላይ ሙላ

መመሪያ 2: ከላይ የመዘገብከውን/ሽውን ምግቦች ከዚህ በታች ባሉት በተጓዳኝ የምግብ ዝርዝሮች ውስጥ በማስተያት ፣ በሰንጠረዥ ከተዘረዘሩት ውስጥ ቢያንስ አንድ ካለ በሰንጠረዡ ውስጥ በቀኝ በኩል 1 ብለህ አስቀምጥ፡፡ ከተዘረዘሩት ውስጥ ልጁ ምንም ካልበላ 0 ብለህ አስቀምጥ፡፡

የተጨመረ ቅመም ካለ በስተመጨረሻ ባለው የሳጥን ረድፍ ውስጥ የቅመሙን አይነት ጻፍ፡

ቅመም፡- **የምግብ ዓይነት ሆኖ በምግቡ ውስጥ ከ1 የገበታ ማንኪያ በታች የተጠቀሙት ከሆነ**

ተ.ቁ	የምግብ ስብጥር/ዓይነት እና የምግብ ዝርዝሮች	መልስ አለ (1)የለም(0)	የቅመም አይነት
501	**እህል ፣ስራስር** ጤፍ፣፣ስንዴ፣በቆሎ፣አጃ፣ገብስ፣ሩዝ፣ማሽላ/ዘንጋዳ፣ዳጉሳ ወዘተ እና በተለያዩ አዘገጃጀት፡-እንጀራ፣ዳቦ፣ቂጣ፣ብስኩት፣ፒዛ፣ አምባሻ፣አነባበሮ፣ፓስታ፣መኮሮኒ፣አጥሚት፣በሶ፣ቦንቦሊኖ፣ ሳምቡሳ፣ሳንድዊች፣ኬክ፣ጨጨብሳ፣ፈጢራ፣ፍርፍር፣ቂንጮ፣ሱፍ ፍትፍት፣ቆሎ፣ንፍሮ፣ዳቦቆሎ፣ወዘተ ድንች፣ቀይሥር፣የእንጨትቦዬ፣ጎደሬ፣ወዘተ እንዲሁም ከስራስር የተሰሩ ቡላ፣ቆሬጮ		
502	**ጥራጥሬ እና የለውዝ እህሎች** ሽምብራ፣ምስር፣አተር፣ባቄላ፣አኩሪአተር፣ለውዝ፣እና ወዘተ በተለያዩ አዘገጃጀት፡-እንዲሁም ከነዚህ የተሰራ ወጥ፣ቆሎ፣ ንፍሮ፣ስልጆ፣ፉል፣የለውዝቅቤ፣ቴስቲሶያ…		
503	**ወተትና የወተት ተዋጽኦ** የላምወተት፣የዱቄትወተት፣እርጎ፣አይብ፣ቅቤ፣አንት/አሬራ፣ ታሸገውየሚሸጡየወተትምርቶችንጨምሮ		
504	**ስጋ** የበሬ፣በግ፣ፍየል፣የአካልስጋ(ጉበት፣ኩላሊት)፣ዶሮ፣አሳ እና ከነዚህ የተሰራ ወጥ፣ጥብስ፣ቅቅል (የበግ ወይም የፍየል) ወዘተ		
505	**እንቁላል** በተለያዩ አዘገጃጀት፡-እንቁላል ፍርፍር፣የተቀቀለ፣ የተጠበሰ እናሌሎች ከእንቁላል የተዘጋጁምርቶች		
506	**በ ቪታሚን ኤ የበለጸጉ አትክልትና ፍራፍሬ** ማንጎ፣ፓፓያ፣ኮክ፣እንዲሁም 100% ከነዚ የተሰራ ጁስ		

	ካሮት፣ዱባ፣የአበሻጎመን፣ቆስጣ፣ስኳርድንች፣ቀይ ቃሪያ፣ብሮክሊ እናወዘተእንዲሁም በተለያየ አዘገጃጀት		
507	ሌሎች ፍራፍሬና አትክልቶች ወይ አቮካዶ፣ሙዝ፣አፕል፣ሎሚ፣አናናስ፣ኢንጆሪ፣ሀባብ፣ብርቱካን፣ የወይን ፍሬ ወዘተ ቲማቲም፣ቀይ ሽንኩርት፣ነጭ ሽንኩርት፣የአበባ ጎመን፣ጥቅል ጎመን፣ሰላጣ፣ቀይስር፣አረንጓዴ ቃሪያ፣እንጉዳይ፣ዝኩኒ ወዘተ		
508	ከላይያልተጠቀሱሌሎች ካለ ይጻፍ----------	----------	

