

## Complementary Feeding Practices and Associated Factors among Mothers Having Children 6 - 23 Months of Age in Ambo Town, West Shoa Zone, Oromia, Ethiopia

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### Abstract

**Background:** The first two years of life are a critical window of opportunity for the development of each child's full human potential. Adequate and appropriate complementary feeding during 6 - 23 months of age is a fundamental to ensure the health, growth and development of children and it helps to reduce child's risk of malnutrition, infectious disease and related mortality. The aim of this study was assessing the practice of appropriate complementary feeding and associated factors among mothers with children 6 - 23 months of age in Ambo town, 2018.

**Methods:** A community based cross sectional study design was conducted among 441 mothers with 6 - 23 months old children from August 10 to August 30, 2018 in the three randomly selected kebele. A multistage sampling technique was used to identify study subjects. Data were collected by using pretested questionnaires through face to face interview for quantitative. Data were entered into Epi data version 3.1 and data cleaning and analysis was done by using SPSS version 20. Frequencies distribution, binary and multiple logistic regressions were used to identify factors associated and statistical significance was determined at the p-value of < 0.05.

**Results:** This study revealed that only 26.8% of children aged 6 - 23 months received appropriate complementary food considering timely introduction, minimum dietary diversity and minimum meal frequency. Child's age (AOR = 4.26, 95% CI: 1.32, 13.73), family income (AOR = 3.58, 95% CI: 1.23, 10.44), absence of hindering factors (AOR = 7.90, 95% CI: 3.71, 16.90) and method of feeding; bottle and spoon (AOR = 7.80, 95% CI: 1.58, 38.50) were found to be significantly associated with appropriate complementary feeding practice.

**Conclusion and Recommendations:** In this study greater than 70% of mothers were not fed their children from diversified food items. So appropriate intervention should be taken in a place to solve this problem.

**Keywords:** Complementary Feeding; Timely Initiation; Minimum Dietary Diversity; Minimum Meal Frequency and Minimum Acceptable Dietary

### Abbreviations

ANC: Antenatal Care; EDHS: Ethiopian Demographic Health Survey; FMOH: Federal Ministry of Health; IYCF: Infant and Young Children Feeding; MDD: Minimum Dietary Diversity; MMDD: Met Minimum Dietary Diversity; PNC: Post-natal Care; UMDD: Unmet Minimum Dietary Diversity; WHO: World Health Organization

## **Introduction**

Children are most vulnerable to malnutrition in the world because of low dietary intakes, lack of appropriate care, and inequitable distribution of food within the household. Adequate nutrition during infancy and early childhood is essential to ensure the growth, health and development of children to their full potential [1].

The first two years of life are critical stages for a child's growth and development. Any damage caused by nutritional deficiencies during this period could lead to impaired cognitive development, compromised educational achievement and low economic productivity [2]. Initiate safe and nutritionally adequate complementary foods at 6 month is crucial to achieve optimal growth, development and health of the children [1].

The world health organization has defined complementary feeding as the process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast milk. The transition from exclusive breastfeeding to family foods which covers the period from 6 - 24 months of age, even though breastfeeding may continue to two years of age and beyond. It is not recommended to provide any complementary foods to children less than six months old [3].

An appropriate diet is a critical component for proper growth and development of children. The first two years of life are a critical window for ensuring optimal child growth and Nutritional deficiencies during this period can lead to impaired cognitive development, compromised educational achievement and low economic productivity which become difficult to reverse later in life [4].

Appropriate complementary feeding entails; introduction of complementary foods at 6 months with continued breastfeeding up to at least 2 years and beyond, correct feeding frequency for age and consumption of diversified diet. A complementary feeding that is provided based on the World Health Organization (WHO) recommendations promotes growth of the child and prevents stunting among children between 6 and 23 months of age [5,6].

Initiating complementary foods too early or too late can lead to malnutrition. The early introduction of complementary foods before the age of six months can lead to displacement of breast milk and increased risk of infections such as diarrhea, which further contributes to weight loss and malnutrition [7]. On the other hand, delayed complementary feeding causes protein energy malnutrition due to which severe Neurological manifestation can occur by the nutritional deficiencies of iron, zinc, calcium and sometimes vitamin A and riboflavin [8].

