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Research Article

Timely Initiation of Complementary Feeding Practice among Mothers and Care Givers of Children Age 6 To 24 Months in Goba Town, Southeast Ethiopia

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ABSTRACT

Background: Complementary feeding is the introduction of solid or semi -solid foods at six months of age with small amounts and increasing the quantity as the child gets older, while maintaining frequent breast feeding. The target range for complementary feeding is generally taking to be 6-24 months while breast feeding continues for up to two years of age or beyond. Inappropriate initiation of complementary feeding practices is a major obstacle in attaining and maintaining child health.

Objective: To assess prevalence of timely initiation of complementary feeding practice among mothers of children aged from 6 to 24 months living in Goba town, Bale zone, south east Ethiopia from April 20 to June 20, 2019.

Methodology: Community-based cross-sectional study was conducted among 346 mothers or care givers who have children 6-24 months of age living in 03 kebele, Goba town, selected by simple random sampling technique. Data was collected by trained interviewer using semi-structured questionnaires filled for respondent after data collection, all collected data analyzed by SPSS software version 20.

Result: A total of 346 mothers who had children 6 to 24 months of age were responded to the questionnaire. Ethnic composition shows that Oromo 175 (50.6%), Amharic accounts for, 151 (43.6%), Others 12 (3.5%) and Tigre 8 (2.3%). Regarding to religion Orthodox237 (68.5%), Muslim 89(25.7) and protestant religion 20(5.8%). Among the respondent occupational status 230(66.5%) were house wife, 59(17.1%) merchants, 47(13.6%) governmental workers and students are the least dominant. Marital status mother and care giver 340(98.3%) married and 4(1.2%) and 2(0.6%) of mother and care giver were single and divorced respectively. About 292(84.4%) mothers had started complementary feeding at the right time, that is 6 month of age, while 35(10.1%) of mother had started in the age of before six months, and the rest 19(5.5%) mothers started by the age of after six months.

Conclusion: In this study, initiation of complementary feeding at the recommended time of six months was seen in the majority of children. Inadequate let down of breast milk, due to medical illness, and breast problem were some of the reasons mentioned by mothers who initiated early whereas lack of knowledge were they started complementary feeding, immature stomach, and the advice of family members were the reasons for late initiation of CF.

Keywords: Timely initiation, Complementary feeding practice, Mothers and care givers, Children age 6 to 24 months

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Background

Complementary feeding is the introduction of solid or semi -solid foods at six months of age with small amounts and increasing the quantity as the child gets older, while maintaining frequent breast feeding. The target range for complementary feeding is generally taking to be 6-23 months while breast feeding continues for up to two years of age or beyond [1]. Timely initiation of appropriate nutrient intake, in quantity, bioavailability, and timing in infancy are essential for optimal growth and development. Complementary food is the food other than breast milk, infant formula or follow-on formula given to infants and these can be liquids, semi-liquids, and solids et al.

Appropriate complementary feeding depends on accurate information and skilled support from the family, community and health care system. Inadequate knowledge about appropriate foods and feeding practices is often a greater determinant of malnutrition than the lack of food. Moreover, diversified approaches are requiring ensuring access to foods that will adequately meet energy and nutrient needs of growing children. Appropriate complementary feeding is measured entails; introduction of complementary foods at 6 months with continued breastfeeding up to at least 2 years and beyond, ccorrect feeding frequency for age and consumption of a diverse diet [2].

In addition, low-cost complementary foods, prepared with locally available ingredients using suitable small-scale production technologies in community settings, can help to meet the nutritional needs of older infants and young children [3].

The global rate of exclusive breast feeding remains low and is not improving -indeed in some of the largest countries IYCF results are deteriorating. high stunting rates persist in many countries, with feeding and maternal nutrition receiving little attention many countries do not implement effective, comprehensive and large scale IYCF programmers and only allocate a very small proportion of available nutrition resources [3].

World health organization recommends exclusive breast feeding and delaying the introduction of solid foods to an infant's diet until 6 months' post-partum [4]. Since this practice will displace breast feeding and place the baby to develop diseases and finally malnutrition. However, in many countries this recommendation this followed by few mothers, and earlier complementary feeding onto solid is a commonly reported global practice a prospective, observational study in Ireland revealed that among 401 pregnant women only one mother (0.2%) complied with the who recommendation to exclusive breast feeding up to 6 months. ninety one (22.6%) infants were prematurely complemented onto solid at 12 weeks [5].

