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Infant and child feeding practices among farming communities in Southern Ethiopia

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ABSTRACT

Objectives: The main objective of this study is to examine the breast feeding and complementary feeding practices among farming communities of Southern Ethiopia.
Methods: It is a cross sectional survey design employing both quantitative and qualitative approaches. The study used primary data collected from 1094 households located in ten kebeles (the smallest administrative segment) through the multistage probability sampling technique. Information on demography of breast feeding was measured by universally accepted computational tools given by WHO. Data were analyzed using univariate, bivariate and multivariate statistical techniques.
Result: The result demonstrated that a large proportion of respondents were breast feeding their last child (age <2) during the survey. Majority of the women initiated breast feeding early (just at birth); 56% of women practiced exclusive breast feeding and more than 86% reported consistently continuing breast feeding until age 2. The result indicated that complementary feeding starts late for significant proportion of children at age 6–8 months and a larger proportion of children in the age groups 6–8 and 9–11 months did not get the core food groups such as cereal, egg, and meat. The results of the Ordinary Least Square (OLS) regression revealed that four variables have appeared to predict the level of dietary food consumption, namely experiencing child death during the last 5 years preceding the survey, institutional delivery of the last child, literacy status and household hunger. Also, three predictors appeared to have significant association with the likelihood of continuation of breast feeding at age 2; namely, age of women, household hunger and working outside home.
Conclusion: The study concluded that there are positive signs on infant and child feeding practices which should be promoted such as the relatively higher rate of exclusive breastfeeding during the first half of infancy and continued breast feeding through the second year of life and beyond. There are also certain practices that require attention which include the widespread use of bottles, delayed introduction of complementary foods, and low dietary diversity throughout the first 2 years of life.

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Introduction

Poor child feeding practices coupled with high rates of infections have a detrimental effect on health and growth of young children during the first 2 years of life. The first 24 months is thus recognized as being the most important window of opportunity for establishing healthy growth through optimum feeding practice [1]. Evidences suggest that while neonatal health is found to be dependent on health care services, post neonatal health is dependent largely on environmental factors [2] which include breast feeding and nutritional status [3].

Breast feeding is an optimal source of nutrition, important child survival strategy, and is effective intervention for preventing early malnutrition. Studies indicate that during the first 6 months, exclusive breast feeding produces higher survival rates than partial breast feeding [4, 5, 6]. Studies have confirmed that human breast milk is the best form of nutrition for neonates and infants [7, 8, 9, 10]. Expert panels including the World Health Organization [9], the American Academy of Pediatrics [11], and the American Dietetic Association [12] recommend that babies should be breastfed exclusively for the first 6 months. Breast milk is not only the best nutrient for babies but also contains certain antibodies that can guard infants from various infections [13, 14, 15]. In relation to initiation of breast feeding right after birth, Edmond et al. [5] indicated that 16% of the neonatal deaths could be saved if all infants were breastfed from day 1 and 22% if breast feeding started within the first hour.

Despite its benefits, in most countries small percentage of mothers practice optimal breast-feeding behaviors including initiation of breast feeding in the first hours after birth and exclusive breast feeding for the first 6 months of life [10].

Following 6 months of exclusive breast feeding, infants need to be given adequate complementary food, which is timely introduction of safe and nutritional foods in addition to breast feeding [1, 7, 16]. Such food should typically be provided to these children from 6 to 18–24 months of age [1]. According to the World Health Organization (WHO), the complementary feeding should be *timely* (should start at about 6 months), *adequate* and *appropriate*. The incidence of stunting is the highest in the first 2 years of life especially after 6 months of life when exclusive breast feeding alone cannot fulfill the energy needs of a rapidly growing child [16].