Malnutrition is an underlying cause of death for 2.6 million children each year, and it leaves millions more with lifelong physical and mental impairments. Worldwide, more than 170 million children do not have the opportunity to reach their full potential because of poor nutrition in the earliest months of life. Millions more children survived but suffer lifelong physical and cognitive impairments because they did not get important nutrients at early in their lives when their growing bodies and minds were most vulnerable. When children start their lives malnourished, the negative effects are largely irreversible. This largely unnoticed child malnutrition crisis is robbing the health of tomorrow's adults, eroding the foundations of the global economy, and threatening global stability [9,10].

Therefore, World Health Organization (WHO) has recommended core indicators for infant and young child feeding (IYCF), of which timely introduction of soft, solid or semi-solid foods, minimum dietary diversity, minimum meal frequency, and minimum acceptable diet are related to late infancy, and thereafter up to 2 years of age [11].

Scientific evidence indicates that inappropriate feeding practices can have profound consequences for the growth, development and survival of infants and children. Various inappropriate complementary feeding practices such as; untimely introduction of complementary food, improper feeding frequency and low dietary diversity of complementary foods have been shown to have numerous negative effects on children's health [12].

Ethiopia has one of the highest rates of malnutrition in Sub-Saharan Africa and faces acute and chronic malnutrition and micronutrient deficiencies. Nutrition deficiencies during the first critical 1,000 days put a child at risk of being stunted. Stunting for children under age 5 sharply increases between age 6 and 23 months, and peaks at age 24 - 35 months. This affects 40% of children in Ethiopia [13].

In Ethiopia, age appropriate infant and young child feeding practice is alarmingly low; as indicated by the national level report of Ethiopian Demographic Health Survey (EDHS) 2016, only 7% of children aged 6 - 23 months met the criteria of IYCF practices [14]. The prevalence rate of appropriate complementary feeding seen from the studies conducted on children aged 6 - 23 months at Abyi Adi, Bahirdar, Damot sore, Damotweydie and Arsine Gelée that account 10.75%,7%,11.4%, 8.5% and 9.5% respectively.

As EDHS 2016 report, 58% of infants under 6 months are exclusively breastfed. Contrary to recommendation by WHO those children under age 6 months on breastfed, 17% of infants 0 - 5 months consume plain water, 5%, consume nonmilk liquids or other milk, and 11% consume complementary foods in addition to breast milk. During survey 5% of infants under age 6 months are not breastfed at all [14]. Ages at initiation of complementary food or infrequent and wrong complementary practices are obviously critical factors affecting child development and health. The appropriate complementary feeding practices are affected by socioeconomic condition of the population, education, culture, norms and believe and taboos. These factors are also responsible for a significant portion of morbidity and mortality among infant in Ethiopia.

## **Materials and Methods**

### **Study area and period**

The study was conducted in Ambo town which is located 114 km from Addis Ababa on the main road to Wollega, in West Shoa, Oromia, and western of Ethiopia, from August 10 to 30, 2018. Ambo town was established in 1889 E.C and covers of 8587 hectares of land that classified into 6 urban kebeles (small administrative unit). According to the national census of 2007, the projected total population of the town is 83,053, of whom 41,360 were males and 41,692 were females.

### **Study design**

A community based cross sectional study design using both quantitative and qualitative methods of data collection.

### **Population**

#### **Source population**

All Mothers having children 6 - 23 months of age and residing in Ambo town.

#### **Study population**

The study population was mothers with children aged 6 - 23 months and living in randomly selected kebeles.

#### **Sampling unit**

Each mother that has child between 6 - 23 months of age and who were chosen by a simple random sampling technique.

#### **Sample size determination**

The final sample size was 441 mothers or care takers with index children 6 - 23 months.

#### **Sampling procedure**

A multistage sampling technique was used to select the study subjects. Three kebeles (1, 2, 3) were randomly selected using simple random sampling method. The study subjects were allocated to selected kebeles using proportion to population size based on number of populations of each kebeles.

### **Data collection tools and techniques**

Data were collected using face to face interview during house to house visit from mothers having 6 - 23 months age children by using structured questionnaire adjusted and developed after reviewing WHO, indicators for assessing infant and young child feeding practices, some important literatures and previous tools that were applied in different studies related to assessment of weaning diet practice. The original English questionnaire was translated to local language Afan Oromo. The questions was grouped and arranged according to the particular objective that they can address.

