OPTIMAL COMPLEMENTARY FEEDING PRACTICE AND ASSOCIATEDFACTORS AMONG MOTHERS IN WEST BADEWACHO DISTRICT, HADIYA ZONE, SNNPR, ETHIOPIA.

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Optimal complementary feeding practice and associated factors among mothers in West Badewacho District, Hadiya Zone, SNNPR, Ethiopia

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Abstract

Background: Optimal complementary feeding practices play an important role in reducing early child morbidity and mortality. Evidences have shown that promotion of optimal complementary feeding practices reduces the occurrence of stunting and that end with better health and growth outcome. Thus, this study is intended at assessing optimal complementary feeding practices and associated factors among mothers of children age 6–23 months.

Objective: to assess optimal complementary feeding practice and associated factors among mothers of children age 6 - 23 months

Methods: A community-based cross sectional study design was conducted among 682 mothers of children 6–23 months of age in the eight randomly selected kebeles. A multistage sampling technique was used to identify study subjects. Data was collected using pre-tested structured questionnaire. Data was entered in to Epi data version 3.1. Data cleaning and analysis were done using SPSS version 21.Binary logistic regression was used to see the association between the outcomevariables and explanatory variables and multivariable logistic regression was performed to identify independent predictors of timely introduction of complementary feeding, minimum mmeal frequency and minimum dietary diversity.

Results: Total of 671 mothers of children 6–23 months ages were included in analysis. Proportion of children who met timely introduction of complementary feeding, minimum dietary diversity, and minimum meal frequency milk fed for non breast minimum and acceptable diet was 81.1%, 36.6 %, 61.0%, 20.0% and 19.8% respectively. Wealth index [AOR=2.64(1.43,4.88)], total number of under-5year children [AOR=0.13(0.03,0.54)] were positively associated withtimely introduction of complementary feeding practice, husband education [AOR=6.1(1.51,25.19)],having information on breast feeding [AOR = 3.59(1.15,11.18)], mother perception to baby body size[AOR = 1.91(1.27,2.88)] total number of children [AOR = 1.982(1.12,3.48)] and having information on breast feeding [AOR = 3.58(1.15,11.17)] were positively associated with dietary diversity. Besides, birth interval [AOR = 1.807(1.04, 3.12)], frequency of breast feeding [AOR = 2.88(1.01, 8.25)], wealth index [AOR = 1.89(1.18, 3.05)], and GMP participation [AOR = 0.37(0.14, 0.94)] postnatal follow-up [AOR = 0.70(0.02, 0.23)] were positively associated with minimum meal frequency.

Conclusion:Even if the study showed enhanced progress as compared to the national prevalence of complementary feeding practices, optimal complementary feeding practices in the study area were not adequate and not achieving WHO infant and young child feeding recommendations. So, intensification of the existing strategies and creating new intervention measures to strengthen husband education, distribution of IEC material focused on breast feeding and complementary feeding, family planning, ensure food security at household level, highly recommended to improve optimal complementary feeding practice.

Keywords: timely introduction of complementary feeding (TICF) Minimum Meal Frequency (MMF), Minimum dietary diversity (MDD), optimal complementary Feeding, Minimum acceptable diet (MAD).

Acknowledgement

My heartfelt thanks go to West Bedewacho district residents particularly the respondents

mydeepest thanks goes to the health extension workers, data collectors, kebeles leaders west badewacho agricultural office weast badewacho health office and district health centre managers for their cooperation starting from the beginning till the end of the data collection time,The last but not the least, would like to thank the Jimma University and my advisors.

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Abbreviations and acronyms

ANC Antenatal care

CBN Community based nutrition

CC Community conversation

CF Complementary feeding

CSA Central statistics agency

CI Confidence interval

EDHS Ethiopian demographic health survey

ICF Iintroduction of complementary feeding

IYCF Infant and young child feeding

MMF Minimum meal frequency

MDD Minimum dietary diversity

MAD Minimum acceptable diet

NGOS Non-governmental organization

ORS Odds ratios

PNC Postnatal care

SNNPR Southern nation nationalities people region

TDHS Tanzanian demographic health survey

UNICEF Uunited nation children fund

U5 Under five year

GMP Growth monitoring and promotion

SDGS Sustainable development goals

SPSS Statistical package for social science

WHO World Health Organization

CHAPTER 1: INTRODUCTION

1.1. Background

Optimal infant and young child-feeding practices are crucial for nutritional status, growth, development, health, and ultimately the survival of infants and young children[1].To reduce under nutrition (stunting, wasting underweight and anemia)we need to improve the practice of optimal complementary feeding practice in 6-23months of children [2]. Under nutrition puts children in more risk of dying from common infection ,increase the frequency and severity of infection and delayed recovery from and also major cause of under lying cause of death in under- 5 year children that accounts 45% of worldwide [3]. Effects of poor nutrition and stunting continue over the child's life, contributing to poor school performance, reduced productivity, and other measures of impaired intellectual and social development [4, 5].

Optimal infant and young child feeding have single greatest potential impact on child survival [6]. At least 6% of deaths in under- 5 years children could be prevented by adequate complementary feeding [7]. Complementary feeding should be timely started (at 6-8 months of infant age), which is providing other foods or liquids along with mother's milk to the baby and have been cited as one of the most cost effective strategies for improving health, when maintaining its quality and quantity. Among 15 top ranked child survival interventions complementary feeding starting at 6 months was third. and it estimated to prevent almost one fifth of under- five child mortality in developing countries [6].

From the age of six months onwards, when breast milk alone is no longer sufficient to meet all nutritional requirements, The incidence of malnutrition rises sharply during the period from 6 to 18 months of age in most countries and the deficits acquired at this age are difficult to compensate for later in childhood [4].The World Health Organization recommends that breastfeeding should continue with appropriate complementary feeding from 6 months to 2 years and beyond [8, 9] .on other hand, if infants get an excessive amount of energy from complementary foods, they can reduce the intake of breast milk, but this is not recommended, especially for younger infants [10]. By considering the out-come of optimal complementary feeding practice on improving the nutritional status of children under two years of age, the World Health Organization (WHO) developed a set of 8 core indicators and 7optional indicators to assess child feeding practices [11].

There are strong facts that the promotion of optimal complementary feeding practices reduces morbidity and mortality of child and enhance child survival and better health outcome [12-14] .Hence, it is successful intervention strategy, as the result WHO and United Nation for Child Fund (UNICEF) recommended introduction of complementary foods at 6 months with continued breastfeeding for 2 years of age or beyond[13]. So, this will have a potential to improve the nutritional status of children [11]. However, the prevalence of optimal complementary feeding practices among children aged 6–23 months was very low (4%)in Ethiopia [15]. Preceding studies conducted in a different place on factors associated with optimal complementary feeding practices of children aged 6–23 months give an idea about antenatal and post-natal contacts higher maternal and father education, birth order of index child , food insecure households, household wealth status mothers who had received the feeding advice during immunization of her child, mothers age,households that did not grow vegetables, socio economic status,

exposure to media, , child's sex and age, institutional delivery,maternal occupation, residence, knowledge & frequency of complementary feeding as significantly associated factors for optimal complementary feeding practice [6, 16-20]

This study is aimed in the district to assess optimal complementary feeding practices and associated factors in mothers of 6 - 23 months age children in West badewacho district, Hadiya zone, SNNPR. Ethiopia ,in order to assist the nutrition program to better monitor the changes in the feeding practices and design interventions to enhance the recommended WHO feeding practices and thereby contribute in reducing under nutrition in the study area and somewhere else.

1.2. Statement of the problems

Worldwide, Less than one-third of 6- to 23-month-old children met the minimum criteria for dietary diversity and only 50% received the minimum number of meals. Although effective health-sector– based interventions for tackling childhood under nutrition are known, intervention coverage data are available for only a small proportion of them and reveal mostly low coverage[21].

According to EDHS 2011 report 5% of children were fed minimum dietary diversity and 4% of children fed minimum meal frequency per day and about half (49%) of children aged 6 - 8 months consumed solid, semi-solid, or soft foods while 96% of children continued breastfeeding at one year, and 82% continued at 2 year. Only 4% of children 6 - 23 months living with their mothers are fed in accordance with IYCF practices and 66% children under the age of two receive age-appropriate breastfeeding. The prelactealfeeds within the first three days of life were 27%, while 12% used a bottle with a nipple[22].Optimal complementary feeding practices directly impact the nutritional status and, ultimately survival of children less than 2 years of age. If children do not receive sufficient dietary diversity and meal frequency after 6 months of age they will become stunted even after optimum breastfeeding [11].

In Ethiopia, 38% of children under five are stunted (too short for their age). 24% of children underweight, 10% of children wasted. .However, under-five mortality rate declining pattern , that has 116 death per1000 live birth 10-14year ,67death per 1000 live birth in the 0-4year(2012-2016). However, the mortality reduction was not uniform across the different childhood age groups, geographic and socio-demographic population groups.Stunting is slightly higher among male than female children (41 percent versus 35 percent). And Stunting is greater among children in rural areas (40 percent) than urban areas (25 percent)[23]

The strong relationship between quality of diet and obesity indicates that appropriate complementary feeding with diverse, nutrient rich foods, can be protective against overweight and obesity. For countries under- going nutrition transition and facing double burden of mal nutrition. optimal IYCF and early intervention are even more critical to ensure that investments are targeting children under two years to avoid risk of becoming both " stunted and obese"[24]

Therefore WHO released a set of indicators designed to be used in population-based surveys to measure adherence to recommended feeding practices. Recently, the indicators have been updated to include a greater focus on optimal complementary feeding practices for children of 6-23 months [1].

Chapter 2: Literature review

Optimal complementary feeding is crucial for the child health, survival and reduction of child morbidity and mortality and some evidence show that complementary feeding is associated with maternal education, family size, child interval, number of child, antenatal (ANC) follow-up and postnatal (PNC) visit.

2.1. Optimal complementary feeding practice current WHO indicator and its association with parent/socio demographic characteristics

Study conducted in Nepal mothers was found that mothers educational level, strongly associated with appropriate feeding. Educated mother had high rate of ideal feeding than the uneducated mother. Literacy of mother was found to have association with infant and young child feeding practices. Uneducated mothers were almost 2 times more likely to have inappropriate feeding practices whereas father's education was not found to be a factor [11]mother who did not receive advice about the complementary feeding and maternal age during the first child birth > 18 years and mother who breastfed less than eight times per day were negatively associated with prelacteal fed .mothers who did not receive advice about complementary feeding were 2.3 times more likely to practice prelacteal feeding than those who did receive information. Mothers who fed their child below minimum meal frequency were twice more likely to practice pre-lacteal fed than their counterpart[17] mothers whose age was greater than 18 year during the first child birth were 55% less likely to practice pre-lacteal feeding than their counterpart [17]children whose fathers had gotten no formal education were 2.9 times more likely to go through early introduction of complementary food than their counter part, mother who practices bottle feeding were 3.1 times more likely to feed their child early complementary food than their counter parts, fathers with no formal education, mothers who reported no increased food consumption during lactation and pregnancy were positively associated with late introduction of complementary food. [17] Study done in shashemane woreda study done in Nairobi Kenya reveal that mothers perception to baby body size weresignificantly associate with complementary feeding practice[25]Oromia region reveal that, husband occupation significantly associate with complementary feeding practice[19]study conducted in rural population of northwest Ethiopia prelacteal feeding was common in the study area, and significantly associated with poor maternal knowledge of IYCF children born from mothers who were well educated and had a secondary level education or higher education had greater odds of feeding diversified foods[16].study conducted in Bangladesh reveal that father education were significantly associate complementary feeding practice[11].

2.2. Optimal complementary feeding practice current WHO indicator and its association with child characteristics

There was no association between sex and feeding practices of the infant and young child[7] study done on dietary diversity, meal frequency and associated factors in Northwest Ethiopia: a cross- sectional study reveal that birth order of index child had significant association with dietary diversity. children born in the second to fourth order and above fourth order respectively, had about two and three times higher odds of having the minimum dietary diversity compared with children who were born in first order .mothers from joint family had high chance of feeding their child appropriately than mother from nuclear family ,

religion also had significantly affected the ideal feeding [16] , age of a child, birth order of index child, area of residence, home gardening and satisfactory media exposure of a mother were significantly associated with providing the minimum dietary diversity after controlling for other predictors in the model[16] , study done shashemane reveal that number of children, age of child and birth order were significantly associated with complementary feeding[19].

2.3. Optimal complementary feeding practice current WHO indicator and its association with health care characteristic

Mothers who did not follow ANC during pregnancy were 1.5 times more likely to practice pre-lacteal feeding than those who did follow [17] study conducted in Nepal mothers It was also found that the mothers who had received the feeding advice during immunization of her child had good feeding practice. Mothers who did not receive feeding advice in immunization clinic had 1.7 times more chance to have inappropriate feeding practices than the mothers who received advice in immunization[7] stud conducted in shashemane woreda, reveal that place of delivery, birth attendant, ANC visit and PNC were significantly associated with complementary feeding practice [19].

2.4. Optimal complementary feeding practice current WHO indicator and its association with community and household characteristics

Study conducted in Sidama zone SNNPR,Ethiopia it was found that those households that did not grow vegetables were 2.8 times more likely to feed their child below minimum dietary diversity than their counterparts[17] . On the other hand, children in households with land size > 0.25 hectare and with 4 or above birth order were less likely to be fed below minimum dietary diversity than their counterpart [17]in Nepal mothers the family income and the income sufficiency for their livelihood had no relation with the feeding practices. type of family and religion of the family were strongly associated with appropriate feeding[7] study done on dietary diversity, meal frequency and associated factors in Northwest Ethiopia: a cross- sectional study reveal that area of residence, home gardening and satisfactory media exposure of a mother were significantly associated with providing the minimum dietary diversity after controlling for other predictors in the model[16]

2.5 Optimal complementary feeding practice current WHO indicator and its association with food security and wealth index characteristics

Study conducted in silt woreda SNNPR, Ethiopia reveal that childhood stunting was identified as one of the major associated factors of food insecurity, stunted children were 2 times more likely to live in food insecure households than non-stunted counterpart.[18]Study conducted in Sidama zone SNNPR, Ethiopia showed that Households whose land size less than 0.25 hectare were 2 times more likely to practice late introduction of complementary food than their counter [17]

Community based cross-sectional study done in rural population of northwest Ethiopiareveal that prelacteal feeding was common in the study area, and significantly associated with a poor household wealth status, poor maternal knowledge of IYCF, and giving birth at home [26].study conducted in shashemane woreda reveal that socio economic status was significantly

associated child feeding practice [19] study conducted in Bangladesh reveal thathousehold wealth status significantly associate[11]

2.6 Significance of the study

Less than one-third of 6- to 23-month-old children met the minimum criteria for DDS and only 50% received MMF world-wide.and in Ethiopia Children with adequate dietary diversity score and meal frequency were 10.8% and 44.7%, respectively .Although effective health-sector– based interventions for tackling childhood under nutrition are known, intervention coverage data are available for only a small proportion of them and reveal mostly low coverage .there should be an urgent measure to identify reasons why complementary feeding indicators are still low. So, this study was aimed to measure the practice and associated factors.

And the study result will help for health extension workers, Health worker and others who work in health facilities and in the community setting during counseling/health education session to increase awareness on complementary feeding practice.

Also the study findings assist non-governmental organizations (NGOs), and provide relevant information for policy makers on WHO recommendation of complementary feeding practice. Besides these it provides some critical insights for further research and nutrition program intervention.That resulted in reduction of child morbidity and mortality in Ethiopia and somewhere else.