Ethiopia is one of the poorest nations in Sub-Saharan Africa where child malnutrition is serious public health concern [17]. Despite the fact that neonatal mortality and under five mortality have declined by 26% and 21% during the last few years [18], the last Ethiopian Demographic and Health Survey (EDHS) reported 77 infant deaths per 1000 live birth for the country [19]. Approximately half of the infant deaths in Ethiopia occur during the first month of life, and 18% of all infant deaths in a year is attributable to poor breast feeding habits [20]. It is also noted that a very large proportion of women do not practice optimal breastfeeding and complementary feeding behavior. For example, only about half of the infants aged 6–8 months receive complementary foods [21], about a third of the babies do not receive breast feeding within 1 hour of birth and only one in three children age 4–5 months are exclusively breastfed [20].

Studies on infant and child feeding practices in Southern Ethiopia, especially in the study zones, are very few and even those available seem lacking focus. These few studies have rather considered child feeding practices as a predictor of malnutrition than directly dealing with it in its own right. Therefore, this study attempted to fill in the existing gaps by measuring the different parameters of child feeding and identifying the key household level predictors of child feeding practices in one of the most populous districts of Southern Ethiopia, the Sidama Zone.

Materials and methods

The study was conducted in Sidama district of the Southern Nations, Nationalities and Peoples Region (SNNPR), Ethiopia. According to the last census [22], the total population of the zone was 2,954,136. With an area of 6538 square kilometers, Sidama has a population density of 452 km^{-2} with an average household size of 4.99 persons. Of the population, 5.51% were urban inhabitants, 0.18% pastoralists and very large portion (94.13%) were rural inhabitants [22]. A substantial area of the Sidama land produces coffee, which is the major cash crop in the region. 'Enset' (enset ventricosum) is the single most important root crop grown in the study area and the bulk of the population depends heavily on it for survival. The areas also produce chat (Catha edulis), vegetables such as potato, cabbage, beans, pumpkin and kale.

The 1094 households surveyed were selected from two agro-climatic zones: highland and low land areas of the Sidama Zone of Southern Ethiopia using appropriate probability sampling techniques. The sample size determination formula used for this study was adopted from Woodward [23]. The estimated sample size, including the 20% contingency, was 1100 households. Then, probability sampling in the form of simple random and two-stage sampling methods was adopted for selecting the required households from the study area. Because the two sub-districts (the low and high lands) were decided in advance, the first stage of the sampling started by selecting five kebeles (small administrative units) from the list of villages within each of the two sub-districts using simple random sampling. At the second stage, households were randomly selected from the available list to give a total of 1094 households.

The data for this study were generated through a structured interview. Information on breast feeding experiences was collected using direct questions recommended by the WHO [24]. Selection of the child feeding indicators was made based on previous studies conducted in Ethiopia [17, 25]. The study collected information on the various dimensions of infant and child feeding practices which includes: breast feeding

(timing of initiation, duration, exclusive, continuation), the use of complementary foods (meal frequency, dietary diversity as a proxy for quality), and frequency of intake of different foods. To estimate the prevalence of exclusive breast feeding, the proportion of women (with infants aged between 0 and 6 months) who stated to have fed their children only breast milk in the last 24-h preceding the survey, was expressed as an EBF percentage of the total number of children in the same age group; initiation of breast feeding was measured by reported start of the first breast milk within an hour of birth; continuation of breast feeding at age 2 was estimated by taking the proportion of women (with child age 20–23 months) breast feeding at the time of the survey; the diet diversity was measured by taking universally accepted food groups and food frequency analysis during the 24 h.

Prior to the data collection, 20 data collectors with minimum qualification of diploma were recruited and given 1 day training on the theoretical and practical aspects of the fieldwork. Then, the checklists/schedules underwent intensive review and pre-testing on a small sample subjects from all categories of respondents. During the field work, informal consents of the respondents were given prior to data collection. Only six respondents refused to participate in the interview.

Pearson's chi-square test of independence was performed to test the existence of significant association with the three core breast feeding variables. A multivariate analysis (using Ordinary Least Square/OLS regression) was done to examine the main predictors of dietary diversity. It is coded from 0 to 8 ranging from very poor dietary diversity (0) to very high (full) dietary diversity (8).