### **Data processing and analysis**

Data were checked for completeness, editing, coding and entered into Epi data version 3.1 and exported to SPSS version 20 statistical software for analysis. Bivariate and multivariate logistic regression analysis was carried out to measure the association and was employed to adjust for possible confounding variables. The bivariate analysis was done to see the association between dependent and independent variable at p value < 0.2 to build a multiple variable. Finally, multivariate logistic regression analysis was employed to control for possible confounding effects and to assess the separate effects of each variable at p-value of < 0.05 was considered statistically significant. Adjusted Odds Ratios and their 95% Confidence Intervals were reported.

### **Results**

In this study, a total of 441 mothers having children whose age is between 6 - 23 months were enrolled in the study yielding a response rate of 100%. The age of respondents ranged from 18 to 48 years with median age of 26 ( $\pm$  4.83 SD) years. The majority of the mothers categorized under the age group from 24 - 29 years that accounts 223 (50.6%) and the lowest age category was  $\geq$  37 which accounts 17 (3.9%) of the total. Concerning the marital status from the total respondents 402 (91.2%) and 39 (8.8%) were married and others (un-married, divorced and widowed) respectively. In this study, majority of respondents, 134 (30.4%) of the sampled mothers were attended primary school (1 - 8) and while 147 (36.4%) of their husbands have attended degree and above. The small number of mothers and their husbands had unable to read and write were accounted 57 (12.9%) and 25 (6.2%) respectively.

More than half of the mothers, 240 (54.4%), were unemployed/housewife and 7 (1.6%) of them were engaged into skilled laborer. In terms of child characteristics from the total 441 children of the sampled mothers, 237 (53.7%) were male and the rest 204 (46.3%) were female. The age of children ranged from 6 to 23 months with a median age of 15 ( $\pm$  5.37 SD) months (Table 1).

### **Complementary feeding practices and related incidences**

From the total 441 respondents, 433 (98.2%) mothers have already started complementary feeding to their children, while 327 (75.5%) of mothers were continued breastfed and the remaining 106 (24%) of respondents were stopped breast feeding after starting complementary feeding. Approximately from those 433 of participants, 351 (81.1%) of mothers introduced complementary feeding at 6 months age of the children as per recommended, while 59 (13.6%) of them had started or introduced complementary food at early age before 6 months. Only 23 (5.3%) of mothers commenced late after 8 months and the rest 8 (1.8%) of mothers did not start complementary feeding at all.

Regarding first food that given to the infant, the highest and lowest number of child were practiced with commercial infant formula and fluid/semisolid/mashed food (muk, gruel) which is made from the mixed flour of teff, wheat, barley, bean, pea, and nuts, 184 (42.5%) and 17 (3.9%) respectively.

The respondents were asked about reasons for initiating of complementary, the most common reason that was cited is the age reached to the recommended time 347 (80.1%) and the least 9 (2.1%) were reported that separation from mother/death of mother.

Mothers' practice of complementary feeding that was assessed in this study based on the composite indicators: timely initiation of complementary food, minimum dietary diversity and minimum meal frequency. The result of this study revealed that the timely initiation of complementary food 351 (81.1%). Only 127 (29.3%) mothers offered four or more food groups to their child meeting the minimum