መመሪያ3፡-ህጻኑባለፈው 24 ሰዓት ውስጥ ምንም አይነት የእንስሳት ተዋጽኦ ካልተመገበ ያልተመገበበትን ምክንያት የልጁን እናት ጠይቅ፡፡አማራጮቹንለተጠያቂዋአታንብብ!

509	ልጁ የእንስሳት ተዋጽኦ ሊመገብ ያልቻለበት ምክንያት?	1. በብር/ገቢእጥረት ☐ 2. በአካባቢ/በገበያስለማይገኝ ☐ 3. ልጁ የእንስሳት ተዋጽኦ ለመመገብ ገና ስላልደረሰ በሚል አስተሳሰብ ☐ 77. ሌላ(ይገለጽ)----------	

Annex 6: Second visit data collecting checklist (Amharic Version)

Questionnaire (Amharic Version) የሁለተኛ ዙር መጠይቅ

በአዲስ አበባ ዩኒቨርስቲ ህክምና ሣይንስ ፊኩሌቲ የህብረተሰብ ጤና አጠባበቅ ትምህርት ክፍል የኢትዮጵያ ኦርቶዶክስ ተዋህዶ ቤተክርስቲያን በዓብይ ፆም የእናቶች ጾም ከስድስት ወር እስከ ሁለት አመት ያሉ ህጻናት የአመጋገብ ስብጥር ላይ ያለውን አስተዋጽኦ ከጾም በፊትና የጾም ጊዜ የሚሰራ የጥናታዊ ፅሁፌ መረጃ መሰብሰቢያ መጠይቅ

የግለሰቡ/ቧመለያኮድ: _____

ቃለ-መጠይቁየተደረገበትቀን: __ __ / __ __ / 2011ዓ.ም.

ቃለ-መጠይቁየተደረገበትሰዓት: ከ__ __: __ __ ያበቃበትሰዓት: __ __: __ __

ክፍል 1፡- የእናት የጸም ሁኔታ እና የህጻኑ ጡት የመጥባት ሁኔታን የተመለከተ መጠይቅ

ተ.ቁ	ጥያቄ	መልስ	
101	ባለፈው 24 ሰሃት ውስጥ ይህን የፋሲካ ጸም ጸመዋል ?	1. አዎ ☐ 0.አልጸምኩም ☐	አልጸምኩም ከሆነ መልስዎ ወደ ጠያቂ ቁጥር 103 ሂድ
102	አዎ ከሆነ መልስዎ የጸሙን ሁኔታ በምርጫዎቹ ከተሰጡት ሳጥን ውስጥ የ√ ምልክት ያስቀምጡ	1. የእንስሳት ተዋጽኦ አልበላም ከአሳ በስተቀር 1. አዎ ☐ 0.አይደለም ☐ 2. የእንስሳት ተዋጽኦ አልበላም አሳንም ጨምሮ 1. አዎ ☐ 0.አይደለም ☐ 3. የእንስሳት ተዋጽኦ አልበላም አሳንም ጨምሮ እና ምንም ምግብ ውሀ ሳልቀምስ እስከ ጠዋት 3ሰዓት እቆያለሁ 1. አዎ ☐ 0.አይደለም ☐ 4. የእንስሳት ተዋጽኦ አልበላም አሳንም ጨምሮ እና ምንም ምግብ ውሀ ሳልቀም እስከ ከሰዓት 6ሰዓት እቆያለሁ ☐ 1. አዎ ☐ 0.አይደለም 5. የእንስሳት ተዋጽኦ አልበላም አሳንም ጨምሮ እና ምንም ምግብ ውሀ ሳልቀም እስከ ከሰዓት 9ሰዓት እቆያለሁ 1. አዎ ☐ 0.አይደለም ☐ 6. የእንስሳት ተዋጽኦ አልበላም አሳንም ጨምሮ እና ምንም ምግብ ውሀ ሳልቀም እስከ ማታ	