The predictors used in the regression model were selected based on reviewing literatures and model fitting procedures. The co-linearity effect was tested using Variance Inflation Factor (VIF) for all independent variables; given by $VIF(X_i) = 1/1\text{-}R^2_i$. The multicollinearity effect computed for each independent variable was less than the cut-off value (≥=4) which indicates no collinearity problem among the variables.

Results

In Table 1, which shows the background characteristics of respondents, the age distribution of the women shows that larger proportion of them (44.7%) were in the early adulthood (age 25–34) followed by those in the age group of 15–24 (39.4%). The average household size for the study population yields 5.87. The analysis shows that 15.3% of the women were engaged in polygamous marriage arrangement, which is slightly above the national average (i.e. the EDHS 2011 reported 11% for the country).

The distribution of the respondents by educational status reveal that majority of the women respondents were illiterate (56.3%) followed by primary level (27.9%) while the remaining respondents accounted for smaller proportion of the respondents. In terms of employment status, nearly half of the respondents were farmers, another 40% of them are self employed during the survey and those who were engaged in civil service and petty trading accounted for 1.2 and 5.5 % respectively.

Table 1 – Percentage distribution of respondents by selected background characteristics, Sidama Zone Southern Ethiopia (*n* = 1094)

Characteristics	%
Age of women	
Age 15–24	39.4
Age 25–34	44.7
Age 35–49	15.9
Household size	
0–3 persons	17.3
4–7 persons	60.6
Greater than 7 persons	22.1
Marital form	
Polygamous	15.2
Monogamous	84.8
Educational status	
Illiterate	56.3
Elementary (1–6)	27.9
Junior secondary (7–8)	6.3
Secondary (9–12)	4.0
College diploma	1.3
Others	4.2
Usual occupation	
Self employment	39.9
Civil servant	1.2
Farmer	47.1
Petty trader	5.5
Others	6.3
Summary measure of hunger scale (HHS)[a]	
No household hunger	65.4
Moderate household hunger	29.0
Severe household hunger	5.6

[a] Computed based on the set of questions developed by FANTA project (Household Hunger Scale, HHS), Coates et al. [26].

Table 2 presents the demographics of breast feeding computed from the reported data. Like other traditional societies, the proportion of women breast feeding during the time of the survey was 87.7% whereas the ever breast fed percentage is even greater (95%). About 80% of the women reported to have given the first milk (colostrums) to their child just at birth. The proportion of practicing exclusive breast feeding, computed based on the 234 eligible respondents, is 56%.

About 71% of the women start giving supplementary food to their child at about 6 months, and the prevalence of bottle feeding reported was 30.5%. Finally, table 2 reveals that 87.5 and 86.1% of the women reported continuation of breast feeding at age 1 and 2 respectively.

Table 2 – Demographics of breast feeding in the study area computed from women's report, Sidama Zone, Southern Ethiopia

Characteristics	%	*n*	Formula used[a]
Ever breast fed the last child	95,0	1094	Infants 0–5 months of age who received only breast milk during the previous day *divided by* Infants 0–5 months of age
Early initiation of breast feeding (first milk given to the child at birth)	80.1	1094	Children born in the last 24 months who were put to the breast within one hour of birth *divided by* Children born in the last 24 months
Exclusive breast feeding at age <6 months	56.0	234	Infants 0–5 months of age who received only breast milk during the previous day *divided by* Infants 0–5 months of age
Supplementary feeding at age 6–8 months	71.5	782	Infants 6–8 months of age who received solid, semi-solid or soft foods during the previous *day divided* by Infants 6–8 months of age
Bottle feeding	30.5	1094	Children 0–23 months of age who were fed with a bottle during the previous day *divided by* Children 0–23 months of age
Continuation of breast feeding at age 1	87.5	618	Children 12–15 months of age who received breast milk during the previous day *divided by* Children 12–15 months of age
Continuation of breast feeding at age 2	86.1	302	Children 20–23 months of age who received breast milk during the previous day *divided by* Children 20–23 months of age
Currently breast feeding	87.8	1094	

[a] Computed based on WHO [24].