Characteristics	Category	Frequency	Percentage (%)
Mothers' age (n = 441)	18-23	147	33.3
	24-29	223	50.6
	30-36	54	12.2
	> = 37	17	3.9
Childs' age (n = 441)	6-8	69	15.6
	9-11	69	15.6
	12-23	303	68.7
Marital status (n = 441)	Married	402	91.2
	Single	39	8.8
Mother's Education (441)	Unable to read and write	57	12.9
	Primary school (1 - 8)	134	30.4
	Secondary school (9 - 12)	104	23.6
	Vocational/Diploma	83	18.8
	Degree and above	63	14.3
Husband Education (403)	Unable to read and write	25	6.2
	Primary school (1 - 8)	83	20.6
	Secondary school (9 - 12)	78	19.4
	Vocational/Diploma	70	17.4
	Degree and above	147	36.4
Mother Occupation	Unemployed/housewife	240	54.4
	Gov't/NGO employee	90	20.4
	Merchant	67	15.2
	Skilled laborer	7	1.6
	Unskilled laborer	37	8.4
Husband Occupation	Unemployed	11	2.7
	Gov't/NGO employed	190	47.2
	Merchant	67	16.6
	Skilled laborer	93	23.1
	Unskilled laborer	42	10.4
Average monthly income	≤1500	149	33.8
	1501 - 3000	121	27.4
	3001 - 6000	116	26.3
	≥6001	55	12.5
Source of income	Self	96	21.8
	Husband	321	72.8
	Both wife and husband	16	3.6
	Family	8	1.8
Mothers' Religion	Orthodox	208	47.2
	Protestant	223	50.6
	Muslim	10	2.3
Mothers' Ethnicity	Oromo	417	94.6
	Amhara	14	3.2
	Gurage	10	2.3

**Table 1:** Socio demographic and economic characteristics of mothers with index children in Ambo town, West shoa, Oromia, Ethiopia, 2018 (n = 441).

dietary diversity criteria on the day preceding the study. A proportion of 353 (81.5%) mothers fed their children more than two times on 24 hours of preceding the study (minimum meal frequency), while only 7 (1.6%) of respondents fed their child once in a day. On the minimum acceptable diet practice which is the combination MDD and MMF was only 123 (27.8%) of mothers had practiced.

The overall prevalence of appropriate complementary feeding practices, combining the three mentioned indicators was 26.8%.

A proportion 381 (88%) of grain, roots and tubers were the most commonly taken food items by the children in 24 hours preceding the survey followed by legumes and nuts 335 (77.4%), Dairy products 310 (71.6%), Egg 127 (29.3%), vitamin-A rich foods 105 (24.2%), other fruits and vegetables 95 (21.9%) and the rest 16 (3.7%) were feed flesh foods for the children 6 - 23 months of age during the past 24 hours. The respondents have mentioned different methods of feeding as an appropriate to give complementary foods to children.

Majority 293 (67.7%) of the participants have mentioned feeding their babies with spoon and cup as a best method. Of the small number 15 (3.5%) of participants, stated that feeding from bottle and spoon was as a best way (Table 2).

Characteristics	Category	Frequency	Percentage (%)
Complementary feeding started	Yes	433	98.2
	No	8	1.8
Reason of not starting complementary	Lack of awareness on feeding	4	50
	Low economy	4	50
Age of initiation of complementary feeding	1 - 2 months	12	2.8
	3 - 5 months	47	10.8
	At 6 months	351	81.1
	After 8 months	23	5.3
First complementary food	Cow's Milk	179	41.3
	Water and sugar	28	6.5
	Commercial infant formula	184	42.5
	Fortified porridge	25	5.8
	Fluid/Semisolids/ mashed	17	3.9
Reasons of starting complementary	It was correct time	347	80.1
	Breast problem	19	4.4
	Advice from HI	15	3.5
	Inadequacy of breast milk	20	4.6
	Inconvenience/ workload	23	5.3
	Separation from mother/death	9	2.1
Frequency of feeding in a day	Once	7	1.6
	Twice	73	16.9
	Three times	214	49.4
	> Four times	139	32.1
<b>Dietary assessment using 24 hours recall</b>			
Grains, roots and tubers	Yes	381	88
Legumes and nuts	Yes	335	77.4
Dairy products	Yes	310	71.6
Flesh foods	Yes	16	3.7
Egg	Yes	127	29.3
Vit A fruits and vegetables	Yes	105	24.2
Other fruit and vegetables	Yes	95	21.9
Way of feeding	From a bottle	61	14.1
	From spoon and cup	293	67.7
	From bottle and spoon	15	3.5
	Hand of mother	64	14.8
Minimum Acceptable Dietary	Combination of MDD and MMF	123	27.8

**Table 2:** Distribution of mothers by complementary feeding practice, in Ambo town, West shoa, Oromia, Ethiopia, 2018 (n = 433).

From the study subjects, 54 (12.5%) of children developed health problems from all who have started complementary diet in 24 hours of preceding the study. From those respondents, 31 (57%) and 6 (11%) of them were attacked by diarrhea and constipation respectively (Figure 1).