Inadequate complementary feeding practices results in under nutrition which suffer millions of children globally. Inappropriate initiation of complementary feeding practices is a major obstacle in attaining and maintaining child health. It is a major cause of malnutrition which directly or indirectly results 60% of the 10.9 million deaths annually among children under five Well over two-thirds of these deaths, which are often associated with inappropriate feeding practices, occur during the first year of life. No more than 35% of infants worldwide are exclusively breastfed during the first four months of life; complementary feeding frequently begins too early or too late, and foods are often nutritionally inadequate and unsafe [6].

In developing countries total of 152 million, 101 million and 51 million children under the age of five are estimated to be stunted, underweight and wasted, respectively which is resulted from late initiation complementary feeding practices. Over one third of under-five mortality is caused by malnutrition related to inadequate complementary feeding [2].

In general, inappropriate and poor initiation of complementary feeding practices means that many children continue to be vulnerable to irreversible outcomes of stunting, poor cognitive development, and significantly increased risk of infectious diseases leading to gastroenteritis, diarrhea and acute respiratory infection [7].

Infant formula supplementation at any age is uncommon in Ethiopia. Among breastfeeding Children under age two, very few (2 percent) consume infant formula. However, a much higher proportion (18 percent) receives other milk or other liquids. The introduction of other liquids, such as water, juice, and formula, takes place earlier than the recommended introduction at age six months [8].

Inappropriate initiation complementary feeding practice is major cause of malnutrition in Ethiopia. Nationally, 10% of Ethiopian children are wasted, and 3% are severely wasted and 44% of children under age five are stunted, and 21% of children are severely stunted [9].

METHODS

Study Area, Design and Period

A community based cross-sectional study was conducted from April 20, 2019-June 20, 2019. The study was conducted in Goba town, Bale zone, Oromia regional state, south east Ethiopia. Goba town is located 445 km from Addis Ababa this town has a latitude and longitude of 7°0′N 39°59′E and an elevation of 2,743 meters above sea level. The total population is estimated to be over 32,000 on the area of the city [10] among this population 15182 is male, 16843 female and 4710 children were under five. Regarding to religion distribution orthodox the dominant religion which accounts 68.84% and Muslim and protestant accounts 23.12%and 5.4% respectively. The two largest ethnic groups reported were the Oromo 63.13%, and Amhara 33.3%; all other ethnic groups made up 3.5% of the population. Goba town has five kebele among this 03 was selected for this study and all children age 6-24 months whose randomly selected were included (Figures 1-3).

Sample Size Determination

The sample size for the study was calculated using single population proportion formula by Considering p= 71.2% prevalence of timely initiation of complementary feeding in a study done in Wolaita Sodo town, southern Ethiopia and 95% confidence level, Margin of error, assumed to be 5% . By considering 10% non-response rate the final sample size was 346.

Sampling Technique and Procedure

Simple random and systematic sampling technique was employed for this study. The primary sampling unit was selected from all Goba town, then the town divided 5 kebele among five kebele 03 kebele was selected by simple random sampling technique and 346 mothers were selected by systematic sampling technique. Therefore all mothers of children aged 6-24 months in selected kebele were included in this study.

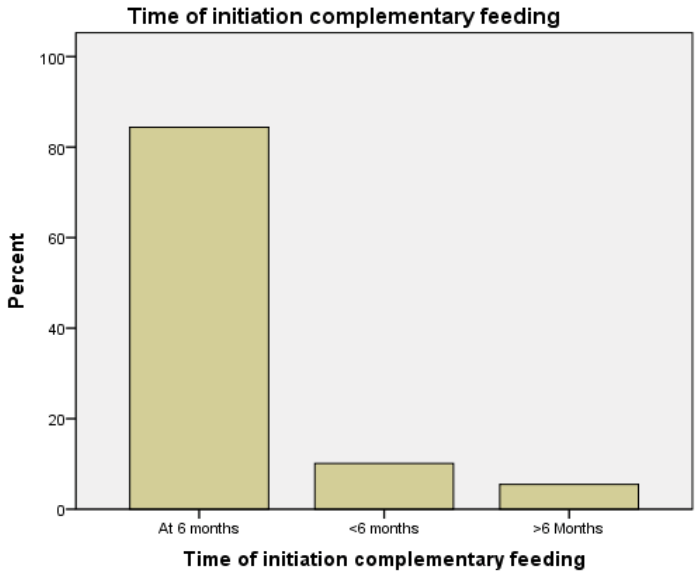

Figure 1: Time of introduce complementary feeding among child and care giver of child aged 6-24 months.