Table 3 shows the Pearson's bivariate association between selected background characteristics and the main breast feeding indicators. It is seen that initiation of breast feeding within few hours at birth has significant association with sex ($p = 0.46$), age of women ($p = 0.65$) and morbidity of the child ($p = 0.000$). Exclusive breast feeding is significantly associated with literacy status and child morbidity/illness ($p = 0.000$ and $p = 0.010$ respectively). The chi-square values in the last column of table 3 show that age of women ($p = 0.000$) and child morbidity status ($p = 0.045$) have strong significant association with continuation of breast feeding at age 2.

Table 3 – Results of bivariate analysis for initiation of breast feeding, exclusive breast feeding and continuation of breast feeding at age 2 by background variables; *n* = 1094, 234, and 618 respectively

Characteristics	Initiation of breast feeding (*n* = 1094)			Exclusive breast feeding (*n* = 234)			Continuation of breast feeding at age 2 (*n* = 618)		
	Yes	No	Sig.	Yes	No	Sig.	Yes	No	Sig.
Sex									
Male	44.6	9.8	***p* = 0.046***	46.4	8.0	0.257	55.0	7.6	0.169
Female	35.5	10.1		38.2	7.4		31.1	6.3	
Age of women									
Age 15–24	32.4	7.0	***p* = 0.065***	33.5	5.9	0.949	33.8	4.0	**0.000*****
Age 25–34	35.7	9.0		37.7	7.0		42.1	5.0	
Age 35–49	12.0	3.9		13.5	2.4		10.3	5.0	
Wealth index									
Low	61.2	15.2	0.975	63.8	12.5	0.222	66.9	9.6	0.118
Medium	16.9	4.3		18.6	2.6		17.5	3.3	
Better	2.0	0.5		2.2	0.3		1.7	1.0	
Literacy level of women									
Yes	27.7	7.4	0.263	31.4	3.7	**0.000*****	27.8	4.6	0.512
No	52.4	12.5		53.2	11.7		58.3	9.3	
Marital form									
Polygamous	11.7	3.5		12.4	2.7	0.174	10.9	3.0	0.104
Monogamous	68.4	16.5		72.2	12.6		75.2	10.9	
Health problem during the last 1 month									
Yes	43.9	8.1	**(0.000)*****	45.3	6.7	**0.010***	50.3	6.3	**0.045***
No	36.2	11.8		39.3	8.7		35.8	7.6	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

The percentage distribution of the score for frequency of feeding solids/semi-solid foods in the past 24 h preceding the survey (number of meals and snacks) shows that a large majority of the children in all the age categories were fed less number of times than the required. For instance, at age 6–8, the baby should begin drinking less breast milk and take solid/semi solid foods (such as vegetables and fruits) as a source of nutrition, and the amount is expected to be four servings. The result however shows that 15.5% were reported to take no complementary feeding at this age and another 13.6% were fed only one or two times a day (Table 4).

Table 4 – Results of bivariate analysis for age of the child and frequency of feeding (n = 860), Sidama Zone, Southern Ethiopia

Indicators	Age 6–8 months (n = 110)	Age 9–11 months (n = 73)	Age 12–23 months (n = 677)	Total (n = 860)	Chi-square test, χ^2
Number of times the child is fed					
not eating	15.5	8.2	1.0	3.5	**0.000*** **
one time	10.0		4.0	4.4	
two times	3.6	5.5	11.8	10.2	
three times	40.0	52.1	44.9	44.9	
four times	22.7	27.4	27.6	27.0	
5–6 times	2.7	6.8	8.1	7.3	
more than six times	5.5		2.5	2.7	

*** $p < 0.001$.

Table 5 shows the distribution of the respondents by infant and child complementary feeding practices at different ages. The commonly used food groups are used to compare rates for the three age categories.