2.7. CONCEPTUAL FRAMEWORK

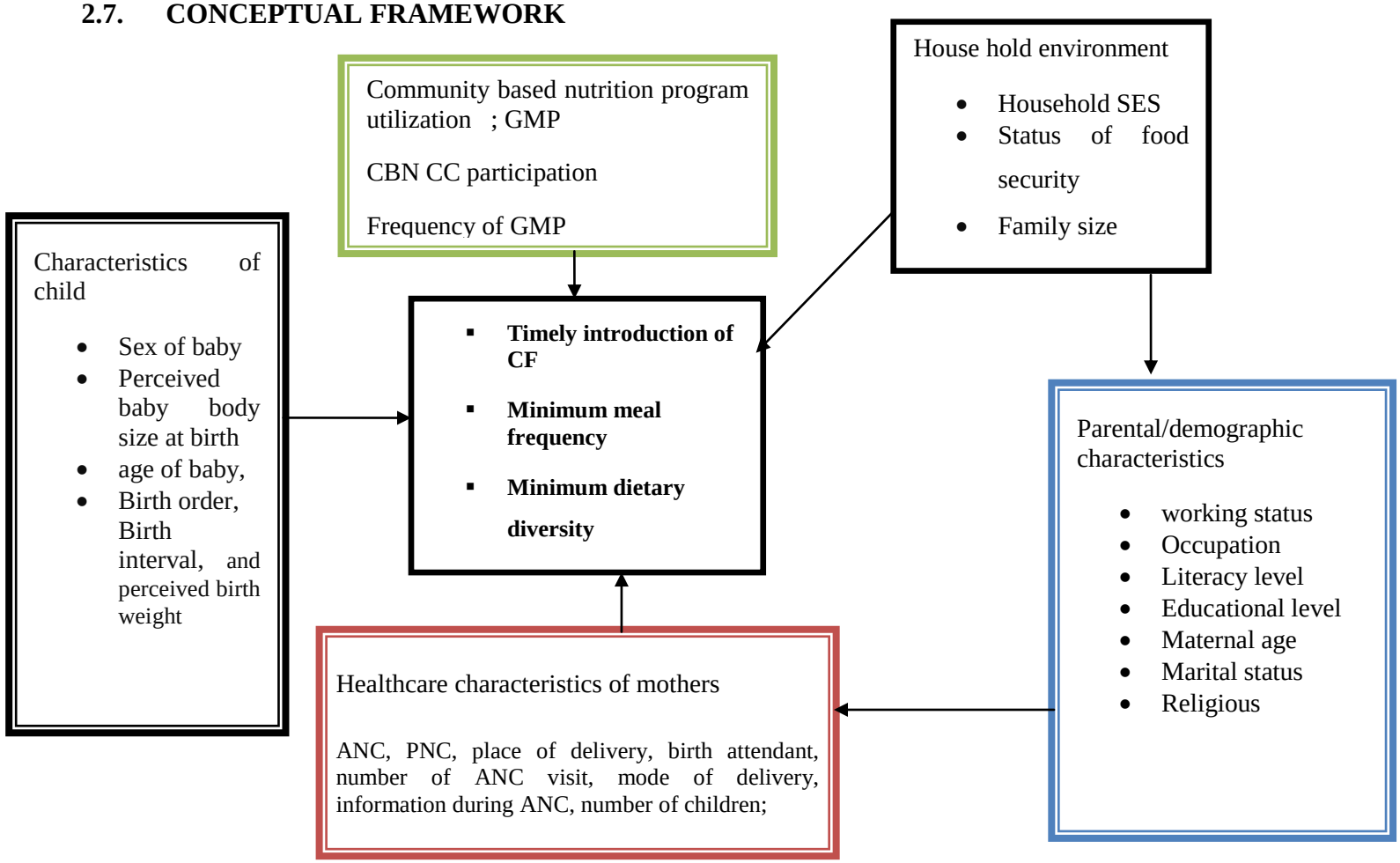

Figure1 Conceptual framework on factors affecting complementary feeding practice (adapted from hector etal, 2003)

Chapter 3: Objectives

3.1. General Objective

- To assess optimal complementary feeding practice and associated factors among mothers of children 6 - 23 months of age in west Badewacho district, Hadiya zone, SNNPR.

3.2. Specific objectives

- To determine the practice of timely introduction of complementary feeding among mothers of children 6-23 months age
- To determine the practice of receiving minimum dietary diversity of children 6-23 months age
- To determine the practice of receiving minimum meal frequency of children 6-23 months age
- To identify factors associated with timely introduction of complementary feeding
- To identify factors associated with minimum dietary diversity
- To identify factors associated with minimum meal frequency

Chapter 4: Methods and Materials

4.1. Study area and period

This study was conducted in west badewacho district, Hadiya Zone, SNNPR, Ethiopia. There are12 Woredas in the Zone and total population is estimated to be 1,611,759 according to 2017 population projection. West badewecho is one of woreda which is located at 352km south of Addis Ababa (capital city of Ethiopia) and it is located approximately in 07°69'00″N to 07°91'91″N latitude and 37°95'00″E to 38°10'00″E longitude. Total population is 106,263 and total households 21,686 projected in same year, total population of which 98% is rural and the remaing2% urban. Among the total population male constitutes 52600 (49.5 %) and female constitutes 53,663 (50.5 %). Under five year children 116577(15.60%) productive age (15-49) 24759(23.30%) Children aged 6–23 months of age in the district constituted 6.7 % (7,119) of the population as projected for 2017 from west badewacho health office. In the woreda 4 health centers 23 health posts.The livelihood of more than 65 % of the district population is based on farming. The study area has temperature and rainfall range of 12°C152 to 28°C and 200 mm to 400 mm, respectively. The rural population is mainly engaged in crop and animal production, the dominant crop cultivated in the area includes maize, haricot bean, teff, wheat, sweet potato, taro, coffee, inset and banana. The study was conducted from March 1to March 30, 2017.

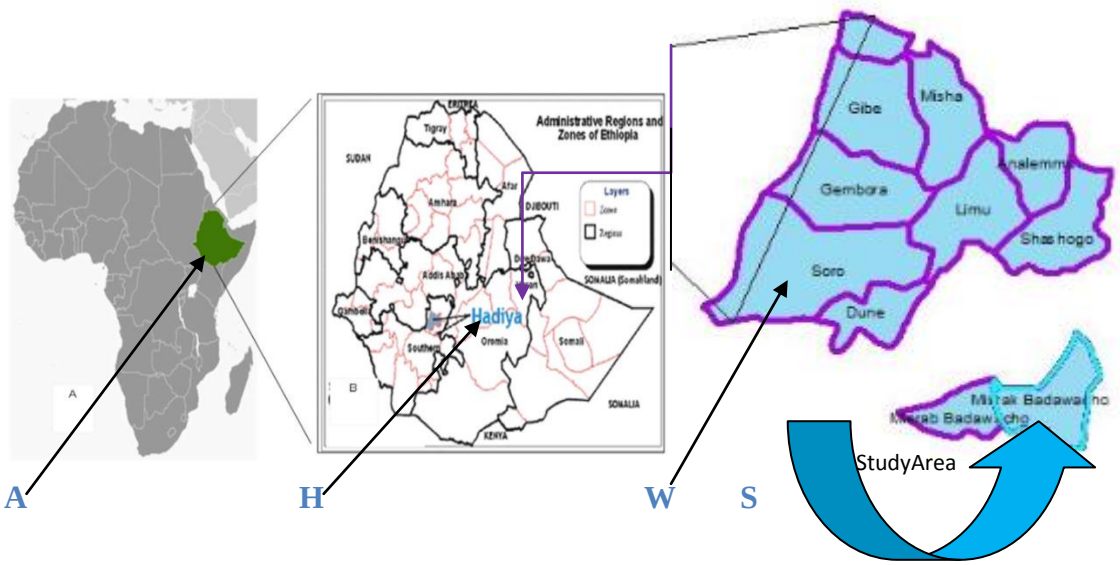

Figure2: Map of study Area, A = Ethiopia in Africa H=Hadiya zone in Ethiopia W=woreda in Hadiya zone S= study Area (woreda), (Source: www.paperpublications.org*:* Map of Mirab BadewachoWoreda*, SNNPR Water Resource Bureau, 2008).*

4.2 Study design

Community based cross sectional study design was employed.

4.3. Population

4.3.1 Source population

The source population for this study was mothers who have children 6-23 months of age.

4.3.2. Study population

1. The study population was mothers who have children 6-23 months of age who were sampled from the source population during the study period.

4.3.3 Study unit

Selected mothers who have children 6-23 months of age

4.4. Inclusion and Exclusion criteria

*4.4.1. **Inclusion** criteria*

Mothers who have children 6-23 months of age

*4.4.2. **Exclusion criterion***

Mothers who were unable to communicate due to serious illness at the time of data collection

4.5. Sample size and sampling technique

4.5.1. Sample size calculations

The sample size was calculated using single population proportion formula by considering the following assumption

- 95% Confidence level.
- 5% margin of error
- Minimum prevalence (practice) from previous survey used
- design effect=2
- And finally adding10% non- response rate

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

• 95% confidence level, prevalence practice of 19% for minimum dietary diversity and 67.3% for minimum meal frequency, 72.5% for introduction of complementary feeding, 12.3% for minimum acceptable diet, Marginal error of 5% [27]

Using single population proportion formula; $n=\frac{(Z_{\alpha/2})^2 P (1-P)}{d^2}$

Table 1. Sample size calculation and assumptions for first specific objective

Survey	$Z\frac{\alpha}{2}$	Prevalence	1-p	Sample
MDD	1.96	0.19	0.81	236
MMF	1.96	0.673	0.327	338
ICF	1.96	0.725	0.275	306
MAD	1.96	0.123	0.877	166

Thus Maximum calculated sample size by single population proportion was338.

10% non response rate 10%*338=34

❖ Target population

Is less than 10,000, so using correction formula is appropriate

$n = \frac{n}{1+\frac{n}{N}}$ Where: N= Population size,

Considering (10%) non-response rate,

10%*310=31 thus, the total sample size will be 341

By using design effect 2 to multiply sample size: thus to increase final sample size incase increase precision in multi stage sampling. The final sample size be N=682 Specific objective 2**:** To identify factors associated with optimal complementary feeding

From previous study, age of child, maternal education, family size have high AOR and more significant than other factors to dependent variable (optimal complementary feeding) were calculated by using two proportion formulas by Epi Info^{TM}7.Table 2. Sample size determination and assumptions for second specific objective

Associated factors	Power	Zα/2 of 95% CI	P1	P2	Ratio	AOR	n_1	n total+non respons e-10%	Design effect	Final sample size
Age of child	80%	1.96	0.491	0.123	1:1	2.76	248	25	2	546
Family size	80%	1.96	0.193	0.123	1:1	12.37	34	4	2	76
Maternal education	80%	1.96	50.9	0.175	1:1	3.24	136	14	2	300

Sample size for estimation of first specific objective is larger; so, it addresses both dependent and independent variables more than second specific objective. Therefore, the subsequent report was based on the total sample of 682mothers, identified using the simple random sampling technique from the selected kebeles.

4.5.2. Sampling procedure

Proportional allocation of the calculated sample of 682 was done among the selected kebeles (8 kebele). To get the individual sample units (subjects) at household level, a community health management information system (CHIS) or documented list of all target group of the kebele was used as sampling frame from the health post to get list of target group. By using simple random sampling (random number computer generation) method a child was selected in each kebele and his/her mother was interview accordingly.

Based on WHO assessment tool for sample district selection criteria .Indication of the percentage of districts to be included in the sample for assessment ,districts fraction **,**9 or less, 10–19, 20–39, 40–59 ,60–99 ,100–149, 150 or more All the districts , 10%, 15% ,20%,30%, 40% , 50% respectively ,So in the current study 40% (8kebele)of total 21 kebele was taken (. *Sambo L.G, ethal, 203)*

SAMPLING PROCEDURE

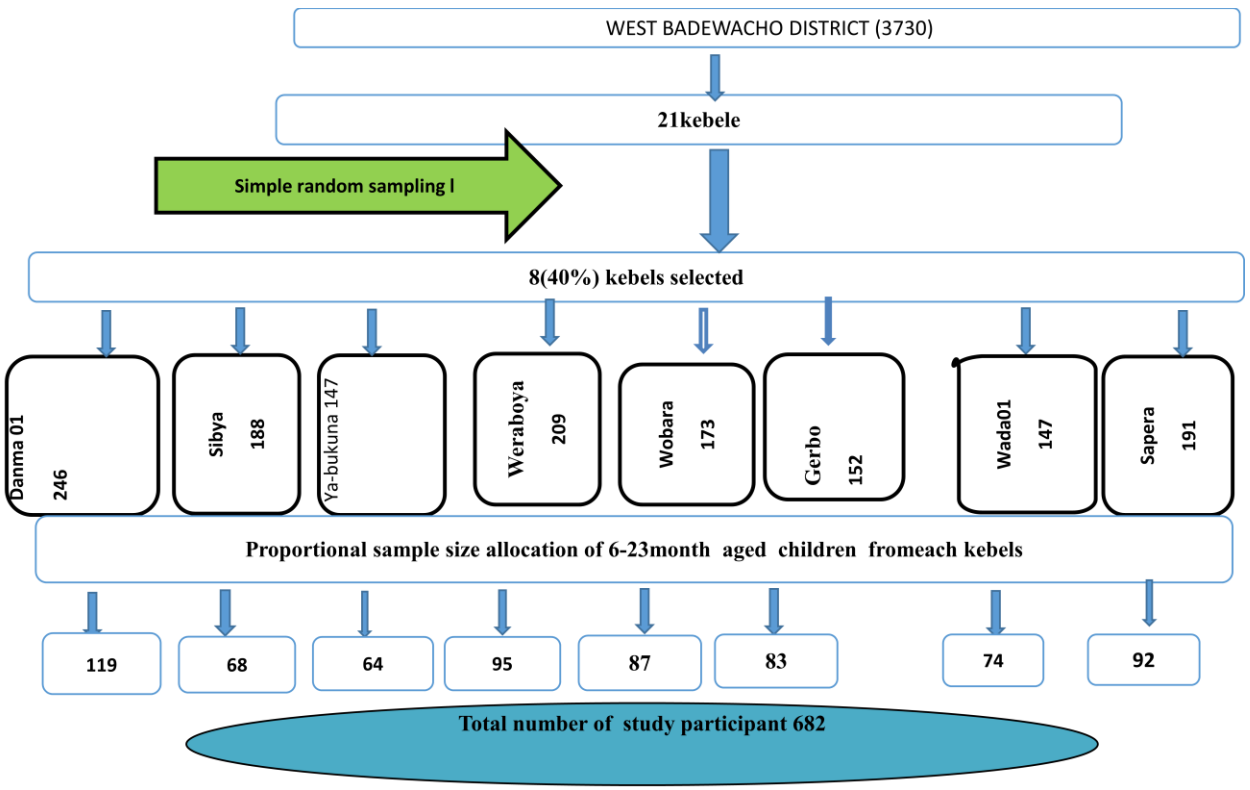

Figure 3: Diagrammatic presentation of sampling procedure to study optimal complementary feeding and associated factors among mothers

4.6. Operational Definitions

Complementary foods**:**Any solid or semi-solid or soft foods which are given to the child in addition to breast milk [1]

Complementary feeding indicators*:* Indicators recommended by the WHO/UNICEF 2010 which include introduction of solid, semi-solid or soft foods, minimum dietary diversity, minimum meal frequency and minimum acceptable diet calculated for the age ranges 6–11, 12–17 and 18–23 months of age, and based on a 24-h recall of the child's dietary intake.