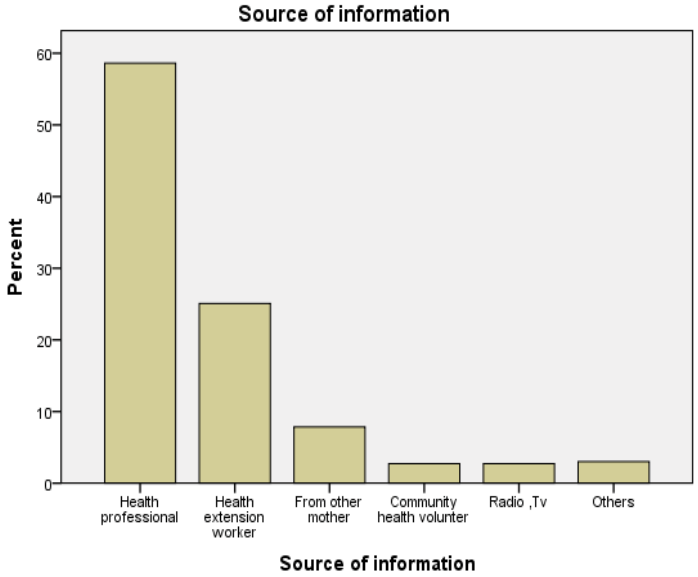

Figure 2: Source of knowledge on timely introducing of complementary feeding.

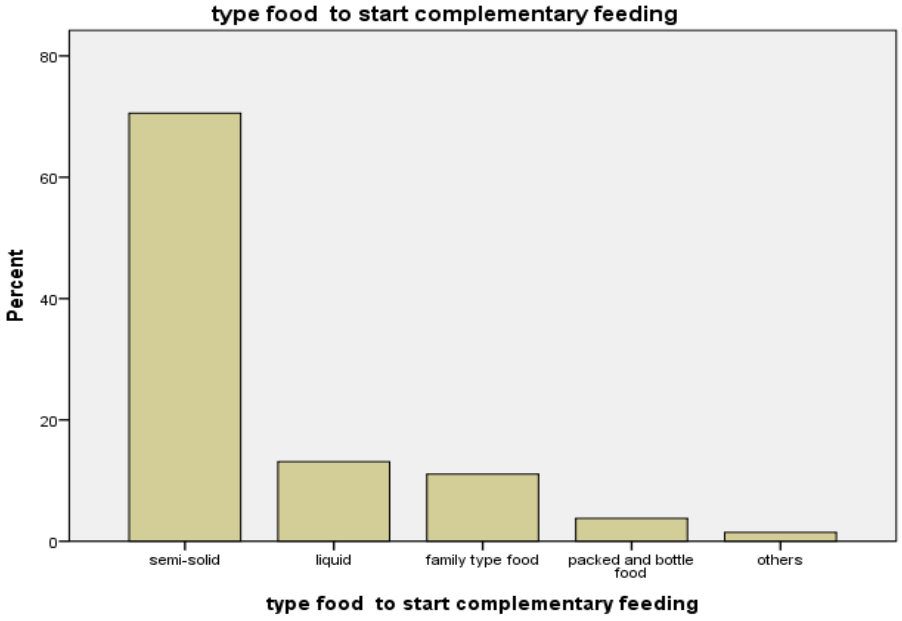

Figure 3: SType of food to start complementary feeding.

Data Collection Tools

Data was collected by semi-structured questionnaire is from literature, early initiation of complementary feeding and associated factors among infants and young children, which is used to ass's timely initiation of complementary feeding and associated factors. The questionnaire was arranged and modified to address based on the objectives. Therefore, the questionnaire was divided in to two parts: the first part addressing the socio demographic characteristics of the mother or guardian and the infant followed by the second part which covers maternal reproductive history, health service utilization and complementary feeding. The questionnaire originally is prepared in English then translated to local language orally to"Afan Oromo and Amharic" during interview by the help of language translators in order to create better understanding for the respondents.

Data Quality Control

The principal investigators that mean who collect data and undergo quality assessment was has an ongoing supervision each day during data collection to ensure quality of data by checking filled format for their completeness's and consistency. The data collectors (investigators) were train for one day by supervisor before they are assigned to collect the data. The data was checked daily for its completeness and those with more than one incomplete data were discarded.