The complementary feeding rate at age 6–8 months is very critical since this is the time when young children start receiving "semi-solid or solid foods" in addition to breast milk. The percentage distribution reveals that fruits and vegetables are fed to relatively larger proportion of infants and young children (60% and 51.8% respectively) while smaller proportion of mothers reported feeding cereal (17.3%) and butter/oil (28.2%). For the remaining age categories, there is slight increase in the proportion of mothers feeding all the eight food groups to their young children. The results of the chi-square analysis indicated that there is some significant association between feeding selected groups and age of the child. For instance, there is strong significant association between age of the child and cereal consumption (p = 0.000), which suggests that feeding cereal is age dependent. There is also substantial increase in the proportion of feeding egg and vegetables (p = 0.050 and p = 0.000 respectively).

With regard to the food groups consumed, there is substantial decline in the number of food groups fed to young child in the age group 6–8. In the remaining two age categories, larger proportion of them consumed greater than four food groups. The chi-square test has also showed strong significant association between age of the child and the number of food groups consumed (p = 0.000).

In Table 6, the results of best fitting multiple regression analysis for ten independent variables are presented. Four of the variables were significant predictors of infant and child complementary feedings practices.

Taking the beta (β) coefficients as indicator of the weight of a predictor on the response variable, the most important predictors explaining the variability in the level of infant/child complementary feeding are: age of the child, child faced health problem during 1 month prior to survey date, pregnancy reaction/wontedness of the child at pregnancy, and literacy status of the women.

A change in child's age resulted in an increase of 0.489 units in the level of complementary feeding practices. Child morbidity/illness status during one month period before the survey date was associated with a decrease in the level of complementary feeding by 0.555. Women's reaction on their pregnancy (wontedness of the child at pregnancy, coded as wanted /1/, wanted to wait /2/ and never wanted /3/) was associated with lower dietary diversity by 0.323 units. Finally, an increase in the literacy status of the mother resulted in an increase in the level of dietary diversity for infants and children.

Discussion

The present study has primarily aimed at examining the infant and child feeding practices (children below 24 months) in Sidama Zone of Southern Ethiopia. The study employed the recent WHO measurement to gauge breast feeding and complementary feeding practices.

The result of the study has shown that breast feeding is universal where almost all women have ever breast fed their children. It is noted that the larger majority of women initiated breast feeding early (just at birth). The computed figure for the sample women is much higher than

Table 5 – Results of bivariate analysis for age of the child and complementary feeding practices (*n* = 860), Sidama Zone, Southern Ethiopia

Indicators	Age 6–8 months (*n* = 110)	Age 9–11 months (*n* = 73)	Age 12–23 months (*n* = 677)	Total (*n* = 860)	Chi-square test, χ^2
Consumed food from the following food groups					
Cereal	17.3	23.3	35.5	32.1	**0.000*****
Roots/tuber	34.5	37.0	42.7	41.2	0.205
Egg	35.5	38.4	46.1	44.1	0.050
Butter/oil	28.2	34.2	40.0	38.0	**0.047***
Vegetables	51.8	52.1	69.3	65.6	**0.000*****
Fruits	60.0	63.0	70.0	68.1	0.069
Meat/fish	38.2	42.5	55.4	52.1	**0.001****
Diary	48.2	47.9	51.8	51.0	0.665
Food groups consumed					
Consumed 0–2 food groups	37.3	45.2	27.3	30.1	**0.000*****
Consumed 3–4 food groups	35.5	20.5	26.9	27.4	
Consumed more than 4 food groups	27.3	34.2	45.8	42.4	
Mean number and standard deviation of food groups consumed	1.90 + 0.800	1.89 +0.89	2.18 +0.83	2.12 + 0.84	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 6 – Results of the OLS regression for selected explanatory variables and number of food groups consumed, Sidama Zone, Southern Ethiopia (*n* = 860)