Introduction of solid, semi-solid or soft foods**:** Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods[9]

Minimum dietary diversity: Proportion of children 6–23 months of age who receive foods from 4 or more food groups in previous day, the 7 foods groups used for tabulation of this indicator are: grains, roots and tubers, legumes and nut ,dairy products (milk, yogurt, cheese), flesh foods (meat, fish, poultry and liver/organ meats), eggs, Vitamin-A rich fruits and vegetables, other fruits and vegetables, Consumption of any amount of food from each food group is sufficient to "count", i.e., there is no minimum quantity, except if an item is only used as a condiment. The cut-off of at least 4 of the above 7 food groups above was selected because it is associated with better quality diets for both breastfed and non-breastfed children Consumption of foods from at least 4 food groups on the previous day would mean that in most populations

The child had a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable that day, in addition to a staple food (grain root or tuber) is recommended that the indicator be further disaggregated and reported for the following age groups: 6–11 months, 12–17 months and 18–23 months.[9]

Minimum meal frequency: Proportion of breastfed and non-breastfed children 6–23 months of age, who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more. Minimum is defined as: on-breastfed children 6–23 months of age

2 times for breastfed infants 6–8 months 3 times for breastfed children 9–23 months 4 times for non-breastfed children 6–23 months "Meals" include both meals and snacks (other than trivial amounts), and frequency is based on caregiver report.[9]

Minimum acceptable diet**:** Proportion of children 6–23 months of age who receive a minimum

Acceptable diet (apart from breast milk) [9]

Milk feeding frequency for non-breastfed children**:** Proportion of non-breastfed children

6–23 months of age who receive at least 2 milk feeding[9]

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Minimum acceptable diet: Proportion of children 6–23 months of age who receive a minimum

Acceptable diet (apart from breast milk)[9]

Milk feeding frequency for non-breastfed children: Proportion of non-breastfed children

6–23 months of age who receive at least 2 milk feeding[9]

Large baby**:** mothers' child size perception big baby during birth.

Small baby**:** mothers' child size perception big baby during birth.

4.7. Variables

4.7.1. Dependant variables

Timely introduction of complementary feeding

Minimum meal frequency

Minimum dietary diversity

4.7.2. Independent variables

Parental/ socio demographic characteristics; working status occupation, educational level, literacy level, maternal age, marital status, religious, contact with media

The child characteristics included sex, age, birth order, birth interval, perceived birth weight, number of children.

The household/family characteristics: monthly income of household, and status of food security family size

Health service carecharacteristics: number of ANC visits, place of ANC provided and type of ANC provider, place of delivery and assistance of delivery and timing of postnatal care

Community Based Nutrition(CBN) utilization characteristics.mothers bring their children for GMP,frequency of weighing child, CBN CC participation of mothers, having family health cards , having nutrition information .

4.8. Data collection tools and procedure

Data was collected using structured, pretested, and interviewer administered questionnaire. Partly adopted from WHO assessment tool for infant and young child feeding (IYCF) practices were used. To maintain Consistency, the questionnaire was first translate from English to Hadisa language, the native language of the study area, and was retranslated back by professional translators and Public Health experts. Data collectors and field supervisors were recruited (working in district health facility) for the study. After intensive two days training regarding the objective of the study, confidentiality of information and techniques to conduct interview was given to data collectors and supervisors. The tool was pre-tested on 5 % of the total sample out of the study area. During pre-test the acceptability and applicability of the procedures and tools was evaluated.

4 .9. Data Quality Control Measures

In an effort to collect quality data, a number of strategies were applied. Data collectors and supervisor were nurses holding diploma level or above qualifications. They were recruited and trained for two-days.Training session was organized for data collectors and supervisor for ensuring the reliability and validity of data collecting. The training ensured a good understanding

and acquisition skills for effective and efficient administration of the data collection tools. The content of the training was including the aim of study, survey methodology including selection of eligible participants, data recording, administration of questionnaires and supervision. In addition, the training was focuses on the art of interviewing and clarifying questions that were unclear to the respondents. The final stage in the training of data collectors was involved field-testing of data collecting tools. The main aim here was to refine the tools and to ensure the competence of the data collectors. The questionnaires were pretest and revised before the main field work commenced. Supervisors were ensuring that all the methodological issues were being adhered to. Furthermore, field supervisors were checked all data collected in a given day and make sure that all field challenges were attended to immediately in the field. Any errors noted were discussed with the concerned enumerators. Briefing meetings took place every day where teams shared their experiences in the field and necessary corrections and recommendations made to ensure smooth implementation of the survey. In addition, the Survey Coordinator visited teams in the communities at random to observe how interviews were conducted.

4.10. Statistical analysis

Before analyses, data was checked for completeness, inconsistencies and was entered using Epi–data version 3.1 statistical software. Then the data was exported to SPSS windows version 21.0 and was coded, cleaned and analyzed. Descriptive statistics was used to show socio demographic, child and maternal characteristics and prevalence of complementary feeding practices.

The household food security level was measured using the Household Food Insecurity Access Scale (HFIAS) with scores ranging from 0 to 27 by household level. The HFIAS scores obtained from households were categorized into two main levels namely, “Food secure,” and “Food insecure’’ which combination of 4 category (“food secure” ,“mildly food insecure”, “moderately food insecure” and “severely food insecure,”) based on the HFIAS guideline .

Principal component analysis was used to create the wealth index. A. Households were divided into tertile based on wealth index: tertile 1 (rich): tertile 2 (medium), tertile 3 (poor), It was computed using a composite indicator by considering properties, such as livestock ownership, selected household assets, and size of agricultural land. Varimax rotation was used. The communality of each variable was greater than 0.54; Kaiser-Meyer-Olkin measure of sampling adequacy was 0.67. The cumulative proportion of variance criteria was met with two components which was 67.80%. Split sample validation was done, and none of communality’s of the variable in each split was below 0.5 and finally categorized into poor, medium and rich.

Dietary diversity score (DDS) was computed out of seven from seven food groups.The data were presented in tables and figures by computing the percentages of introduction of complementary feeding, minimum dietary diversity, meal frequency, milk feeding for non- breast feed and acceptable diet. Binary logistic regression was done for the three outcome variables ofoptimal ICF (1=Met requirement and 0= not fulfill the requirement for age groups), MDD (1 = met 4 and above food groups, 0 = met less than four food groups) and MMF (1 = met the minimum requirement for age groups, 0 = not fulfill the minimum requirement).Cross tabulation was also performed to see the distribution of different variables in relation to outcome variable

multi-co linearity among the independent variables were checked,the goodness-of-fit of the model were checked by Hosmer and Lemeshow test.

To verify the variables associated with optimal complementary feeding practices, variables that show a P-value < 0.25 in the vibrate analyses were re-entered into multivariable logistic regression models to control for potential confounders. A p- value < 0.05 was considered statistically significant. Adjusted Odds Ratios and their 95 % Confidence Intervals were reported.

4.11. Ethical Consideration

Ethical clearance was first obtained from the Research Ethical Committee of school of public health, Jimma University. Formal letters were available from district health office and kebele administrators were communicated through woreda health office in addition to individual communication. From each study subject prior to the interview informed consent was obtained after the purpose of the study explained to respondent. Confidentiality of the information was assured and privacy of the respondent was maintained by removing personal identities

4.12. Dissemination of Results

The final report of this study will submitted to College of Health Sciences School of Public health. Effort will be made to disseminate through publication and presentation in scientific conferences. Therefore information will used for informed policy decisions, planning, monitoring, and evaluation of programs on health in general and child health in particular at both the national and regional level.

Chapter 5: Results

5.1. Socio-demographic characteristics of respondent

Six hundred seventy one (671) mothers of children 6-23months age were included for analysis yielding response rate of 98.3%. Majority of mother are in the age group of 25-29years 211(31.4%), with the mean age of 30.06 years (SD±3.61). In the study area, considerable proportion (92% and 98%), respectively of mothers were protestant and married. With regard to educational status, about more than half 363(54.1 %) of mothers were primary level (1-8) and only 135(20%) were illiterate and380 (56.6%) were housewives by occupation. Most of respondentswere Hadiya by ethnicity (93%) Three-fourth (75.9) of children was living with family size of 4-6, regarding to wealth index more than half (52.6%) of respondents were in 3rd quartiles (Table 3).

Table 3 Socio-demographic characteristic of respondents in west Badewacho district, Hadiya Zone, SNNPR, Ethiopia, March10 to April 11, 2017.

Characteristics		Frequency	Percent
Age of mothers/caretakers	less than 19 years	4	6
	20-24	97	14.5
	25-29	198	31.4
	25-29	211	31.4
	30-34	198	29.5
	≥35 years	161	24
Family size	1-3	120	17.9
	4-6	509	75.9
	7 or above	42	6.3
Religion	Protestant	607	90.5
	Others	64	9.5
Ethnicity	Hadiya	624	93.0
	Kambata	35	5.2
	Others	12	1.8
Marital status	Marred	661	98.5
	Others	10	1.5

Table 3 continued

Mothers educational status	Illiterate	135	20.1
	read and write	127	18.9
	primary level(1-8)	363	54.1
	secondary level(9-12)	41	6.1
	college level and above	5	0.7
Mothers current occupational status	Farmer	187	27.9
	house wife	380	56.6
	Others	104	15.5
Husband educational status	Illiterate	72	10.7
	read and write	392	58.4
	primary level(1-8)	148	22.1
	secondary level(9-12)	30	4.5
	college level and above	29	4.3
Head of house hold	mothers/yourself	43	6.4
	Husband	624	93.0
	Grandparents	2	.3
	Others	2	.3
Main occupation of head of house hold	Farming	565	84.2
	agricultural laborer	91	13.6
	Others	15	2.2
Wealth status	Rich	223	33.2
	Medium	93	13.9
	Poor	353	52.6
Main source of drinking water	River	15	2.2
	Borehole	11	1.6
	piped water	34	5.1
	protected spring	271	40.4
	unprotected spring	27	4.0
	protected dug well	313	46.6
House hold toilet faculty	No	6	.9
	Yes	665	99.1

Table 3 continued

Kind of toilet facility	pit latrine with slab	351	52.3
	pit latrine without slab	314	46.8
House-hold have agricultural land	Yes	652	97.2
	No	19	2.8
Unit of agricultural land	≥1hectare	546	81.4
	≥2 hectare	106	15.8
Grow food crops	Yes	629	629
	No	28	28
Type of crop grow	sweet potatoes	33	4.9
	Vegetable	108	16.1
	Coffee	9	1.3
	Chat	3	.4
	Maize	238	35.5
	Inset	255	38.0
Who decides money to be used	mainly husband	83	12.4
	only husband	139	20.7
	both jointly	449	66.9

5. 2: Child Characteristics

More than half (63.8) %) of children were5th and more than half in birth order of 5th or more (63.8%)and about half (52%)of children were females and nearly half 39.8% of them were 6-11 months old.the majority (68.1%) of mother's perception to baby body size small (Table4).

Table 4: characteristics of index children in West Badeacho district SNNPR Ethiopia 2017.

Characteristics	Categories	Frequency	Percent
	1-2 children	657	97.9
Under 5 year age category	3 and more children	11	1.6
Birth interval	no previous birth	306	45.6
	less than 24 month	202	30.1
	more or equal to 24 month	163	24.3
Birth order of child	first borne	87	13.0
	2^{nd} -4^{th}	156	23.2
	5^{th} or more	428	63.8
Total number of children	1-2	243	36.2
	3-4	261	38.9
	≥5	167	24.9
Child weight at birth			
	Yes	205	30.6
	No	466	69.4
Child weight at birth	Low	3	.4
	Normal	149	22.2
	over weight	38	5.7
Sex of child	Male	322	48.0
	Female	349	52.0
Mothers perception to baby body size	Small	457	68.1
	Big	214	31.9
Was breast feed yesterday	Yes	621	92.5
	no	50	7.5
Frequency of breast feeding			
	less than 8 time	102	15.2
	8-12time	481	71.7
	greater than 12 time	54	8.0

Table 4 continued

Intention to breast feeding duration	**less than12month**	**5**	**0.7**
	13-16month	16	2.4
	17-23month	232	34.6
	≥24 month	366	54.5
Ever started complementary feeding	Yes	655	97.6
	No	16	2.4
Started complementary	less than 6 month	466	69.4
	6-8 month	105	15.6
	≥8 month	84	12.5

5.3 Maternal health care related characteristics

Mothers had antenatal visits for the index child was 646(96%), in which only about 13% had greater than or equal to four visits. More than half (61 %) of mothers gave birth at health centre, and more than two-third (69.6 %) of their delivery was attended by nurses. only 249(37.1%) of mothers received postnatal and more than half (59%) of mothers had two and more postnatal visit care. Majority (99%) of mothers had normal deliver, majority of mothers had 3-4 total number of children 262 (38%),**(**Table5)

Table 5: maternal health related characteristics in West Badewacho district SNNPR, Ethiopia, 2017.

Characteristics	categories	Frequency	Percent
Antenatal clinic visit at health facility	Yes	646	96.3
	No	25	3.7
Frequency ANC visit	one times	41	6.1
	two times	153	22.8
	three times	370	55.1
	≥four times	87	13.0

	Home	218	32.5
	health post	19	2.8
Place of deliver	health center	409	61.0

Table 5 continued

How did deliver	**normal deliver**	**664**	**99.0**
	Caesarean	7	1.0
Who helped you during deliver	traditional birth attendant	104	15.5
	health extension worker	21	3.1
	Nurses	467	69.6
	Parents	78	11.6
Source of message on complementary feeding	health worker	76	11.3
	health extension worker	534	79.6
	community health promoter	6	0.9
	family/friends	1	0.1
Postnatal clinic attended	Yes	503	75.0
	No	168	25.0
Frequency of attended postnatal clinic	one times	202	30.1
	two times	249	37.1
	three times	132	19.7
	≥four times	16	2.4
Have you informed about breast Feeding	Yes	579	86.3
	No	92	13.7
Have you informed about complementary feeding	Yes	560	83.5
	No	111	16.5

5.4. Community based nutrition program utilization

Majority of children 582(86.7) participated in community based growth monitoring and promotion in three month and more than half participated two and more times(Table6).