		12ሰዓት እቆያለሁ 1. አዎ ☐ 0.አይደለም ☐ 77. ሌላ(ይገለጽ)----------	
103	ትናንት ህጻኑን የመገበው ማን ነበር?	1.የልጁ እናት ☐ 2.የልጁ ሴት አያት ☐ 3.አባት/ሌላ የቤተሰብ አባል የሆነ ትልቅ ሰው ☐ 4.ከ15 አመት በታች ያለ የቤተሰብ አባል ☐ 5.ከቤተሰብውጪ ያለ ሰው(ጎረቤት፣ጓደኛ...) ☐	ህጻኑን የተመለከተ ጥያቄ ይህን ሰው ጠይቅ
104	ትናንት በቀን ወይም በለሊት ህጻኑ ጡት ጠብቶ ነበር?	1. አዎ ☐ 0. አልጠባም ☐	

ክፍል 2፡- ህጻኑ ባለፈው 24 ሰዓት ውስጥ ስለተመገበው የምግብ ዓይነትየተመለከተ መጠይቅ

የህጻኑ የአበጋገብ ስብጥርን የተመለከተ መጠይቅ

መመሪያ 1 ፡ባለፈው 24 ሰዓት ውስጥ እናት ለ ልጇ በቤት ውስጥም ሆነ ከቤት ውጪ ቀን እና ማታ የመገበችውን ምግብ ና መጠጥ ጠይቅ፡፡ መጀመሪያ ጠዋት ለህጻኑ የመገበችውን በመጠየቅ ጀምር፡፡ መላጀ የምትጠቅሰውን እያንዳንዱን የምግብ እና የመጠጥ አይነት ጻፍ፡፡ ከተጠቀሱት ውስጥ የተቀላቀለ

ምግብ ካለ ምግቡ ከምን ንጠረ ነገሮች እና ቅመሞች እንደተሰራ ጠይቅ፡

ንጥረ ነገር፡- የምግብ ዓይነት ሆኖ በምግቡ ውስጥ በያንስ ከ 1 የገበታ ማንኪያ በላይ የተጠቀሙት ከሆነ

ቅመም፡- የምግብ ዓይነት ሆኖ በምግቡ ውስጥ ከአንድ የገበታ ማንኪያ እና ከዛ በታች የተጠቀሙት ከሆነ መላሿ ትያቄውን መልሳ ከጨረሰች በኃላ፣ ያልተጠቀሱ ምግቦችን አረጋግጥ

ቁርስ	መክሰስ	ምሳ	መክሰስ	ራት	መክሰስ

የተጨመረ ቅመም ካለ----------

አስታውስ፡ልጅዎት በትናንትነው ቀን ከውጪ የበላው ምግብ አለ?

መላሿ/ሹ ሁሉንም አስታውሳ/ሶ ከጨረሰች/ከጨረሰ በኃላ፣ ከላይ በመዘገብከው/ሽው መሰረት እታች ባለው የምግብ አየነት ላይ ሙላ

መመሪያ 2: ከላይ የመዘገብከውን/ሽውን ምግቦች ከዚህ በታች ባሉት በተገዳኝ የምግብ ዝርዝሮች ውስጥ በማስተያት ፣ በሰንጠረዥ ከተዘረዘሩት ውስጥ ቢያንስ አንድ ካለ በሰንጠረዡ ውስጥ በቀኝ በኩል 1 ብለህ አስቀምጥ፡፡ ከተዘረዘሩት ውስጥ ልጁ ምንም ካልበላ 0 ብለህ አስቀምጥ፡፡ የተጨመረ ቅመም ካለ በስተመጨረሻ ባለው የሳጥን ረድፍ ውስጥ የቅመሙን አይነት ጻፍ፡፡

ቅመም፡- የምግብ ዓይነት ሆኖ በምግቡ ውስጥ ከ 1 የገበታ ማንኪያ በታች የተጠቀሙት ከሆነ

ያሉትን አማራጮች ለ ተጠያቂው አታንብብ!