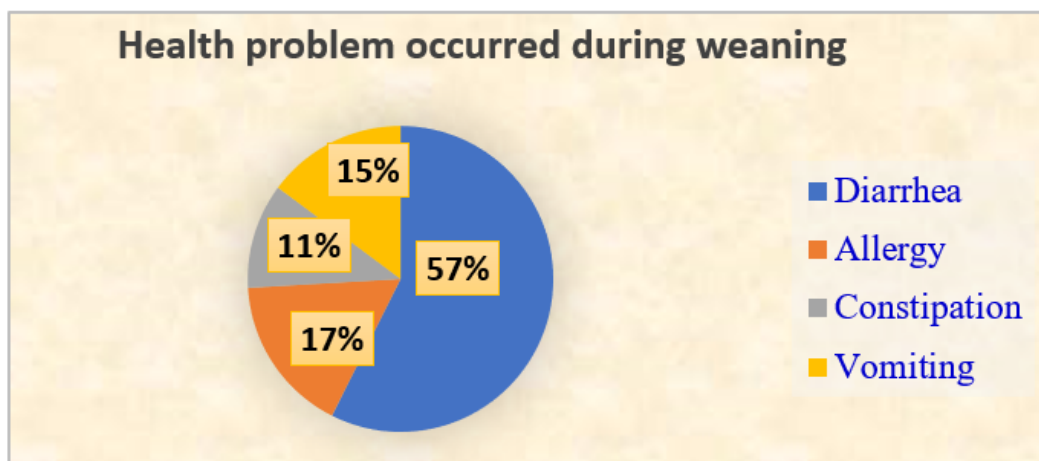


Figure 1: A bar graph showed the age of child that stopped breast feeding after commencing complementary diet in Ambo town, Oromia, Ethiopia, 2018.

This result was supported from the qualitative study as: A 32 years old woman discussants said “Surrounding our resident, we have observed many children suffered from problems related to the practice of feeding. Yesterday I have seen a 7 months old child that exposed to diarrhea and vomiting after taking the complementary food which prepared from cereal based food item and feed through bottle nipple. I have heard that initiation of complementary diet before 6 months will expose the infant to vomiting and diarrhea due to immature digestive system, poor sanitation and weak resistance”.

#### Factors associated with appropriate complementary feeding practices

Multiple logistic regression analysis was done to control confounding effect variables that affecting the appropriate complementary feeding practice. It was examined in multiple logistic analyses that among the independent variables, which showed association during bivariate analysis; age of child, average monthly income, presence of hindering or limiting factors of complementary and best way of feeding were found out to be significantly associated at  $p < 0.05$  with appropriate complementary feeding practices.

Mothers of children’s aged 9 - 11 and 12 - 23 months practiced appropriate complementary feeding 4.26 times (AOR = 4.26, 95% CI: 1.32, 13.73) and 4 times (AOR = 4.03, 95% CI: 1.49, 10.93) more likely to in comparison to mothers having 6 - 8 months aged children, respectively.

Mothers who have earned  $\geq 6001$  ETB monthly income were 3.58 times more likely to practiced appropriate complementary feeding than mothers who have earned  $\leq 1500$  ETB monthly income (AOR = 3.58, 95% CI: 1.23, 10.44).

Mothers who feed their children by spoon and cup were 5 times (AOR = 5.02, 95% CI: 1.75, 14.41), bottle and spoon about 8 times (AOR = 7.80, 95% CI: 1.58, 38.50) and hand of mother 6.14 times (AOR = 6.14, 95% CI: 1.76, 21.45) more likely practiced appropriate complementary feeding than mothers who feed their child only by bottle.

Mothers who have asked about the presence of factors that affecting or limiting the complementary feeding practices, who have answered “no” are about 8 times more likely to practiced appropriate complementary feeding (AOR = 7.90, 95% CI: 3.714, 16.90) compared to mothers who have said “yes” (Table 3).