Table 6: Community based nutrition service utilization among mothers in West Badewacho district, Hadiya, SNNPR, Ethiopia, and March10 to April 11, 2017

Character tics	Categories	Frequency	Percent
Did you bring your child to health post for GMP in last three month	Yes	582	86.7
	No	89	13.3
Frequency of weighing in The last three month	one times	161	24.0
	two times	441	65.7
	three times	53	7.9
Frequency of participate in community conversation in last three month	one times	170	25.3
	two times	497	74.1
	three times	4	0.6
Does your child have family card?	Yes	532	79.3
	No	139	20.7
Type of information get during GMP	child growth	122	18.2
	exclusive breast feeding	489	72.9
	complementary feeding	59	8.8
Do you received nutrition information from HEW	Yes	622	92.7
	No	49	7.3

5.5. Indicators for optimal Complementary feeding practice

Indicators of complementary feeding practice were assessed .according to analysis of the result. Mothers fed four or more food groups to their child meeting the minimum dietary diversity criteria was (36.6 %) on the day preceding the study. Majority (81.1 %) of the mothers optimally introduce complementary feeding at 6 months (timely initiated complementary feeding).About more than half (61 %) mothers fed their children minimum meal frequency criteria, the day preceding the study. From the three combining indicators, the minimum acceptable diet of the studied children was (19.8 %).and Two- milk feeding for non-breast feeding children was 20% based on given criteria(Figure 4)

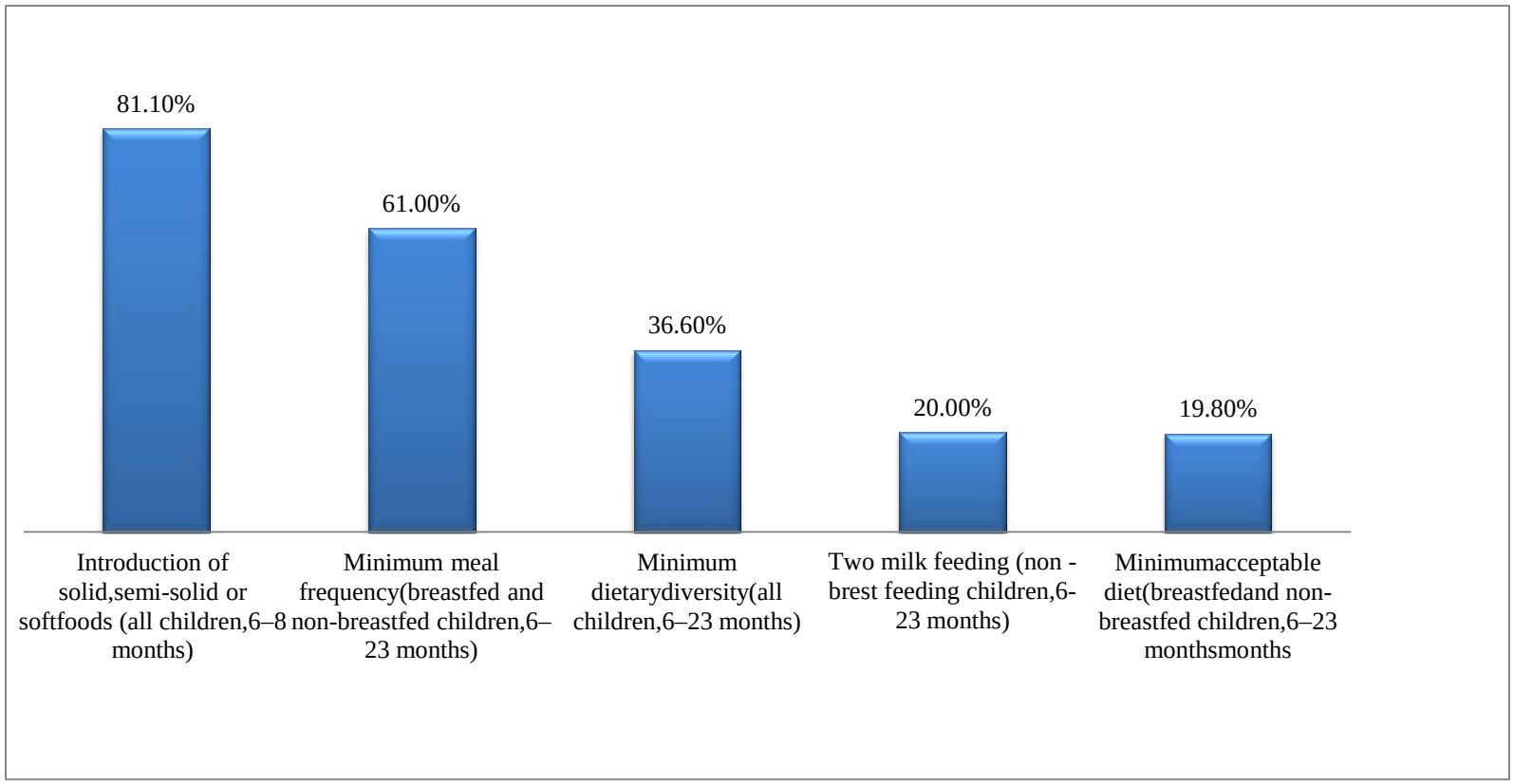

Figure 4: optimal complementary feeding indicators practice among mothers of 6-23 months age in west Badewacho district, SNNPR, Ethiopia.2017.

5.5.1. Minimum meal frequency practice

Among mothers who fed their child minimum meal frequency 23.80% were in age group 6-11 months (Figure5) As study revealed that mother had relatively good practice of minimum mealfrequency in age group of 6to12 months and the practice decrease as age group increase (Figure 5).

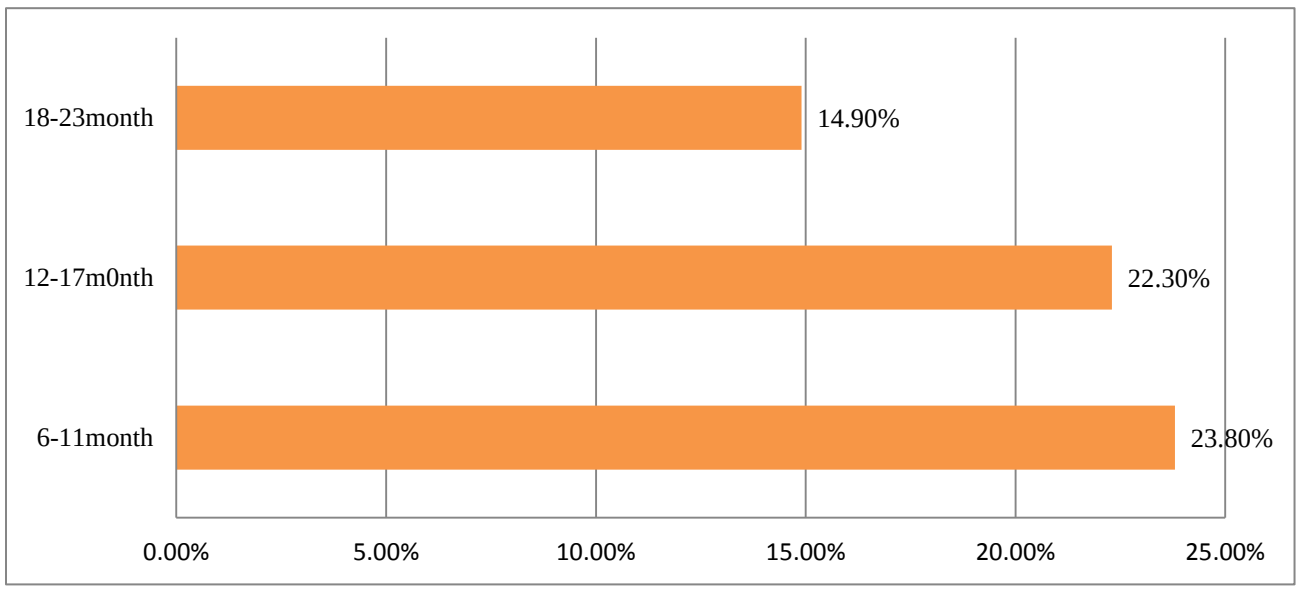

Figure5: **minimum meal frequency practice among mothers of 6-23months age children by age group in west Badewacho district, SNNPR, Ethiopia.2017**.

*5.4.2, Diversity and type of diversified food type*s

Among mothers who included in the study 36.6% fed their child ≥4 food items and the rest 63.4% fed ≤3 food items within 24 hours preceding the survey based on WHO2010 young child feeding recommendation indictors on dietary diversity. The dominant food items were grains, root and tubers. Low feeding practice was observed on other fruits and vegetables and flesh foods which are 27% and 1.5% respectively (Figure 6)

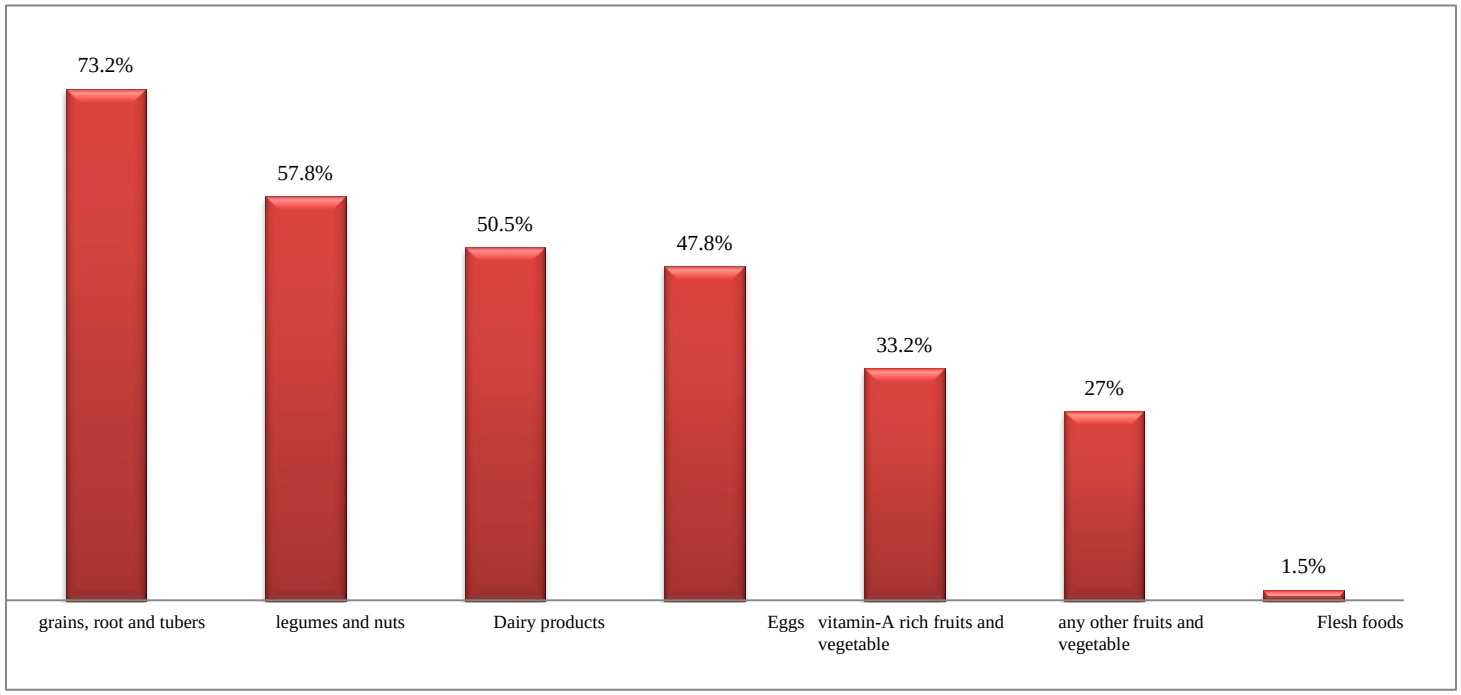

Figure6: Types of food given during the preceding 24 h among children aged 6–23 mothers for 6-23 months children in West Badewachodistrict SNNPR Ethiopia in 2017.

Among mothers who fed their child minimum dietary diversity (≥ food groups) 15.40% were in age group 6-11 months (Figure7) As study revealed that mother had relatively good practice dietary diversity feeding practice in age group of 6to12 months and decrease as age group increase (Figure 7).

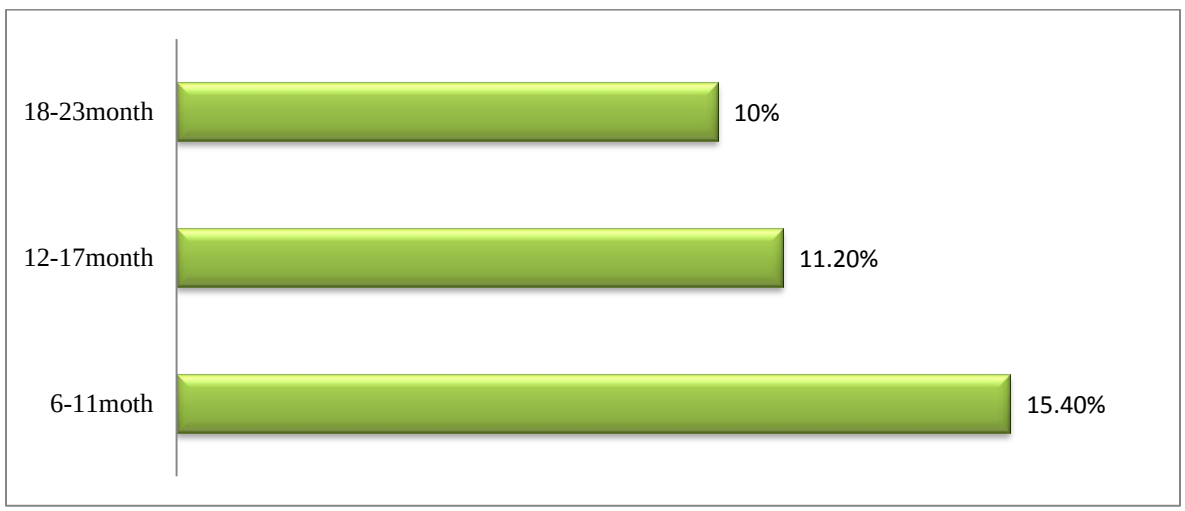

Figure 7Dietary diversity feeding children of 6- 23month age child by age group in West Badewacho SNNPR Ethiopia in 2017.

Table 7 A bi-variate and multivariable logistic regression output on factors associated with minimum dietary diversity practice among mothers of children 6-23 month, West Badewacho districtEthiopia 2017

Characteristics	Categories	Fulfilld minimum dietary diversity		COR(95%CI)	AOR(95% CI)
		Yes	No		
Husband educational status	Illiterate	20(3.0%)	52(7.8%)	1.474(.523-4.154)	1.354(0.386-4.742)
	read and write	159(23.7%)	233(34.8%)	2.616(1.042-6.569)	2.315(.0778-6.888)
	primary level(1-8)	46(6.9%)	101(15.1%)	1.746(.666-4.577)	1.653(.518-5.276)
	secondary level(9-12)	14(2.1%)	16(2.4%)	3.354(1.062-10.590)	6.165(1.165-25.187)*
	college level and above	6(0.9%)	23(3.4%)	1	1
Mothers perception to baby body size	Small	47(7.0%)	167(24.9%)	2.727(1.878-3.959)	1.909(1.265-2.880)**
	Big	198(29.6)	258(38.5%)	1	1
Mothers having information on breast Feeding		236(35.2%)	343(51.2%)	2.727(1.878-3.959)	3.589(1.152-11.178)**
	Yes				
	No	9(1.3%)	82(12.2%)	1	1
Total number of children		203(30.7%)	261(39.5%)	2.051(1.309-3.212)	1.767(.985-3.167)
	1-2				
	3-4			2.877(1.854-4.464)	1.982(1.128-3.481)*
	≥5	40(6.1%)	157(23.8%)	1	1

Table7 continued

Food security status	**food secure house hold**	**203(30.7%)**	**261(39.5%)**	**3.053(2.062-4.521)**	**1.706(0.974- 2.988)**
	food insecure house hold	40(6.1%)	157(23.8%)	1	1
Frequency of PNC	one times	51(8.4%)	39(6.4%)	1.633 (.990-2.692	Na
	two times	74(12.2%)	47(7.8%)	1.356 (.858-2.144)	Na
	three times	91(15.0%)	71(11.7%)	1.666 (1.100-2.524)	Na
	≥4times	158(26.1%)	74(12.2%)	1	
Postnatal visit	Yes	298(44.5%)	205(30.6%)	2.184 (1.468-3.250)	Na
	No	127(19.0%)	40(6.0%)	1	
Frequency of community conversation	one times	139(20.7%)	31(4.6%)	.074 (.007-.739)	Na
	two times	285(42.5%)	211(31.5%)	0.247 (.025-2.389)	
	three times	1(0.1%)	3(0.4%)	1	
Child age	6-11	164(24.5%)	103(15.4%)	1.003 (0.677-1.485)	Na
	12-17	154(23.0%)	75(11.2%)	0.778 (0.515-1.174)	
	18-23	107(16.0%)	67(10.0%)	1	

* =P-value(<0.05)

**=P-value(<0.01)

COR crude odds ratio, AOR adjusted odds ratio, MDD minimum dietary diversity,

NaVariables in the model not reached final step

5.5. Factors associated with dietary diversity practices of children aged 6–23 months

Factors associated with dietary diversity practices of children aged 6–23 months: bivariate and multivariate analyses (Table 7). Variables having P-value less than 0.25 in bi-variate analyses were re-entered in to multi variable logistic regression to control for possible potential confounders. These variables were mother's age, total number of children, main occupation of mothers, house hold food security status, husband education, mothers perception to baby body size, information on breast feeding, frequency of participation on community conversation, family size, child age, place of delivery and maternal ANC, PNC follow-up. From total entered variables only, husband education, mother's perception to baby body size, Mothers having information on breast feeding,total number of children were found to be associated with dietary diversity while the rest variables were not associated or lost association after controlling for potential confounders though associated in bivariate analyses. variable showing association was husband education status, those households' education secondary level(9-12)were six times more likely to practice dietary diversity than counterpart (AOR = 6.17, 95 % CI: 1.51–25.18). information on breast feeding was strongly associated with dietary diversity, mothers who has information on breast feeding more likely practice dietary diversity than mothers who has no information (AOR=3.59,95%CI:1.15-11.18) .mother perception to baby body size was associated with dietary diversity, mothers perception to small two times more likely practice dietary diversity than mother perception to big baby body size(AOR=1.90(95%CI :1.26-2.88), Finally ,total number of children was strongly associated with dietary diversity ,mothers who have 3-4 children practice nearly two times more likely than counterpart(AOR=1.98(95%CI:1.12-3.48).