Variables	β	Std. Error	*Sig.*
(Constant)	4.145	0.688	0.000
Age of the child	0.489	0.116	0.000***
sex of the young child	0.051	0.163	0.755
If the child had health problem during 1 month preceding the survey	–0.555	0.163	0.001**
Age of women	0.145	0.123	0.237
Pregnancy reaction	–0.323	0.096	0.001**
Literacy level of women	0.341	0.169	0.044*
Household Size	–0.089	0.137	0.518
Educational status of the household head	–0.080	0.062	0.202
Wealth Index	0.278	0.169	0.100
Agro-climatic zone	0.079	0.169	0.639

The Dependent Variable is food groups consumed.
Pregnancy reaction: wanted (1), wanted to wait (2) and never wanted (3).
Wealth index is a continuous variable measured by sum of ownership of nine common household assets: electricity, sewing machine, cart, mobile phone, flashlight, corrugated iron roofing, bike, radio and kerosene lamp.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

previous regional level reports by Guyon et al. [27] which indicated that 50% of the 405 women surveyed initiated breast feeding during the first day of birth. The EDHS reported a rate of 71% women initiating breast feeding in the Southern Ethiopia (*n* = 2500). Compared to some rural studies in Africa, the figure reported for the study population is relatively higher. A study in Rural Ghana [5], for instance, reported initiation of breast feeding within the first day of birth in 71% of infants and by the end of day 3 in all but 1.3% of them; and overall late initiation (after day 1) was associated with a 2.4-fold increase in risk of death. The yellow or golden first milk produced in the first days (i.e. colostrums) is an important source of nutrition and immune protection for the newborn. The chi-square analysis revealed that the initiation of breast feeding is associated with sex of the child, age and health status of the child.

The analysis based on the infants age 0–6 months (*n* = 234) revealed that about 56% of women practiced exclusive breast feeding during the survey. In a situation of common preventable health problems in the study area and one of the highest infant mortality (96 deaths per 1000 births), exclusive breast feeding for 6 months confers many benefits to the infant and the mother. The protective effects of exclusive breast feeding against gastrointestinal infections [28], reduction of the risk of mortality due to diarrhea and other infections [29] are well documented. A recent study in southwestern Ethiopia [30] showed that children who never breast fed (OR = 13.74) are more likely to die than their counterparts. When infants with partial breast feeding were contrasted with those on exclusive breast feeding, a relative risk of developing diarrhea of 5.2 (95% confidence interval 3.00–9.10) was obtained [31]. The study in rural Ghana [5] documented that 70% were exclusively breastfed during the neonatal period, and the risk of neonatal death was fourfold higher in children given

milk-based fluids or solids in addition to breast milk. In poor resource areas like the study population, where the negative impact of HIV/AIDS is high, practice of exclusive breast feeding can have greater benefit for the prevention of mother to child transmission of HIV [32].

In relation to the importance of the exclusive breast feeding, it was observed that there is a tendency to consider bottle feeding as complementary food among women in the study area. About 30% of the women (n = 1094) reported that they were bottle feeding their child at or before age 6 months. Even after excluding those women with a child less than 6 months, the result shows that bottle feeding rate (in the previous 24 h) is relatively higher (greater than 29%) for all children in the three age categories. When bottle feeding is associated with unhygienic conditions and poor preparation of infant formula, it puts the infant at a great risk of illness, resulting in increased risk of mortality.

Once women start breast feeding their children, large majority of women reported consistently continuing the practice for longer period. In this study, it is seen that more than 87% of the respondents continued breast feeding until age 1 and about 86% reported continuing until age 2. Breast milk is an important source of energy and nutrients in children 6–23 months of age. Breast milk can provide one half or more of a child's energy needs between 6 and 12 months of age, and one third of energy needs between 12 and 24 months [33]. The WHO and UNICEF recommend breast feeding up to 2 years or beyond [34].