Variables	Category	Appropriate complementary		(95% CI) COR	P -value	(95% CI) AOR	P - value (< 0.05)
		Yes	No				
Child Age	6-8	6	56	1		1	1
	9-11	21	47	4.59 (1.72,12.26)*	.002	4.26 (1.32, 13.73)**	.015
	12-23	89	214	4.37 (1.82,10.46)*	.001	4.03 (1.49, 10.93)**	.006
Mother Education	Unable to read and write	9	46	1		1	1
	Primary school (1 - 8)	26	106	1.28 (.56, 2.95)	.555	1.03 (.36, 2.92)	.953
	Secondary school (9 - 12)	22	79	1.43 (.61, 3.36)	.411	1.08 (.36, 3.19)	.928
	Vocational/Diploma	31	51	3.18 (1.37, 7.36)*	.007	2.13 (.69, 6.52)	.183
	Degree and above	28	35	4.27 (1.79, 10.17)*	.001	1.99 (.58, 6.86)	.271
Mother Occupation	Unemployed/housewife	66	170	4.29 (1.28, 14.47)*	.019	.52 (.098, 2.72)	.433
	Gov't/NGO employee	29	60	5.39 (1.53, 19.00)*	.009	.29 (.051, 1.72)	.178
	Merchant	15	50	3.27 (.88, 12.15)	.077	.26 (.044, 1.56)	.143
	Skilled laborer	3	4	8.50 (1.26, 57.19)*	.028	.56 (.055, 5.64)	.632
	Unskilled laborer	3	33	1		1	1
Father Occupation	Unemployed	3	8	3.56 (.66, 19.11)	.138	4.54 (.63, 32.67)	.135
	Gov't/NGO employee	62	128	4.60 (1.57, 13.47)*	.005	1.34 (.34, 5.19)	.683
	Merchant	23	44	4.97 (1.58, 15.64)*	.006	2.19 (.53, 8.99)	.271
	Skilled laborer	21	72	2.77 (.89, 8.66)	.080	2.15 (.54, 8.49)	.271
	Unskilled laborer	4	38	1		1	1
Average Monthly Income	<=1500	13	133	1		1	1
	1501-3000	36	84	4.431 (2.22, 8.83)*	.000	2.05 (.87, 4.80)	.100
	3001-6000	39	74	5.30 (2.67, 10.53)*	.000	2.07 (.87, 4.95)	.112
	>=6001	28	26	10.85 (4.99, 23.59)*	.000	3.58 (1.23, 10.44)**	.019
Way of feeding	Bottle	5	56	1		1	1
	Spoon and cup	89	204	4.87 (1.89, 12.61)*	.001	5.02 (1.76, 4.41)**	.003
	Bottle and spoon	7	8	9.80 (2.50, 38.41)*	.001	7.80 (1.59, 38.50)**	.012
	Hand of mother	15	49	3.43 (1.16, 10.12)*	.026	6.14 (1.77, 21.45)**	.004
Hindering factors	Yes	12	178	1		1	1
	No	104	139	11.09 (5.87, 20.99)*	.000	7.94 (3.71, 16.90)**	.000

**Table 3:** Multiple logistic regression of factors associated with appropriate complementary feeding practice among mothers having children 6-23 months of age in Ambo town, West shoa, Oromia, Ethiopia, 2018.

NB. \*Significantly Associated; COR: Crude Odds Ratio; \*\*Significantly; AOR: Adjusted Odds Ratio.

## Discussion

WHO designed different strategies to achieve optimal implementation of CF practice ( $\geq 80\%$ ) in the last twenty years (WHO 2003). To ensuring the optimal implementation of infant and young child feeding (IYCF), Ethiopia also adopt the strategies in 2004 and revised in 2008 to reduce the suffering of children from under nutrition and related consequences. this community-based study was conducted to provide some contribution (inputs) to improve the IYCF practices in the study area, region and the country.



According to this study, the result revealed that 98.2% of mothers started commenced liquids, soft, semi-solid and solid foods to their children and 75.5% of mothers have continued breastfed to their children from one to two years. This finding is lower than the previous study findings in Nepal was 88.6%, Nigeria was 91.9%, Nairobi was 85%, Bahirdar was 88%, Sodo town was 92.3% and Asella town was 95.6%. The discrepancies might be due to socioeconomic, lack of knowledge and sociocultural differences between the study subjects.