Table8 bi-variate and multivariate logistic regression output on factors associated with minimum mean frequency practice among mothers of children 6-23 month, west badewacho district Ethiopia, 2017

Characteristics	categories	minimum mean frequency		COR(95%CI)	AOR(95% CI)
		MET MMF	NO MET MMF		
Birth interval	no previous birth	193(31 %)	92(15.2%)	1.701(1.116-2.592)	1.807(1.044-3.127)**
	less than 24 month	102(16.9)	84(13.9%)	0.985(.630-1.539)	1.049(.586-1.880)
	more or equal to 24 month	74(12.2%)	60(9.9%)	1	1
Frequency of breast feeding	less than 8 time	84(14.4%)	9(1.5%)	8.046(3.367-19.225)	2.880(1.006-8.250)**
	8-12time	256(43. %)	182(31.1)	1.213(.687-2.139)	.954(.519-1.754)
	greater than 12 time	29(5.0%)	25(4.3%)	1	1
Postnatal follow up	Yes	271(44. %)	231(38.2)	.060(.024-.150)	.70(0.02-0.230)*
	No	98(16.2%)	5(0.8%)	1	1
Wealth index	Rich	125(20 %)	59(9.8%)	1.447(.992-2.112)	1.899(1.185-3.045)**
	Medium	40(6.6%)	39(6.5%)	.055(.429-1.145)	1.141(.648-2.011)
	Poor	202(33. %)	138(22.9)	1	1
GMP in CBN	Yes	300(49 %)	225(37.2)	0.213(0.110-.411)	0.365(0.142-0.937)*
	No	69(11.4%)	11(1.8%)	1	
Sex of child	Male	206(34.0%)	110(18.2%)	0.691 (.498_.959)	Na
	Female	163(26.9%)	126(20.8%)	1	Na

Information on breast feeding	Yes	343(51.2%)	236(35.2%)	0.198 (.083-.472)	Na
	No	82(12.2%)	9(1.3%)		
Birth order	first borne	48(7.2%)	39(5.8%)	1.099 (.670-1.803)	Na
	2nd -4th	121(18.1%)	56(8.4%)	1.497 (.998-2.245)	Na
	5th or more	256(38.2%)	150(22.4%)	1	Na
Total number of children	1-2	153(22.8%)	90(13.4%)	0.717 (.468-1.097)	Na
	3-4	143(21.3%)	118(17.6%)	1.062 (.686-1.646)	Na
	greater or equal to 5	129(19.3%)	37(5.5%)	1	Na
Growing crops	Yes	407(60.7%)	235(35.1%)	0.701 (.429-1.145)	Na
	No	18(1.7%)	10(1.5%)	1	

* =P-value (<0.05)**=P-value (<0.01)

COR crude odds ratio, AOR adjusted odds ratio, MMF minimum meal frequency

Na Variables in the model not reached final step

5.6. Factors associated with minimum meal frequency of children aged 6–23 months

Table 8: shows factors associated with minimum meal frequency of children aged 6–23 months: bivariate and multivariate analyses. Variables having P-value less than 0.25 in bi-variate analyses were re-entered in to multi variable logistic regression to control for possible potential confounders. These variables were sex of child, growing crops , ANC follow-up ,PNC follow-up ,information about breast feeding , birth interval, birth order, unit of agricultural land , total number of children , frequency of breast feeding ,wealth index, growth monitoring from total entered variables only birth interval ,frequency breast feeding, wealth index ,PNC follow up ,growth monitoring participation were found to be associated with minimum meal frequency while the rest variables were not associated or lost association after controlling for potential confounders though associated in bivariate analyses. birth interval found to significantly associated with minimum meal frequency practices, those mothers who were no previous birth were more likely practice minimum meal frequency practices than counterpart(AOR=1.81,95%CI:1.04-3.13), Another predictor's variable showing association was wealth index high wealth index family were more likely to practice minimum meal frequency than counterpart . frequency of breast feeding was associated with minimum meal frequency, mothers who breast fed less than 8 times were more likely practice minimum meal frequency than counterpart (AOR=2.88, 95%CI: 1.01-8.25) .GMP was associated with dietary diversity, mothers who follow GMP were 64% less likely practice minimum meal frequency than mothers who not (AOR =0.37, 95%CI: 0.14-0.94) .finally PNC follow-up was associated with

minimum meal frequency. Mothers who were PNC follow-up were 30% less likely practice minimum meal frequency than mothers who not follow PNC (AOR=.70, 95%CI: 0.02-.23).

Table 9:A bi-variate and multivariate logistic regression output on factors associated timely introduction of solid, semi solid and foods practice among mothers of children 6-23 month, West Badewacho district Ethiopia, 2017

Characteristics	categories	Timely introduction of solid, semi solid and soft foods		COR(95%CI)	AOR(95% CI)
		MET TICF	NOT MET TICF		
Wealth index	Rich	44(34.6%)	179(26.8%)	2.164(1.343-3.488)	2.140(1.307-3.505)**
	Medium	23(18.1%)	70(10.5%)	2.893(1.614-5.187)	2.644(1.433-4.880)
	Poor	36(28.3%)	317(47.4%)	1	1
Frequency of breast feeding	less than 8 time	7(5.5%)	95(14.9%)	.589(1.88-1.851)	.779(0.241-2.524)
	8-12time	89(70.8%)	392(61.5%)	1.816(.754-4.376)	1.777(0.724-4.363)
	greater than 12 time	6(4.8)	48(7.5%)	1	1
No of under 5year children		97(76.3%)	24(18.8%)	0.144(0.043-0.482)	0.130(.031-.542)**
	1-2 children				
	3 and more children	6(4.7%)	5(0.7)	1	1
Mothers education	Illiterate	109(16.2%)	26(3.9%)	.358 (.057-2.252)	0.493(0.076-3.216)
	read and write	104(15.5%)	23(3.4%)	.128 (.019-.859)	0.191(0.027-1.356)

	primary level(1-8)	305(45.5%)	58(8.6%)	.274 (.045-1.675)	0.500(0.077-2.249)
	secondary level(9-12)	29(4.3%)	12(1.8%)	.422 (.061-2.924)	0.652(0.089-4.760)
	college level and above	3(0.4%)	2(0.3%)	1	1
ANC	Yes	530(79.0%)	116(17.3%)	0.560(0.218-1.436)	Na
	No	20(3.0%)	5(0.7%)	1	
PNC	Yes	425(63.3%)	78(11.6%)	0.828(0.517-1.323)	Na
	No	125(18.6%)	43(6.4%)	1	
GMP participation	Yes	342(51.0%)	239(35.7%)	1.712(0.830-3.530)	Na
	No	83(12.4%)	6(0.9%)	1	

*** =P-value(<0.05)**=P-value(<0.01)**

COR crude odds ratio, AOR adjusted odds ratio, TICF Timely introduction of solid, semi solid and soft foods.

NaVariables in the model not reached final step

5.7: Factors associated with introduction of complementary feeding practice children aged 6–23 months Bi -variate and multivariable analyses.

Table 9: shows factors associated with introduction of complementary feeding practice children aged 6–23 months: a bivariate and multivariate analyses. Variables having P-value less than 0.25 in bi-variate analyses were re-entered in to multi variable logistic regression to control for possible potential confounders. These variables were mothers education, ANC follow up, frequency of PNC, GMP participation, wealth index, birth order, number of under- 5 year children, and frequency of breast feeding. from total entered variables only wealth indexand number of under- 5year children, were found to be associated with timely introduction of complementary feeding practice while the rest variables were not associated or lost association after controlling for potential confounders though associated in bi-variate analyses. Wealth index was significantly associated with timely introduction of complementary feeding practice. Those mothers who were high wealth index weretwo times more likely to practice timely introduction of complementary feeding practice than counterpart (AOR = 2.14, 95 % CI: 1.31-3.51) .Another predictor's variable showing association was number of under- 5year children, mothers who have 1-2 number of children were

90% less likely practicetimely introduction of complementary feeding practice than counterpart (AOR=0.11, 95%CI: 0.03-0.50).

CHAPTER 6: Discussion

The proportions of children who were introduced complementary foods and received adiet full filling the criteria for minimum dietary diversity, meal fresuency and acceptanle diet were 81.1%, 36.6% 61% and 19.8% respectively.

Adequate and safe complementary foods introduction promote growth and good nutritional status of young children. In the current study about 81% of mothers timely introduce complementary feeding 6-8 months of age of their child was higher than studies reported in southern Ethiopia (72.5%)[27] and more than three-forth prevalence we detected is higher than the national prevalence (51 %) [22]. This figure is still higher than to WHO recommendation of more than 80 % of 6–8 months children should initiate complementary feeding at 6 months of age[26].and also, current findings of the right time of introduction of complementary feeding is better than other similar studies conducted elsewhere [13, 16, 27-32]Health care access such as antenatal care, postnatal care and institutional delivery were better in the current study area so that better awareness and practices on correct time of complementary feeding introduction compared with other studies could be the reasons for the discrepancy, but lower than study finding in sir lank (84%)[33]Nigeria(85.4%) [34] Tanzania (92.3%) [35].The discrepancy could be factors associated with appropriate complementary feeding practice in this study,number of under- 5year children shows strong association that mothers who have 1-2 children are two times more likely to practice optimal complementary feeding compared with those mothers who have more children. Also this discrepancy between could be mothers' perception, and awareness on what and when to start supplementary foods to child and their view that the child is incapable to absorb foods in this age.

This study also showed that 61.0% of children received minimum meal frequency. This finding was higher compared to study done dangle,Ethiopia(50.4%)[16],Tanzania38.6%)[35]Nigeria(36.6%)[34],northernGhana(58,2%)[13],Delhi,india(48.6%)[36], the higher figure observed in our study may be due to current development of health army and increased accessibility of health facility which in turn increases maternal contact to health care workers that focused on antenatal, postnatal and child care education so that increases their optimal complementary feeding practices.

However, this finding is lower to studies conducted in Oromia, Ethiopia (67.3)[27] Nepal (82%) [30]Sri Lanka (88.3 %)[33], Bangladesh (81 %),[29] Nepal (82 %)[30]Pakistan (88%),[32] This discrepancy could be as a consequence of social, educational and cultural differences existed between in this study and others. Besides when we compare to the National figure (51 %) EDHS, 2011, higher minimum feeding frequency figure observed in this study could be anationally representative analysis with a large range of child feeding styles in different regions of Ethiopia.

Furthermore, Children aged 6 - 23 months who met the requirements for minimum dietary diversity in the previous day was very few (36.6%). This finding is similar in five South Asia counters, the dietary diversity was reported was less than 50% in all countries except Sri Lanka 71.1%[37]. The current study finding is lower than report in Tanzania, 38.0% of children age received minimum dietary diversity[35]. In Western Uganda 49% of 6 - 23months children complemented [38]. The study finding also high when compared to EDHS 2011 (minimum dietary diversity 10.8% [22]. In this study one of the key finding is that complementary foods given to most children are mainly made from grains, roots and tubers (73.2%) which have low nutrient density. This dietary diversity pattern finding was in line with reported in previous studies conducted in

Tanzania[35],which have comparatively low nutrient density. Proportion of children who were given food made of flesh foods (1.5%), eggs (52.2%) vitamin A rich foods (33.2%). Legumes and nuts (57.8%),Diary products(50.5%) and any other fruits and vegetable(27.6).consumption of animal origins foods was similar with India, found to be poor especially for poultry and fish during the past 24 hours [31].EDHS 2011,reveal that foods made from grains (66%) are consumed more frequently than foods from other food group (only 15% consumed fruits and vegetables rich in vitamin A,5% of children consumed meat and 8% consumed eggs) [22] This is discrepancy may be due to lack of affordability of these foods or inadequate knowledge of mothers' about the importance of diversity feeding of young children or could be associated with household food security.

The prevalence of children received with minimum acceptable diet achieved for this study is low. As the minimum acceptable diet takes both minimum dietary diversity andminimum meal frequency in to account (WHO, 2010), only 19.8% of thechildren achieved the minimum acceptable diet (MAD). however, this finding is higher to similar studies conducted in north West Ethiopia[16], national prevalence (4.2 %) report of EDHS, 2011 [22]. higher findings observed in our study could be educational differences in that relatively lower illiteracyrate observed in this study However ,low compared with finding in Bangladesh 39.6%[29],Nepal 31.8%[30],serilank 67.9%[33].This might be associated with poor socioeconomic status observed in the current study compared from above south Asian counters.Among variables moved to the final model in this study husband education, mother perception to baby body size, information on breast feeding ,total number of children, birth interval, frequency of breast feeding postnatal follow –up, growth monitoring ,wealth index and number of under-5 year children were found to be statistically associated with complementary feeding practices. households' education secondary level(9-12),mother perception to small baby body size, were more likely to practice dietary diversity The finding was supported by report from Bangladesh and NairobiKenya.[11, 25] Mothers from rich household and mothers who follow postnatal care were more likely met the recommended meal frequency, this finding is in line with study in Bangladesh[11]The results of this study highlight the need for nutrition interventions to improve optimal complementary feeding practice.

Finally, this study had its own strength and limitation. Even if great efforts were made to assure the quality of the study starting from the stage of pre data collection to write-up of the report. Reliability of the tool was checked and appropriate statistical test was performed for different model assumptions. The study had remarkable limitations. The study used only 24-h recall method which tells us only one time happening but did not make obvious dietary habit of the participants and pretentious by variation of days. Finally did not show the relationship of these feeding practices to nutritional status of children therefore aneed to conduct a further follow up study to validate our findings.

CHAPTER7: Conclusions

The study revealed that the proportion of children who meet the suggested level of timely introduction of complementary feeding,minimum meal frequency ,minimum dietary diversity, milk feeding for non-breast fed child and acceptable diet were 81.1%,61%, 36.6% ,20% and 19.8%%, respectively. As compared to the national figures these are good achievements. But not guarantee to good health and improved nutritional status of children and to achieve SDGs. The result showed maximum

percentageof mothers were not practice dietary diversity and two milk feeding for non breast feed child and low proportion of minimum meal frequency .Information on breast feeding, mothers perception to baby body size, total number of children were significantly associated with dietary diversity ,wealth index and number of under- 5 year children were significantly associated with timely introduction of complementary feeding and birth interval, frequency of breast feeding and wealth index postnatal follow-up and growth monitoring were significantly associated with meal frequency.