ተ.ቁ	የምግብ ስብጥር/ዓይነት እና የምግብ ዝርዝሮች	መልስ አለ (1)የለም(0)	የቅመም አይነት
201	**እህል ፣ስራስር** ጤፍ፣፣ስንዴ፣በቆሎ፣አጃ፣ገብስ፣ሩዝ፣ማሽላ/ዘንጋዳ፣ ዳጉሳወዘተእናበተለያዩአዘገጃጀት፦እንጀራ፣ዳቦ፣ቂጣ፣ብስኩት፣ ፒዛ፣አምባሻ፣አነባበሮ፣ፓስታ፣መኮሮኒ፣አጥሚት፣በሶ፣ቦንቦሊኖ፣ ሳምቡሳ፣ሳንድዊች፣ኬክ፣ፈጨፈጨብሳ፣ፈጢራ፣ፍርፍር፣ቂንጮ፣ሱፍ ፍትፍት፣ቆሎ፣ንፍሮ፣ዳቦቆሎ፣ወዘተ ድንች፣ቀይሥር፣የእንጨትቦዬ፣ጎደሬ፣ወዘተ እንዲሁም ከስራስር የተሰሩ ቡላ፣ቆሮጮ		
202	**ጥራጥሬ እና የለውዝ እህሎች** ሽምብራ፣ምስር፣አተር፣ባቄላ፣አኩሪአተር፣ለውዝ፣እና ወዘተ በተለያዩ አዘገጃጀት፦እንዲሁም ከነዚህ የተሰራ ወጥ፣ቆሎ፣ ንፍሮ፣ስልጆ፣ፉል፣የለውዝቅቤ፣ቴስቲሶያ…		
203	**ወተትና የወተት ተዋጽኦ** የላምወተት፣የዱቄትወተት፣እርጎ፣አይብ፣ቅቤ፣አንት/አሬራ፣ ታሸገውየሚሸጡየወተትምርቶችንጨምሮ		
204	**ስጋ** የበሬ፣በግ፣ፍየል፣የአካልስጋ(ጉበት፣ኩላሊት)፣ዶሮ፣አሳ እና ከነዚህ የተሰራ ወጥ፣ጥብስ፣ቅቅል (የበግ ወይም የፍየል)ወዘተ		
205	**እንቁላል** በተለያዩ አዘገጃጀት፦እንቁላል ፍርፍር፣የተቀቀለ፣ የተጠበሰ እናሌሎች ከእንቁላል የተዘጋጁምርቶች		
206	**በ ቪታሚን ኤ የበለጸጉ አትክልትና ፍራፍሬ** ማንጎ፣ፓፓያ፣ኮክ፣እንዲሁም 100% ከነዚ የተሰራ ጁስ ካሮት፣ዱባ፣የአበሻጎመን፣ቆስጣ፣ስኳርድንች፣ቀይ ቃሪያ፣ብሮኮሊ		

	እናወዘተእንዲሁም በተለያየ አዘገጃጀት		
207	**ሌሎች ፍራፍሬና አትክልቶች** አቮካዶ፣ሙዝ፣አፕል፣ሎሚ፣አናናስ፣ኢንጆሪ፣ሀባብ፣ብርቱካን፣ የወይን ፍሬ ወዘተ ቲማቲም፣ቀይ ሽንኩርት፣ነጭ ሽንኩርት፣የአበባ ጎመን፣ጥቅል ጎመን፣ሰላጣ፣ቀይስር፣አረንጓዴ ቃሪያ፣እንጉዳይ፣ዝኩኒ ወዘተ		
208	ከላይ ያልተጠቀሱ ሌሎች ካሉ ይጻፍ-----	----------	

መመሪያ3: ህጻኑ ባለፈው 24 ሰዓት ውስጥ ምንም አይነት የእንስሳት ተዋጽኦ ካልተመገበ ያልተመገበበትን ምክንያት የልጁን እናት ጠይቅ፡፡አማራጮቹን ለተጠያቂው አታንብብ

209	ልጁ የእንስሳት ተዋጽኦ ሊመገብ ያልቻለበት ምክንያት?	1. በብር/ገቢእጥረት ☐ 2. በአካባቢ/በገበያስለማይገኝ ☐ 3. ልጁ የእንስሳት ተዋጽኦ ለመመገብ ገና ስላልደረሰ በሚል አስተሳሰብ ☐ 4. በጸም ምክንያት/ዕቃ እንዳይነካካ፣እናትየዋን እንዳይሸታት ወዘተ ☐ 77.ሌላ (ይገለጽ)----------	