Before actual data collection, the questionnaire was pre-tested for validity and reliability on 5% (15) mothers; thereby possible adjustment or modification was made accordingly. The pretest was done in Hasasa town among mother having child aged 6-24 months.

Data Processing and Analysis

After insuring the completeness of each questionnaires data was entered into the computer and analyzed, processed using and SPSS software version 20 for window package, and descriptive statistic was used, then finally summarized and compiled in frequencies, percent, texts, tables, charts and graphs.

Operational Definitions

Early initiation of complementary feeding: It is initiation of additional food other than breast milk for a young child before six months of age [10-15].

Family planning utilization: Use of birth control for child spacing for better growth of child.

Kebele: Is the smallest administrative unit of Ethiopia.

Late initiation of complementary feeding: Is the introduction of solid and semisolid foods after completed 6 months (180 days) of age according to WHO guild lines [1].

Mother's knowledge on complementary feeding: Assessing the mother's weather they know or not know the exact time when complementary feeding is started.

Post-natal care: Care given to mother from delivery to 42 days.

Timely initiation of complementary Feeding: It is initiation of additional food other than breast milk for young child at sixth months of age along with continued breast feeding [10].

Ethical consideration

Before the actual data collection, ethical clearance letter was obtained from student research program of Madda Walabu University College of medicine and health sciences. The respondents were informed about the purpose of the study, and their oral consent was obtained. The respondents' right to refuse or withdraw from participating in the interview was fully maintained and the information collected was not being described in related to individuals' names. Moreover, letter of permission was being issued from Madda Walabu University Goba referral hospital school of Health Sciences research & community service directorate, prior to the actual data collection.

RESULTS

Socio- demographic Characteristics

A total of 346 mothers who had children 6 to 24 months of age were responded to the questionnaire generating a response rate of 100%. Ethnic composition shows that Oromo and Amhara accounts for 175 (50.6%), and 151 (43.6%) respectively. with the least dominant ethnic group were Tigre with the frequency of 8 (2.3%) respectively. Regarding to religion most of them were orthodox religion follower with frequent of 237 (68.5%) and with the least dominant religion is protestant religion with the frequency of 20(5.8%). Regarding the educational status of the respondent most of them about 151(43.6 %) are primary school, 72(20.8%) secondary, 42(12.1%) above secondary and 51(14.7%) were not read and write. Among the entire respondent around 230(66.5%) of them were house wife which is the most dominant, and around 59(17.1%) of respondent are merchants, 47(13.6%) of respondents are governmental workers and students are the least dominant. Around 340(98.3%) that is majority of the respondent are married and 4(1.2%) and 2 (0.6%) of mother and care giver are single and divorced respectively Table 1.

Child Characteristics and Feeding Patterns

Children 6-24 months were included in the study. 167(48.3%) were 6-10 months and 63(18.2%) children were 11-15 month of age. From this age group 172(49.7%) and 174(50.3%) were male and female respectively. About 292(84.4%) mothers had started complementary feeding at the right time, that is 6 month of age, while 35(10.1%) of mother had started in the age of before six months, and the rest 19(5.5%) mothers started by the age of after six months. 18(51%) mothers who started early believed that milk not enough, 6(17.5%)due to medical illness ,5(14%)due to breast problem, other mother practice it and cultural back ground accounts about 6(17.5%). Among mothers started lately (35.7%) said didn't know when to start, (12.9%) stomach is not matured, (40%) breast milk is enough, (11.4%) advice of family and other mother practice it Table 2.

Maternal Characteristics and Medical History of Children

Among the study participants interviewed, all 346 (100%) were biological mothers of the children. 58.2% mothers had three to four antenatal care visit during the last pregnancy and 20.8% had 4 and more visits. From all interviewed mothers 171 (49.4%) mother attend delivery at hospital, health center 104 (30.1%) and 71 (20.5%) at home. The mean of total family size were 1.6387 ± 0.74569(SD) and about 171 child birth interval was two year and 132 above two (Table 3).

Table 1: Socio-demographic characteristic and feeding practice of study participants.