CHAPTER 8: Recommendations

Advance, attention should focus on improving house hold food security status, husband education, mothers perception on baby body size, distribution of information, education and communication (IEC) materials such as leaflets and brochures about complementary feeding target mothers, these materials should be available in all health facilities for easy accessibility for target mothers, Also the distribution of the IEC materials center communities to reach mothers who are not attending the antenatal/post-natal clinics. In addition to distribution of IEC materials, community peer counseling (participation of community conversation) on optimal complementary practice

In addition, longitudinal studies also needed to carefully land bridge on optimal complementary feeding practice from 6-23 months of age and causalconnection these practices with individual child.

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Annex

QUESTIONNAIRES

JIMMA UNIVERSITY

COLLEGE OF PUBLIC HEALTH

QUESTIONNAIRES FOR ASSESSING OPTIMAL COMPLEMENTARY FEEDING PRACTICES OF MONTHER AND ASSOCIATED FACTORS IN WEST BADEWACHO DISTRICT, HADIY ZONE, SOUTH ETHIOPIA.

POST-GRADUATE IN HUMAN NUTRITION (MSC)

Study Title: Read for the study participants

Introduction and Purpose of the study

Consent Form

My name is _____I am interviewing mothers who have child 6 up to 23 month age to assess the practice of optimal complementary feeding. The objective of this study is to assess optimal complementary feeding practices among mothers. I am going to ask you some questions that are very important for the programmer's in optimal child feeding service to plan improved intervention. Your name will not be written in this form and the information you give is kept confidential. If you do not want to answer, all or some of the questions you do have the right to do so. However, your willingness and support to answer all of the questions would be appreciated.

Would you participate in responding to questions in this questionnaire?

Yes_____ No_____

If No, acknowledge the respondent and proceed to the next respondent

Name---------- and signature of interviewer---------- who sought consent_____date_____ Kebele_____

House number_____Village_____

Child's Name _____mothers name_____

Child's ID Number _____ child's age months_____

Sex _____ Date of Observation <d/m/year> ____/____/___/

Mother’s age at first birth in years----------

Mother’s age in year at the birth of index child? ----------

GENERAL INSTRUCTIONS (asking questions and recording answers)

All questions in this paper are based upon maternal recall. It is very important that you ask each question exactly as it is written on the questionnaires. In addition to the questions, the rare statements that are appear in all bolded capital letters, indicating that they are interviewer instructions and should not be read aloud to the mother.

Part One: Socio-demographic characteristics		
S.N^{o}	Socio-demographic variables.	Response format
Q101	Age of mother **(completed in years)**	Age in years _____
Q102	Number of member of persons living in the house hold	----------
Q103	Religion	Protestant….1 Orthodox…..2 Muslim…..3 Catholic…4 Others (specify).....
Q104	Ethnicity	Hadiya……..1kambeta……2 Amhara…….3 gurage……4 Wolaita …….5
Q105	Marital status	Married….1 Single…2 Divorced.3 Widowed---. 4
Q106	What is the highest grade you completed?	Illiterate_____1 Read and write_____ 2 Primary level(1-6)_____ 3 Secondary level(9-
Q107	Current occupational status?	Farmer……..1, Government employee……2 Non-governmental employee…..3, Private sector_____4 Business women_____ 5, House wife_____6 Daily laborer_____ 7 House maid _____8 Student_____9 Other(Specify)_____

Q108	What is your husband's educational status? **ONLY IF HER RESPONSE FOR Q 104 IS MARRIED**	Illiterate_____ 1,Read and write_____ 2 Primary level(1-8)_____ 3, Secondary level(9-12)_____ 4 Collage level and above_____5
Q109	Who is the head of the household?	1.Yourself /mothers 2.Husband 3.Uncle/Aunt 4.Grandparent 5.Other(specify)
Q110	The main occupation of head of household?	1. Farming (owner-operated) 2. Agricultural laborer 3. Non agricultural laborer 4. Self-employed non farming 5. Paid employment non farming 6.Unemployed not working 7.Other(Specify
Q111	What is the main source of drinking water for members of your household?	River-----1, Borehole-----2 Piped water--------3, Protected spring-----4 Unprotected spring--5 Protected dug well----6, Unprotected dug well--- 7 Other(specify)--
Q112	Do your household have toilet facility	No--------0 Yes------1
Q113	If yes, what kind of toilet facility	Pit latrine with slab ---1, Pit latrine without slab---2 VIP latrine---3

Q114	Does any member of this household own any agricultural	YES . . . . . 1 NO 2	If NO skip to Q118

Q115	How many (LOCALUNITS)of agricultural land do members of this household own?	LOCAL UNITS number---------- DON'T KNOW---------- --	
Q116	If yes for Q≠114, Do you grow any crops on your land?	1. Yes 2. No	If NO skip to Q118
Q117	If yes for Q≠30 which of the following crops do you grow?	1. Sweet potatoes 2.vegetables 3.coffee 4.chat 5.maize 6.inset 7. bean	
Q118	Who decides how the money you earn will be used?	1.Mainly husband 2.only husband3.both jointly 4.only me	

Part Two. Maternity characteristics		
S.N^{o}	**Questions and filters**	**Response coding categories**
	Now I would like to ask you some questions about your maternity experiences.	
Q201	How many children of age below 59 months do you have now?	Number of children _____
Q202	How many children of age 6 months to 23months do you have now?	Number of children _____
	IF THERE IS ONLY ONE CHILD, ASK MOTHER THE FOLLOWING QUESTIONS ABOUT (NAME OF CHILD). IF MORE THAN ONE CHILD, SELECT ONE CHILD	
Q203	If more than one child, What was birth interval b/n **[NAME]**?	No previous birth---1 ----2 less than 24month---3 more or equal to 24 month

Q204	Birth date of **[NAME]** **USE IMMUNIZATION CARD TO OBTAIN BIRTH DATE, IF NO IMMUNIZATION CARD, WRITE THE DATE GIVEN BY THE MOTHER. IF THE ACTUAL DATE OF BIRTH IS UNKNOWN, GUIDE THE**	Birth date_____	
Q205	Sex of [NAME]	Male_____1 Female_____ 2	
Q206	Have you attended Antenatal clinic in any health facility while you were at pregnancy of **[NAME]?**	Yes_____1 No_____ 2	If noskip toQ208
Q207	If yes Q 213, how many times have you attended ant natal clinic	One time---1 Two times-----2 Three times-----3 Four and above times 4	
Q20	Birth order of child	_____th	
	Total number of children ever born?	In number_____	
Q209	Place of delivery	1. Home 2. Health post 3.Healthcenter 4.Other (specify)___	
Q21	How did you deliver?	1. Normal delivery 2. Caesarean	
Q211	Who helped you during delivery?	1. Traditional Birth Attendants (TBA) 2. Health Extension Worker (HEW) 3. Nurses 4. Parents 5. Other (specify)_____	

Q212	Was your child weighed at birth?	1. Yes 2. No	If no skip toQ204
Q21	If yes to Q≠6 What was your child's birth weight?	____in kg	
Q21	Mothers perceived baby body size	1. Small 2. Big	
Q215	Was (***NAME***) breastfed yesterday during the day or at night?	1. Yes 2. No	If no skip toQ204
Q216	If yes for ≠9, How many times did you breastfeed last night between Sunset and sunrise? If yes for ≠9, How many times did you breastfeed yesterday during the daylight hours?	night time.----------times Daylight time ---------- times	
Q21	Up to what age do you intend to breastfeed	_____months	
Q218	How long after birth did you first put to the breast?	1.Immediately/within the first one hour after birth 2.After first hour 3.After 2-6 hours 4.After 7-12 hours 5.After more than one day6.Don't remembers/don't	
Q219	Is anyone told to put the baby on complementary food at six month?	1. Yes 2. No 3. Can't remember	

Q220	If yes for Q≠219, from whom did you hear this message?	**Sources of the key message** yes --1 no--2 1.HealthWorker……1 2 2.Health Extension Worker……..….1 2 3.Community Health Promoter…....1 2 4.Family/friend…….……..1 2 5.Radio/TV…….……..…….1 2	
Q221	Following [NAME] delivery, have you attended postnatal clinic in any health facility?	Yes_____1 No_____ 2	
Q222	If yes Q 221, how many times have you attended postnatal clinic	One time---1 Two times-----2 Three times-----3 Four and above times 4	
`Q223	Have you ever been informed/advised about breastfeeding while you were at pregnancy of	Y----------1 No……2 Don't know……99	
Q224	Have you ever been informed/advised about complementary feeding while you were at pregnancy of [NAME] or in the period after delivery of [NAME]?	Yes……1 No……..2 Don't know……99	
Q224.1	Ever started complementary foods	1 yes 2 no	

Q22 5	If yes for Q22.4.1 when you start complementary feeding?	1. Less than six month .2. 6-8month 3 greater than 8month.
Q22 6	How many times did (NAME) eat solid, semi-solid, or soft foods other than liquids yesterday	-------times
Q22 6.1	In the last 24 hours, did you wash your hands **with soap/ash** before preparing the above food	1.yes 2.No
Q22 7	In the last 24 hours, did you wash your hands **with soap/ash** before feeding	1.yes 2.No

Part Three; questionnaires to assess the consumption of iron-rich or iron-fortified foods; indicate with a checkmark (√)

Food item	Checkmark if child had	Food item	Checkmark if child had
Teff		Beans/ broad bean	
Sorghum		Lentils	
Maize		Chickpeas	
Wheat		Haricot beans	
Barley		Orang	
Pumpkin		Banana	
Tomato		Mango	
Potatoes		Milk	
Beetroot		Cheese	
Cabbage/kale		Butters	
Guava		Whey	
Avakado		Yogurt	
Carrot		Chicken	

Lettuce		Eggs	
Sweet potatoes		Fish	
Ensete		Beef	

PART Four

	INFORMATION ON CBN	
	Did you bring your child health post for GMP last three months?_____	1 yes 2 no
B 37	How was the frequency of weighing in the last three months?	1. One times 2. Two times 3. Three times
B 38	How many times did you participate in community conversation in the last three months?	1. One times 2. Two times 3. Three times
B 39	Does your child have family health card?	1. Yes 2. No
B 42	Do you have received nutritional	1. Yes 2.No

Part Five Information pertaining to household wealth

Now I will ask you some questions and observe about your drinking water source, wealth and condition of sanitary facility

Household wealth			
900	Does your household have electricity?	Yes…….1 No……..2	
901	A mobile telephone?	Yes……1 No...……2	
902	A bed with cotton/sponge/spring mattress	Yes……1 No...……2	
903	Chair	Yes……1 No...……2	
904	Sofa	Yes……1 No...……2	
	Table	Yes……1 No...……2	
904	Television/ Functioning Flat screen Television	Yes……1 No...……2	
905	Radio/Functioning CD player/IPod/G-bass	Yes……1 No...……2	
906	Refrigerator(fridge)	Yes……1 No...……2	
907	Gas Stove/Cylinder	Yes……1 No...……2	
908	Electric stove	Yes……1 No...……2	
909	Washing machine	Yes……1 No...……2	
910	Chest drawer/ biffe/ comadienno	Yes……1 No...……2	
911	Bicycle	Yes……1 No...……2	
912	Motor Cycle/Bajaj	Yes……1 No...……2	

913	Video camera/ Digital Camera	Yes……1 No...……2	
914	Cart/Gari	Yes……1 No...……2	
915	Car	Yes……1 No...……2	
916	Does any member of this household have a bank or microfinance saving account?	Yes……1 No...……2	
917	What is the main source of drinking water for members of your household?	Piped inside dwelling/compound...1 Public tap.....2 Protected well/spring .....3 Unprotected well/spring.....4 Protected well .....5 Unprotected well .....6 Pond/River/stream/spring…9 No fixed facility .....7 Other (specify) 8	
918	What type of fuel does your household mainly use for cooking?	Wood…..1 Other……2	
919	What kind of toilet facility does your household have?	Local pit latrine .....1 VIP latrine.....2 No facility/bush/field.....3 Other specify…….4	
920	Do you share this toilet facility with other	Yes……1 No...……2	

	households?		
921	main construction material used for the floor:	Natural floor earth /sand/ dung .....1 Other 2	
922	What is main construction material used for the roof?	Natural (roofing/no roof) .....1 thatch/leaf/mud .....2 cardboard/cheap wood/corrugated iron.....3	
923	main construction material used in exterior walls:	wood with mud .....1 cement with blockers .....2 stone with lime/cement .....3 Traditional/ grass……4 other (specify) 5	
924	Will you please describe your family's household living structure?	rent.....1 own .....2 other....3	
925	Does the household own any Livestock, herds, other farm animals, or poultry?	yes.....1 No 2	If no, 927
926	How many of the following animals do you keep? **(Interviewer: if household does not own a particular item, record "00" against that item.)**	a) milk cows, heifer, oxen or bulls _ b) Chickens..... c) Goats..... d) Sheep..... e) Horses, donkey, or mule.....	

		g) Beehives.....	
927	Does any member of this household own any agricultural land?	Yes ……...1 No …….2	
928	How many (local units) of agricultural land do members of this household own? **local units:- hectare (100m*100m)**	_____local unit	

Part Sixe Questioners to assess household Food security

No	Question	Response options
1	Have you or your HH been involved in any food security program in the woreda?	1. Yes 2. No
2	If yes for Q N^{o}1In which of the following food security programs has your HH been involved?	1.Productive saftynet package programe 2.Enhanced out reach strategy for under 5 3.relief 4.Income generation activities
3	How long does your food store usually last after harvest?	1.Less than two months2.Two to four months 3.Five to eight months4.Nine to twelve months
4	Where has this week's food come from?	1.Garden 2.Purchased 3.Wages in kind after working 4.Other(specify)
5	How long does your food store usually last after harvest?	1.Less than two months 2.Two to four months 3.Five to eight months4.Nine to twelve months

No	Question(HFIAS)	Response options
	In the past four weeks, did you worry that your household would not have enough	0 = No (skip to Q2) 1=Yes
1.a	How often did this happen?	1=Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past
2	In the past four weeks, were you or any household	0 = No (skip to Q3) 1=Yes
2.a	How often did this happen?	1=Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks)
3	In the past four weeks, did you or any household member have to eat a limited variety of	0 = No (skip to Q4) 1=Yes
3.a		1=Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks)

	How often did this happen?	3 = Often (more than ten times in the past four weeks)
4	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	0 = No (skip to Q5) 1=Yes
4.a	How often did this happen?	1=Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past
5	In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	0 = No (skip to Q6) 1=Yes

5.a	How often did this happen?	1=Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times
6	In the past four weeks, did you or any other household member have to eat fewer meals	0 = No (skip to Q7) 1=Yes
6.a	How often did this happen?	1=Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)
7	In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	0 = No (skip to Q8) 1=Yes
7.a	How often did this happen?	1=Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past

8	In the past four weeks, did you or any household Member goes to sleep at night hungry because there was not enough food?	0 = No (skip to Q9) 1=Yes
8.a	How often did this happen?	1=Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks)
9	In the past four weeks, did you or any household member go a whole day and night without	0 = No (questionnaire is finished) 1=Yes
9.a	How often did this happen?	1=Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)

Part seven (7): Read the Questions beLow. read the List of LiQuids one by one and mark yes or no, accordingly. after you have completed the list, continue by asking Question (see far right hand column) for those items (10b, 10c, and/or 10f) where the respondent repLied 'yes'.