Introduction of complementary food is necessary at 6–7 months to meet energy and nutrient requirements. Due to either failure or delay of the complementary feeding at appropriate time retardation in development occurs [1, 24]. The result indicated that complementary feeding (diet diversity, frequency) rates are somewhat at precarious situation compared to the universally recommended age specific rates. One of the very striking results is that nearly 15.5% of the children 6–8 months did not start consuming complementary food during the survey. However, the figure is much better than the national level rate reported by EDHS and ESHE project. The EDHS 2005 recorded about 50% of the children in this age group receiving complementary food [19]. Because this is a time when infants need foods other than breast milk to maintain health and growth, the delay in the introduction of complementary foods is an important cause of the serious rates of malnutrition seen in young children in Ethiopia [27]. A community assessment on "timely complementary feeding" in three regions of Ethiopia (Amhara, Oromia and SNNPR) documented that only 39% of children 6–9 months received "semi-solid or solid foods" in addition to breast milk in the 24 h preceding the survey. The rate for Southern region was 61%. A study conducted in the southwestern Ethiopia reported median age of initiation of supplementary feeding of 4.0 months [30].

The results of the chi-square indicate that there is some significant association between age of the child and feeding selected groups such as cereal consumption (p = 0.000), which suggests that feeding cereal is age dependent. There was also substantial increase in the proportion of feeding egg and vegetables (p = 0.050 and p = 0.000 respectively) with age.

Though there seems to be substantial increment in the percentages of consumption of nearly all food groups for the three age groups, the proportions within each age group is very small. The rates are very critical for children 6–8 months of age since this is the time when young children start receiving "semi-solid or solid foods" in addition to breast milk. It is shown that a larger proportion of children in the age groups 6–8 and 9–11 months did not get the core food groups such as cereal, egg, and meat. For instance, at 8–12 months of age, a baby will be ready to try strained or finely chopped meats. Because breast milk is not a rich source of iron, iron-rich foods such as meats should be given. Contrary to this, the rate reported for meat consumption at this age shows that about 62% of the children did not start consuming meat/fish during the survey. Similarly 45 and 55% of the children at age 9–11 months and above 12 months did not take meat/fish food groups respectively. This was further examined through the number of food groups consumed which indicated substantial decline in the number of food groups fed to young children in the age group 6–8 compared to other groups. In the remaining two age categories, larger proportion of them consumed greater than four food groups. The chi-square test has also showed strong significant association between age of the child and the number of food groups consumed (p = 0.000).

The results of the regression analysis showed that out of the ten hypothesized predictors, four of them (age of the child, occurrence of health problem during 1 month prior to survey date, pregnancy reaction /wontedness of the child at pregnancy/, and literacy status) have appeared most important predictors explaining the variability in the level of infant/child feeding practices among the study population. The positive relationship between the age of the child and level of dietary intake is expected. There is a tendency of decline in food intake among children during illness. Mothers were asked if they wanted the pregnancy to happen (wanted /1/, wanted to wait /2/ and never wanted /3/) and it was seen that as their reaction becomes negative, the likelihood of caring the child reduces.

Conclusion

The study was conducted on a randomly drawn sample of 1094 households from Sidama Zone of Southern Ethiopia. The study documented that there are positive signs on infant and child feeding practices which should be promoted. The relatively higher rate of exclusive breast feeding during the first half of infancy and continued breast feeding through the second year of life and beyond are very good examples. There are also certain practices that require attention which include the widespread use of bottles, delayed introduction of complementary foods, and low dietary diversity throughout the first 2 years of life.

Finally, it is worth mentioning that the study is a cross sectional retrospective measure of child feeding practices, the probability of recall bias and missreporting of events likely to happen. Besides, the variables used in the analysis were collected at specific point in time, making it difficult linking their effects with the outcome variable. Despite

such few weaknesses arising out of the very nature of the study, it is believed that the present study contributes to our understanding of the depth of the problem in the study area with some practical relevance to other populations having similar characteristics.

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