In present study about 81.1% of mothers had started complementary feeding at the recommended age of child's. It was higher than the findings from Saudi Arabia (48.5%), Nigeria (48.4%), Mekele (62.8%), Sodo (71.2%), Harar (60.5%), Arsi Negele (70%) and Asella (72.5%). This relatively higher prevalence might be due to practices change with time, the currently promoting the benefit of complementary feeding through mass media and health professional, better maternal health care service utilization, extensive effort of health extension workers and health development army in the area. However, this finding is consistent with the previous study findings in south coastal India (75.5%) and (80%) of Abyi Adi town of north Ethiopia.

The prevalence of Minimum Dietary Diversity of this study was 29.3% of mothers fed their child with four or more food groups from the seven food groups which was better than the Madagascar (22.2%), Damot Weyidie (9.7%), Abyi Adi (17.8%), Mekdele (8%), Pawe (23.7%), Arsi Negele (19%), Asella (24%) and at Oromia region level survey report (18%). This is due to the fact that the current study conducted in urban area here there is better access to health services and utilization than other studies area. But the current finding was less than the findings of the study in China (74%), Nepal (35%), Lasta (60.7%) Dejen (42.1%) and Sodo town (53.3%). The lower level of the result of this study might be due to socio cultural, availability of food items and economic differences among the study areas.

About 81.5% of 6 - 23 months old children have been taken more than two times of food that met the minimum meal frequency standards. This finding is coincides with previous study findings in China (81.6%) and Nepal (84%). However, this finding is higher than the study finding in Sodo town (68.9%), Harar (76%), Lasta (50%), ArsiNegele (67.3%) and Asella (53.8%). The difference might be due to the fact that more than half of mothers of this study were housewives and most mothers were attended ANC/PNC services which is fertile ground to give education and advises on IYCF.

Minimum Acceptable Dietary; a combination of minimum dietary diversity and minimum meal frequency in this study was 27.8% which was higher than the study results in AbyiAdi (11.9%), Damot Sore was 16.3%, Bahirdar was 7%, Arsi Negele was 12.3% and 8.9% in Oromia region prevalence rate this might be due to the differences on child's age enrolled in study, educational status and occupation of mothers. But lower than the findings from China was 49%, Nepal 33% and Dejen 43.4%. This might be due to sociocultural and economic differences.

The result of this study revealed that the overall prevalence of appropriate complementary feeding was 26.8% which was higher than research findings at Bankura of India (21%), Abyi Adi (10.75%), Bahirdar (7%), Damot Sore (11.4%), Asella (23.4%) and Arsi Negele (9.5%). A relatively higher finding result in this study may be because of better accessibility to health institutions and improved services of mothers and high number of the respondents was housewives. However, smaller than a study result in south costal of India (32%), Lasta (56.5%) and Dejen (52%). The differences might be due to educational, sociocultural and economic status.

In the current study about 88% and 77.4% of children aged between 6 to 23 months received grain, roots and tubers and legumes and nuts-based foods respectively. Moreover, a minority 21.9% and 3.7% have received other fruits and vegetables and flesh (meat, poultry) respectively. This finding is lower than the previous study findings in Bahirdar was 98%, 87%, 18% and 17% for cereal, legumes based foods, and vegetables and flesh (meat, poultry) respectively and in Arsi negele was 95.4% for grains. The discrepancies might be due to the availability of those food groups, most mothers preferred less cost food items, animal products are expensive (low economic status), and majority of respondents condemned meat from the list of child's food because they have perception that the child may unable to digest such foods in this age.

## Conclusion and Recommendations

This study has shown that a sizeable number of mothers commenced complementary food at recommended time (6 months) and the commonly used diet during weaning was the food prepared from the mixture of grains, roots, tubers and legumes and nuts (mitin), followed by dairy products which were not considering the minimum dietary diversity which is one of the WHO/UNICEF indicators.

In this study, nearly three fourth mothers fed complementary food inappropriately to the children aged 6 - 23 months which was very high which would have negative impact on the health of infant and young children and indicated the importance of immediate action to promote appropriate complementary feeding. Appropriate complementary feeding was not well practiced particularly on young children aged 6 - 8 months. Majority of mothers were not using meat, fish and chicken and fruits and vegetables when they have prepared complementary food to their children.

Generally, this study revealed that factors like age of a child, income, feeding style and exposure to hindering factors are variables which are positively associated with appropriate complementary feeding practice.

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