No	QuestIons and fIlters	codIng categories				QuestIons and codIng categorIes
Q10	next I would like to ask you about some liquids that ***(NAME)*** may have had yesterday during the day or at night. did ***(NAME)*** have any ***(itEM froM List)***?: *read the List of LiQuids starting with 'pLain water'.* yes no dK 11 how many times yesterday during the day or at night did ***(NAME)*** consume any ***(itEM froM List)***?: *read Question 11 for items b, c, and f if chiLd consumed the ite*		Yes	no	dK	Q11 how many times yesterday during the day or at night did ***(NAME)*** consume any ***(itEM froM List)***?: *read Question 11 for items b, c, and f if chiLd consumed the item.* *record '98' for don't know*

A	Plain water?	A--------	1	2	8	
B	Infant formula such as [**insert local examples**]?	B---------	1	2	8	B. times |___|___|
C	Milk such as tinned, powdered, or fresh animal milk?	C-------	1	2	8	C. times |___|___
D	Juice or juice drinks?	D-------	1	2	8	
E	clear broth?	E-------	1	2	8	
F	yogurt?	F-------	1	2	8	F. times |___|___|
G	thin porridge?	G-------	1	2	8	
H	any other liquids such as [**list other waterbased liquids available in the local setting**]?	H-------	1	2	8	
J	Any other liquids?	J-------	1	2	8	

Part eight (8): Dietary diversity question

Now I would like to ask you about the types of foods ate yesterday during the day and at night.

Did(Name) eat any of the following foods yesterday during the day or night?

READ THE LIST OF FOODS. PLACE A CHECK MARK IN THE BOX IF CHILD ATE THE FOOD IN QUESTION

		Responses	
		yes	No
1	Porridge items : -porridge or gruel prepared from cereal grain (e.g. made with maize, sorghum, millet, wheat, barley, teff?	1	0
	Corn bread?	1	0
	Inset foods (specify kotcho and bulla)?	1	0
	Enjera prepared from cereals specify cereals	1	0
	Any other food made from roots or tubers other than inset. For example, white potatoes, white yams, cassava, Boyna;	1	0
2	Any foods made from beans (for example kidney beans, Haricot beans, Field peas, cowpeas, chick peas or others?	1	0
	Any groundnuts/peanuts, or any nuts?	1	0

3	Any milke, cheese or yogurt, butters?	1	0
4	Any beef, pork, lamb, goat, rabbit?	1	0
	Any fresh or dried fish?	1	0
5	Any eggs?	1	0
6	Carrots ፧ Ripe mango pumpkin Ripe papaya, sweet potatoes	1	0
7	Any other fruits and vegetables (for example, cassava leaves, kale, or other dark green leaves,Avacado)?	1	0
8	Any others specify ----------	1	0

END OF INTERVIEW THANK YOU FOR YOUR TIME

Questionare – Local language

Jimma –univereste`e

Minaqaphph fayyooma

-ku xa`mmichchi lorior iraa lasamukki sawwite wo`mm iraakkoo ichchi seera (10saro) fuullishshi baxo saarayyimmira agannekkaa him caakkoo fintammi sawwife Eellinchi fill Baadawwaa chclonre issimminate (Itophphe`e)

Kaia sagenne maasseamoo manchi beetichchi sono`o (seera)(MISC) kalosan horoor woshshi:-Anga ejjii (hara mato) issoo keen bikkina soroobimminatte caakkishshaa odim losan maramato

Iitti caakkishshi Awwonsa

I summi _____ an xa`mmichcha issoomokki amo`oo eiillwwaa loh(6) liinchii kiisaaa lamiyyii sas(23) hiinchi umuri ateebe`e yoo keem`na wo`mm ilaakkoo te`im makki ichcli seera saarayyimminatte ka saarayyikk horoor sawweeiti wimmii laakkoo amo`I iclchi seera tookkisi mminatte. Kannii ki`ukkaa nniinse qni keese mat sawwite xa`m meenatte.

Qohim araqiinse hasamoohane ihaakkoo makki ciilluwwi ichchi awwaaxxi bimmina gudoo haarechch haramatina awwaadonatte. Ki summi ka chartanne horiyyem kitaaba mooyyo odim at uwwititti sawwiti hada`ll isa( yabo) uwwakko at dabachcha uw witeena hassi bee`lase te`im hoffi qaxi baxome baxxeena hasilaseense faaxxu illisa (danaamisa baxa) woshshi ihukkaa rem` ki wo`m hasaninne odim haramatinne dabachcha (sawwite uwwitooisa liiramjoolani hookko.

Ka ya`mmichchuwwina dabachcha uwwiteena ansa edoo honihe?

Oiyya_____ uwweena (arga) edeena lasoomouu_____

Ayyi la`ukko anga edoomoyyo yitoolase dabachcha uwwoo manchi wo`m caakkishshaa o dim awwo nnoo sawwite uwweena xanoo manchi kollomare

Summi Balaynashi marqas odim furmma ya`mammaa nchika_____ ixxo moo`e

Ixxi eeyyite(iitoo)_____ Balla 20/07/09 kebele wobara

M`n xigo 030 Gooxa 03

Ciillichchi summi Erafte arqos ami summi Balaynash marqos

Ciilluwwi arrarni mare`e (xigo_____ ciillu wwi umura _____ liincho 11-liircho

Albachchi landiclchotte lasee samukki balla cd/m /maarge

-Amoi umuri luxxi hiinchonne(21)

-Amii umuri ee marrq`eki qaramchi hiinchi akk eekan ciilluwwi

Lullei Awwons xa`moo xa`mmicacha. Odim dabachcha inkkiilimma.

Iika worqotanne kitaabamukki xa`mmich chuwwi hundim shootoi issukkok amoi tisiisoo hone kuat xa`mmitti xa`mmichchuwwi hundim yooii sam kitaabamukkok uwwamukki xa`mmichchi insette ka xa`mmi chchi haneennee makkiihukki beei`luwwi hundem xuunsammi wocim kitaabamukkoki lob (laakki) iraakkoo fidalli wwinnette ihimma.kuki caakkiisookkokiku xaimaanni awwonsuwwi eehidem sagara imm aa`ubeeiane amo`ina(caakku beeone).

Awwonsi matoi- socio-demogrophei haalato		
S.xigo	Socio –demograleii qrnanattuwwa	Qabacheei charta (formmaata
Xa`mmichchi 101	Amiumra (beedukki maraguwwa)	Hiinuuwwi umura
Xa`mmichchi 102	Mat minenre siidamoo (lee`oo) oboroor xigo	
103	Amanati	Amanaano 1 ortdoqisa 2 Isilam 3. Catholica 4. Annanna(
104	Zara(Gichao)	Hadiyya _____ 1kambaata--2 Amaara uragee --3 Wolaamo___ 4Mullane ___5
105	Lsano Gabala	Mine issakko ___ 1 issubeeiore ___2 mineissaa ___ 3 ammichaa tiraakkoolne te`imomicholetoo
106	Kaba yookki bax duulaii raha ?	Losubee`one _____ 1Qananaimmaa kitaabima _____2 luxxgabala(1-6) lam gobala(9-12) 3- colleggi gobala hananne--4
107	Kimin anni bobangabal maha ? xammichchi 104 kisaa yookkoka dabarookkok xale`I nu`nef issu keeho	1abuullaanao- 2. adil baxaa 3. Adil baxiinse tochchi 4.gaqqi baxo – 5 qadaranchoffe- 6 mine amatte- 7.balli baxo-8.miniosseanaaasffe – losonnalosubee`one tananaaima kitoobi
108	Min horoor lakkoo awwonsaanew aye?	_balli baxo8_miniasseanaaauffe_losanaqmullare1_losubceare2_qzoobnnre3_luxxisoba(1_8)4_la'gobala(9_12)
109	Min horoor awwonsaanchi bax moha ?	1_kigagamenni/ana 2_minianna 3_anniabbaanno(eeshshina) 4_kobanna(ama)5_mulli manna

110	Kimin abaroosira muccur shum min lee`aa ?	1_abuula(gaqqi wxo boxxoohone) 2_abuulu boxoelo 3_obuuluibaxiinje toachi boxo buxoohure 4_goqqi box boxoohne
111	Ooyya yittilase hinkido`ane?	
112	Kimun aboroos lundinam ixxi gaffi abablli uulli yoo ?	Bee_____0 yookko _____1
113	Hin kaan abuuil uulli ki min oboroosina lee`aa	1-afuuchcina makki 2 afuuchchi muuf 3 VIP shunne ilookko muuf yootae beeone gudaa boxamaakkoohone beedne 5 mullore____
114	Ooyya yitti lose Xammcaai 114 kina yoo kan uullame lurdem mutaanuwwa kaasoollanine.	1. Ooyya 2. Beee (bee`e yittilase ya`mmichi118
115	Oyya yitti lose xa`mmichai 116 mon mahi mutoonnu wella afisoolla?	1. Oyya 2.kaasummo (luixummyyo)
116	Hinkaan diinate(siixxoo) siidoo yi taa sawwitoo? (hinkid awwaakitoo)? Te`lm ka abublli firoo amaxxiinse awwaaxxoo aye?	Xee`oo dinichefo 2. Duubbi kaashshaawa 3. Buna 4. Caata 5. Boqqolla 6. Weesa 7. Baaqeella
117	Omma yitti lose xammaai116 moh mahi mueoonnu weua afisoolla?	Minni ana 2- yale min anna 3- maggreminkaa 4yaleronettee
118	Hinkaan diinote(siixxoo)siidoomoo yi taa saeueui too?(hinkid aeeeulaaxitoo)?telm ka abubli froo amaxxiirse 3aeeuaaxxoo orrye?	

	Awwonsi lamoi –Amoi laalattuwwa	
S/Xigo	Xa`mmichchuwwaa eelidim binnaachdaa	Dabachcha mare`e uwwimma beyyimma
	Kaba mat xa`mmichcha xa`mmeena lasoomokki ki amoommi losano .	

XaM 201	Mee Oos umur 59 ihukkoka liquor?	Ciilluwwi xig 1
Xam 202	Umur 6-23 agana hin kaanda`e laqqoo?	Ciilluwwi xig 1
	Ayyi la`ukko matem ciiliilikki lase qwwanoo xammichcla ama xa`mme (ciilluwee summa matiinse lobanii hulaseense mat ciillichcho doolle saamo tu`atti mmi seera awwaaxximminne odim qama ee doo llititti ciillichchi bikkina xa`mme.	
203	Ayyi la`ukko matiinse lobciilluwwii hulasi qar amchi lambe`enne yookki annannaat (summa)?	La`mmeki ----------1 saxxek----------2 soolle ki----------3 ontiki odim eehamii lobok
204	Qoranchi balli summi qaranchi balla la`immina ixxi qaranchi balla fiyya`oom minicaarda awwaaxximma `ayyi la`uk ooo caardi bee`ukkilasi ama uwwita m qaranchi balla kitaabe Ayyi la`ukko hemqqii qararchi balli lamubee`lase ama qarmukkli balla tii tamisa asse oobeelaslo sam amnanni xigimmseeraawwaaxxe (yesuus qaramaa heebishshi ugudw balla) xim qaxxi uguda yesuus kichchi ugudaa m.k	Qaramchi balli
205	Qoronchi balla sawwtenne aagisimminna yoo balluwuuin be isagana sawwtenne yoo balluwwin be is agana saqaranchi balli summi issa akkaa kitaabimma Albachchi summa	Goondo _____1 landicehotte _____2qoyya_____1 Awwonumoyyo_____ 2
206	Lamfoor ikkitti ammane fayyaoom awwaado uwwoo wine seeramisinne awwontaa (summa)	Mat kures-----1 lam kore -------2 sas kure 3 soor kare odim soori koriinse hanaani
207	Ooyya yitti lase xa`mmichchi 213 qorimmiinse illage mee`aage awwontaa hee`llito ee fayya`oom awwaado	3th
208	Qoranchina uwwamukki isaai ciilina reek ore	Xiginne saso (3)
	Lullei qoramukki ciilluwwi xig ?	1- Mine 2,fayya`oom mine 3

		faayya`oom awmaado uwwmine ccinica) 4 mullbayyo
209	Qaramchi beyyi	1- Mah hawwii bee`em 2. Orachchi xiqimminne
210	Qattittiuuha`I hintidette?	1.losam guugnne qassisoo keeno (LGQ>K) f a u.b) 3. Haakkimmuwwa 4.min abar osoo muiili manaa
211	Qatoo ammane keese haramukkok aye?	
212	Ki Ciillichchi qaramu ammane guurat yoo?	

Xammich 213	Qoyya yittiiase xa`m #ki ciilluwwi guurat hinkana ?	Kilo graminne keenakkamare
Xa`w 214	Ciillichchi ama laqqanm Guuraxxi qaxoom	Geejja -2 hoffane -
215	Beeballi kiisa balla himo ama anuunaa iiccoollanihe	1.ooyya – 2 eehidoyyo .-
Xaimmichcho 216	Ooyya yittilase xammichchi # gna uulli hiimaa soodebei name kore iicoo? xa`mmiccchi # gna Beeball ballii koisaa meer kore ama anuuna iccaa ? Ayyi laukko dabachcha honqiixiginne caakkisi mmina xanamukki bee`las hinchincaakkoo xigo wwe.	5 kore Balli saata 4 kore
Xa`y 217	Hinkaanni umur afeebeina ama anuuna iiccisoo (summa)?	aganwwa
Xaimmichch218	Ciillichew qaramukki ammaniinse hin kaanni ammaneaa`oo anuuna ciilluwwina uwweeimmina ?	1-ee ammanii kiisaa mat saati afeebee yoo ammanenne. 2.mat saat afeebe`e yoo ammanenne 4. 7-12 saaxxi woronne 5 loh (6) lallu wwiine hananni 6- hindiyummoyyo

Xaimmichch223	Awwonimma awwontitti ammancnne Gnuuna iiccise mmi bikkina sogitane uwwakka lam foorminne yoonti anmane (summa) teim qatummi ammare (balli) afeebe`e (summa)	Ooyya -------1 siidummoyyo ----------2 horiyyem (la`ummoyyo ----999
Xaimmichch219	Ayyi manchim wo`m ihaakkoo hurboota loh (6) aganni woronne uwwoohonihe?	1- Ooyya 2. Eehideyyo 3. Hindiyeena xan imoyyo.
Xaimmichch220	Oiyya yitti lase ya`mmicchi # 219 ka saw wite aallitokki ayyeensette (kurukko ki oyye?	Sawwite uwwukki horoor annichchi oyyya 1eehidayyo2 1- Fayya`oom baxaano --------1 2 2- Fayya`oom Extention baxaano 1.2 3- Minaadophpi fayya`oom bikkina caakkisono 4- Min abarros/ beshichcho -------1.2 5- Raadoona /Televeziina ------1.2 6- Minaadaphphi awwonsaano ---1.2 7- Annanni ananni duuha`a -------- 8- Minaadophphi fiyyafom bikkina caakkisano
Xaimmichch221	Awwonoo (sum) Hamouwwi at ki fayyaioom bikkina laseeesitti (beyyi) luww hundim womlee`ukkonee	Ooyya---------1 siidumoyyo ----------2
Xaimmichch222	Ooyya yitti lase ya`m 221 hinkaan ammanina awwwwontaa leeillito`o haakkiim mine.	Matkore -----1 lam kore -2 saskore 3 soor koree hananni ihaakkoo ammare.