Variable	Category	Frequency	Percent
Maternal age	15-24	103	29.7
	25-34	176	49.9
	Above 35	67	19.4
Educational status	Not read and write	51	14.7
	Read and write	30	8.7
	Primary	151	43.6
	Secondary	72	12.1
	Above secondary	42	20.9
Ethnicity	Oromo	175	50.6
	Amhara	151	43.6
	Tigre	8	2.3
	Others	12	3.5
Religion	Orthodox	237	68.5
	Muslim	89	25.7
	Protestant	20	5.8
Marital status	Married	340	98.3
	Single	4	1.2
	Divorced	2	0.6
Economic status	Below 500 ETB	59	17.1
	500-1500 ETB	133	38.4
	1501-2000 ETB	132	38.2
	More than 2000	22	6.4
Age during marriage	15-19	209	60.4
	20-24	95	27.5
	25-29	28	8.1
	Above 29	14	4.1
Occupational status	House wife	230	66.5
	Governmental workers	47	13.6
	Merchants	59	17.1
	Students	5	1.4

Table 2: Child characteristics and feeding patterns in Goba town, south Eastern Ethiopia.

Variable	Category	Frequency	percentage
Age of child	6-10 months	167	48.3
	11-15 months	63	18.2
	16-20 months	14	4.0
	21-24 months	102	29.5
Sex of child	Male	172	49.7
	Female	174	50.3
Age category for time to initiate complementary feeding	at 6 months	292	84.4
	<6 months	35	10.1
	>6 Months	19	5.5
Time to initiate complementary	Timely	292	84.4
Reasons to initiate complementary feeding early	my breast milk is not sufficient	18	51
	due to breast problem	5	14
	due to medical illness	6	17.5
	other mother practice it	3	8.75
	this is our culture	3	8.75
Reasons to initiate complementary feeding lately	Breast milk is enough	8	40
	Didn't know when to start	6	35.7
	Advice of family members and other mother	2	11.4
	Child may not able to digest it	3	12.9

Table 3: Maternal characteristics and medical history of children 6-24 months of age in Goba town, Eastern Ethiopia.

Variable	Category	Frequency	percent
Maternal ANC follow up	One times	67	19.5
	Two times	201	58.2
	Three times	71	20.8
	Four and above	7	1.6
Place of delivery	Hospital	171	49.4
	Health center	104	30.1
	Home delivery	71	20.5
PNC follow up of mother	Yes	210	60.7
	No	136	39.3
Numbers of children in the house	0-3 children	177	51.2
	4-6 children	121	35
	7-10 children	44	12.7
	Above 10	4	1.2
Birth interval	<2 years	43	12.6
	2 year	171	49.1
	>2 year	32	38.4
Child immunization history	Yes	305	88.1
	No	39	11.9
Child immunization certificate	Yes	207	59.8
	No	139	40.2
Family planning utilization	Yes	246	71.1
	No	100	28.9

DISCUSSION

In this study the prevalence of timely initiation of complementary feeding was 84.4% which is higher than the study from study done in India found that more than three fourth of mothers had started complementary feeding at 6 months [11,16]. In the present study, the median age of starting complementary feeding was six months. Where as in a country like China 76% of mothers were introduced complementary food to their infant between 4 and 6 months of age and Timely complementary feeding was 41.6% [17,12]. Studies from the UK, Belgium and Sweden highlight that a large proportion of infants are prematurely complement at, 4 months of age [5,18]. However, in our study only 10.1% prematurely started complementary feeding. The prevalence of timely initiation of complementary feeding in this study is much higher than the national prevalence of timely initiation of complementary feeding (62.5) [13,19,20] and also higher than the study done in KambaWoreda south west Ethiopia revealed that among 392 respondents, 59.6% mothers start complementary feeding early before six months and 40.4% started complementary feeding at six months and relatively higher than study done in northern Ethiopia , in mekele the prevalence of timely initiated complementary feeding at the age of six months was 62.8% [14,21]. This relatively higher prevalence of timely initiation of complementary feeding at six months could be due to the communities' awareness towards the time of initiation of complementary feeding by different health information providers like health professional workers, HEW providing information which has contributed to high coverage of health institutional delivery and postnatal care. Media has also a great role for awareness creation to initiate complementary feeding on time in Goba town [22-25].

CONCLUSION

In this study, initiation of complementary feeding at the recommended time of six months was seen in the majority of children. High institutional delivery accompanied with higher ANC follow up contributes to this finding. Inadequate let down of breast milk, increased appetite to eat, and other information sources were some of the. Reasons mentioned by mothers who initiated early whereas immature stomach and the perception that breast feeding is enough were the reasons for late initiation of CF.

Consent for Publication

Not applicable.

Availability of Supporting Data

Data will be available upon request.

Competing Interests

The authors have no any competing interest and all have agreed the manuscript for publication.

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