Xa`mmi chehi 224	Ki qorimmiinse illagem ihukko lamfoor ikkitti ammane wom ilaakkoo ichchi bikkina sogotoro issamfaa lee`llito nihe ?(summa)	Ooyya -----1 la`oomiyyi-----2 loriyyen la`oomiyyo-----99
225	Hinkaan ammonina (smm) Gogaal Lubaataa ko`li gogaal lurboota tiim icchina makki iraakkoo lubaatuwwa eehidem idaadannuwwa beeball kiisaa kaballi ateebe teim limo itoolla?	Sas(3) kore
226	Higu 24 saatanne (saatina) ki anga saamuninnee /gill buchchine hurb aata gudishiihse illage aanshaqqitaa lagoo?	1.ooyya 2. La`oomoyyo
227	Higu 24 saatina lurbaa ichchiinse illage anga samuninnee gill buchehinne aanshaqqitaa laqqoo ?(summa)	1. Ooyya 2. La`oomiyyo

Awwonsi saso (3) ku xa`mmichchi xaligi ihaakko kokaa xa`lugominne gudda axisaamaakka ohurbaa ichch saaarauuimminattei moroon caakkishshi chaare moo`llene

Hurbaakeei lagalluwwa	Saarayya	Wrbaaxxi hagora	saaroyya
Sarata		Baaqeela	
Boqqolla		Mishira	
Xaate`e		Sumbura	
Arasa		Hobaraam baaqeela	
So`o		Burttukaana	
Dabaaqula		Mangoo	
Timaatima		Ado	
Dinnicheero		Salalo	
Rasher lugumo (beet root		Buuro	
Shaana		Uggaata	
Abokaadoo		Firu beei ado	
Kaaroota		Antsbaai maara	
Yaayoi shaana		Quunqa	
Sukkaar dinmchcho		Qurxxume`e maara	

Weesa		Marabo	
		Muuza	

Awwonsi sooro(4)			
	Malo`o uwwimma ka CBN saeeuten		
	Higu sas (3) aganni woronne ciilluwwa meeii kore fayyaoom awwaaxxi mine wottaa		
B.37	Higu sas (3) agonni woronne meek ore gurato keensisaa leellito ?	1-Mat kore 2-lams kure 3- Sas kure	
B.38	Higu sas agaanni woronne minaadobinre maqire meei kare sawwwite daballant aa heeillitii?	1.-Mat kure 2-lam kure 3-sas kure	
B.39	Ki ciillichchi min Gbaroos fayyaoom labees imam chaartanne yoo /	1- Ooyya 2- Bee`e	
B-42	Orachcho Xaligisoo lurbaaxxa bikkna sawwite ka (HEWS) aa`llaa (Siidaa) laqqoo?	1-Ooyya 2-Laoomoyyo 3- laoomoyyo	
B.43	Qoyya yittilase hinkidoi sawwite (malo) siidito	1- qos liinina awwaadoo lone 2- anunami edukkiookeeone 3- wo`m ichchi lutbootuww biooina abaroos qoodoibikkinaa ciilluwwaa booyyummi bikkina	

Awwonsi onto **(5)** min woronne siidamoo (moo`amoo ) muuttuwwi bikkina sawwite aaimma. Kaba ani xa`mmeena hasummiluwwii eehidem moo`eena hasummi luwwi ki ago wo`I sidamoo bu`oo yookki muutaa eehidem shummi mini mucciroomaa iroo kka		
Minni woro`l amaxxa (muuta)		
900	Ki minenne marbaat yoo ?	Ooyya----------1 beee ----------2
901	Mobili (silk) yoo?	Ooyya----------1 beee ----------2
902	Iinse`lloo araifuutoi dakki yoo	Ooyya----------1 beee ----------2
903	afuuchchi barcumi yoo ?	Ooyya----------1 beee ----------2
904	Fuutoinne gudukki baruumiyoo?	Ooyya----------1 beee ----------2
905	Hurbaat dissakkam	Ooyya----------1 beee ----------2
906	Televizin /Baxukkuyyi yookki caraqqi television	Ooyya----------1 beee ----------2
907	Radon (muuziqa lellishakka`en muut yoo	Ooyya----------1 beee ----------2
908	Sigisaanchi	Ooyya----------1 beee ----------2
909	Marbaatine hurbaata gudisakkam muuta (stoova)	Ooyya----------1 beee ----------2
910	Gaazinne baxoo lubaata sarimmina aluueedoo muut	Ooyya----------1 beee ----------2
911	Eddechela aonslokkam maashiin iyoo?	Ooyya----------1 beee ----------2
912	Biffii/haqqine baxamookkoo muelta dissimmina	Ooyya----------1 beee ----------2
913	Bishikiliita	Ooyya----------1 beee ----------2
914	Motora (sas lantulullei yookki caamee	Ooyya----------1 beee ----------2
915	Fotoo kiisakka`m muuta (video camera)	Ooyya----------1 beee ----------2
916	Gaareii	Ooyya----------1 beee ----------2
917	Caamee	Ooyya----------1 beee ----------2
918	Ku lanaan qadamukki muuttuwwi hundim bonk te`im microfinance sninjjim xigonne qoohonehe?	Ooyya----------1 beee ----------2
919	Ki min abaroo aggi woina bu`I ihoo beyyi hanno?	Shomboqii afoo laboo beyyinna firoo woo --------1
920	Ki min abaroos hurbaata sarimmina awwaaxxoo zayit hinkid`one?	Minaadophlphi awwaxxi beyyiiinsette (uulli woriinse firoo woo ----------2
921	Kimin abroos awwaaxxoo shu min hin kid egeramaakkoo lane ?	-egedamaakkoo bu`o--------3
922	Ka at awwaaxxiqoo muccur shum mine mulli manaina baxxonstaa laqqoo?	-egedamu lei bu`o ----------4
923	Horoor ihaakkoo fooqqi mine baximina haramoo muut awwaaxxiqoo	-egedamookkooo bu`o --------5

924	Min jimne beximmina haaroor ihookko awwaxxinoom muut ?	-daajja//eera/----------6
925	Biireen yookki gorttan baxamukki muuti	-qoodamaakkoo beyyi bee -Mulli beyyo
Xammi cha 926	Ki min abaroos heechchi duula`a (gattida caakkiseena xantoo ?	-Kiraayyi minennette---1 -Gagi mirennette --------2 -Mulli bagannatte --------
Xammichchi 927	Ki min abaroosina ixxi gaqqanii haakkoo leechchina haramoo (awwaado) tamooiuwwi yoo? Calleewwi orodduwwi abuulli diinat (mirg`uwwi , sire`uwwi	- Ooyya ----------1 - -bee`e----------2
928	Woroon yoo Mikmikoo soko`uwwi woriinsa kiina ihaakkoo yoohonile ?	a) Axxi lari adduwwi baalluuwi (moo`lluww) b) Antabaaii C)Fellai d)Gereeb e) faradi f)lalli tiim baqullii G) qlishshisechchuww
929	Ka ki min abaroosina ixxan ihaakkoo abuulli uuni Yoo ?	1.Ooyya 0- Bee`e
930	Oo yookko yitti uulli keenaan anne hinkaanna inoo ?	2 lamleeetara

Awansi loho (6): Awaxxitakkammi huribaxxi bikkina

Xigo	Xammichcha	Dabachchi doolluwwa
1.	Atim ikkito kimin abaroo kamin aadabina lirbaaxxi lubatonne eddaa laqqoo ?	- Ooyya ----------1 - La`oomoyyo --------2
2.	Ooyya ri ttilas yammichi matonne (food secriten) kimin abaroose anga edaa leelokko?	1- Mishaam ihaakkoo saftynexxi programanne . 2- Ku stratagei (seer) atoome yookki gattukki beyyonne anga edummuma. 3- Hawwo tirimni boxonne 4- Lasege waaaroo qaranchi baxonne

		5- Mulli bazzuwwane.
3.	Awwanoo atoota afiseebeina kiweixxaa`llu tti hurbaat hinkaanna dasoo?	1. Lamaganiinse woroone 2. Lsm-aganiinse woroone 3. Onto-sadeent agan afeabe`e 4. -9-20 agan afabe`e
4.	Ka saanttuwwina lurbaat lanniiwaaro?	1. Shooqiinse 2. Bitaaimminne 3. Aganni miqiinse siidaminne
5.	Wixxukki lurbaat mullekki afeebeina hin kaan ammane dasoo?	1. Lamaganii woroon 2. Lam –sooragan afeebee 3. 5-8aganifeebee 4.9-20 agani afebee .

Xigo	Xa`mmichcha	Dabachcha doolluwwa
1	Nigu soor saantuwwane ki min abarasina kimimina lubrbaaxxi qaxinse (loffeukkisa) sawwi taa heellitone ?	0 akkayyi (eehideyyuo) xa`mmich chi lamo 1= ooyya .
1.a	Hundi ammanem kuki moo amoo are?	1-Hooffi qoxi ammane (soor saanti woronne mat kire /lam kore) 2-Mat maat ammane (ammane (3-10. Kure saati woronne koriinse lanaan 4- Hundiammanem to koriinse lanaan
2.	Higu sooor saant woronne ay /kimin abaroos woroinse matinam itoo luwwa siideena xanukkoyyo	1- Bee`e (xam3) 2- Ooyya.
2:a	KuK hundi ammanam moo `amoo hanihe ?(mooamoo)	1- Hoffiqaxame te`im ligu soor saantanne lan kore 2- Mat mat ammane (sas –tommi higu saantanne) 3- Higu soor saatanne lundiananem tommokoriinse lob kore.
3	Higu soor saant woronne ati te`im ki minni abaroos wo`m ilubeei lurbaata itaa laoo wu`amoo amaxxi luffenni kiaa ?	0 = La`ooyyo itti lase ya`mmichchi sooro 14) moollere) 1= Ooyya.
3a	Hin dikosinne lurid ammarem moo`ammeena xanoo?	1.Hoffiqaxame /ligu soor saantaanne lam kore

		2. Mat mat ammanne (sasi –tonmiligu-saantanne) 3. Higu soor saantanne hundiammaneu fommi koriinse lob kore .
Y	Higu soor saanti woronne at teim ki min abaroors woriirse itmmi lasisukkoyyi amati lo ffech choonse ki`aa itoonne gatukai lurbaaxxiha gar hee`aa ?	0= bee`e (xa`mmichchi5) 1= Ooyya
5	Higu soor saant woronne at te`im kimin abaroos xiqi woriinse ammanina xale ihoo lurboota itaa fuulliseena xanookkca maskkaiim hundaagge itmmina lurbaaxx? Qaxoom huffchchi yoo bikena?	0= eelideyyo (xam6) 1- Ooyya .
5a	Hinikidiisinne lundem ammannem moo`ameena xanukko? (xan ookkok)	1-noffi qoxame (nataagge teim lam kore ligu soor saantane) 2- Mat mat ammore (sasii- tommi ligu saantanne) 3- Higu saantanne hundiammanen too mikoriinse lob Kure.
6	Higu soor saantanne (saantima at teim ki min	0= bee`e (xammichchi5) 1 Ooyya.
6a	Hindidoiisinne hunden ammanem moo`ameena xanookkoki)	1. Haffi qaxame (ligu soor saantanne lam kore 2. Mat mat ammore (sassi –tommi ligu saantanne) 3. Higu saantemme hundiammanem to mmikorii
Higu soor saant woronne, lunki hagor hurbeetim itimmina bee`enn ki min aboroossna mashkalim lubrbaat siidimina amaaxi hoffechehi yoo bikkina		0= echideyyo (xam 8) 1=ooyya
7-a = Kuki hundem ammane meni moe`amookkoki ----------		1-Aoffi quxi ammere (mataege/lamaage ligu soor saantanne. 2-matmatu kure (3-10 kure ligu soor saantworonne) 3-hundem kure (10-koniinse hanaan ilaakkoo ammanne
8. Higu soor saanti woronne atetem ilukko ki min aba roos woriinse himo sibaarinne		0= bee`e (xam-9

iinsse`ukki hee`aa mashkaim lurbaaxxi hanqatimmi m`aa	1=Oyya
8.a kuk hundem ammanem hoo amoohoni	1- hoffi qaxa (1kora terim lam – kore ligu soor saanti woronne 2-Mat mati kore (3-10 kori afeebee higu soor saantiworonne 3-Hundem ammarem (10-koriinse hanaani higu soor saantenre.
9.Higu soor saant woronne at itiim kiimin	O= akkai (xammichehi bee`daakkoo 1-Gyya.
9-9 ku hundi ammanem moo amoohane?	1- Hoffi qaxa (soorem soontonem 1-kore teim lam kore . 2- Mat mati balla(3-10 kore ligu soor saantane 3- Llundem ammem (higu soor saantanne 10 koriimse lanann ette.

Awwonsi-7 woroon yoo xa`mmichcha qananaa`e woroon yookki daadaanu wwa annichchi annichchs qananaa`e odim oiyya yoohaa nonnee akkai yooo laanunne mare`e isse. Chaarttuww (makki koiiinne yookki gorogo (ogira) moo`e ee doo`llu wwind (lob: loc & adim /teim .1of) dabaraanchi oyya yaa dabarona.

Xigu	Nammichaa odim binaaimma	Mare`r seera				Xammichaa mare uwwimma baxxanch bwwaa
Xammahi 10	La`manisaa ya`mmeena hasoommi lliwwi mat daadanni beelalla day (balli iloona) hiimo woro onne yookkichantanne yookki doqqoyyenne yookki dada nnuwwi		Ooyya	Eehid oyyo	Dk	Xam=11.Hinkaan kore leeballa (beeballa) meek ore) ballaa hiimoo aggbaa lee iitoo.

	bikkina qananaa`e oyya,eehidayyo dk neei kore beehalla balla teiim hiimo daadaano siidoolla.					
1	Daqayui wo`o	A	1	2	8	B.ammore(kire)
2	Ciilluwwi afuuchchi duula`a	B	1	2	8	C. kore
3	Onginne gudukki ado /haareeh cho go shamukki diinaxxi ado –siidamoo ado.	C	1	2	8	
4	Ciisamaakko ciilluwwi agga	D	1	2	8	
5	Muccur shorba`a	E	1	2	8	F.kore
6	Firubeei ado	F	1	2	8	
7	Qaeeaa`lli ciillu wwina hasisoo tirshsho`o	G	1	2	8	
8	Mulli annanmi annanni daadaamni lagalluwwi k.b ciilluwwlina ihoo daadannu wwi	H	1	2	8	
9	Mini ammae xa`m kka`a siidimmina xan moo dada muwa	I	1	2	8	

Awannissi sadento (8): hurbatti hagalluwa kennatti xammichcha

	Kaaaii lasonne xammeena hassummi hagalluwwa bee balla ballaa maaroo siidchoortonne kullulleesa isse.	Luuwwi itakkam lurbaaxiitokaa woroore yookki	
	Hurbaaxxi hagalluwwa	Dabachcha	
		Ooyya	Hanqayyo(eehideyyo)
1.	Qaccaa`lli horbayyxi lagallawwa (tirshsho) ko tirohoi gudeena xanookokkii boqqollii saratiinse, arassirinse.xaafeiinse----	1	0
	-Otongo`ll qama - weeshkurbaattuwwa(waasa,bu`o -Injjeera -annanni lugumo itakkam hurbaattuwwe	1	0
2	Baaqee`llinse gudukki oyyi hagar hurbaatt bwwim kib:- atara --- M/c Baaqeela, qoxxaalli atara.	1	0
3	Ayyi adi , salal Giin ad , Buur ?	1	0
4.	Qyyi mirgii maar? Pork (woii wornne slidamoosokoi, Gereechchi wotara fella`a shumagichcho.	1	0
5	Hunkki hagar quunqimi	1	0
6	Kaaroota, mishshuww & kaashshuwaik.b sshaanoi buyyuwwa, abocaado	1	0
7	Ayyi hoga mishshuww & kaaxxshuwai k.b shaanoi buyyuwwa, abocaado	1	0
8	Xa`mmichchuwwi luleisha uwwitti china araqiinse gallaxxooino laseesaanchi sawwitte summa.	Ammaninaa dobach /kormmal	