

Timely Initiation of Complementary Feeding and Associated Factors among Children Aged 6 to 12 Months in Addis Ababa Ethiopia, 2015

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Abstract

Introduction: Appropriate nutrient intake and/or complementary feeding in quantity, bioavailability and timely in infancy period are essential for optimal growth and development. Initiation of safe and nutritionally adequate complementary foods at 6 month is crucial to achieve optimal growth, development and health. Exclusive breastfeeding) for the first six months of life is critical for the wellbeing of the infant. This study aim was to assess the prevalence of timely initiation of complementary feeding and associated factors among infants 6 to 12 months age in Addis Ababa.

Methods: A cross-sectional study design was conducted from 30th February to 20th March 2015 on 400 randomly selected mothers with infants aged from six months to one year in five randomly selected health centers in Addis Ababa. Data on demographic and other risk factors of timely initiating of complementary feeding were collected using semi-structured questionnaire. Data entry, cleaning and analysis was done by using Epidata 3.1 and SPSS version 20. Logistic regressions employed to assess the relationship between dependent and independent variables.

Results: It was found that the prevalence of timely initiation of complementary feeding at sixth month was 55.2%. Occupation of mother, having Antenatal care follow-up, believed time of initiation of complementary feeding and place of delivery were found to be independent predictors of timely initiation of complementary feeding.

Conclusions: Around half of mothers initiated timely complementary feeding. The determinates of were Occupation of mother, having Antenatal care follow up, believed time of initiation of complementary feeding and place of delivery in which all of them are modifiable factors. Therefore, mothers should be encouraged to have Antenatal care follow up and deliver at health institution government needs to set new strategies to improve infant child feeding practices for mothers who are illiterate and work outside at home.

Keywords: Complementary feeding; Timely; Initiation

Abbreviations: ANC: Antenatal Care; CI: Confidence Interval; EBF: Exclusive Breastfeeding; SD: Standard Deviation; IYCF: Infant and Young Child Feeding; PNC: Post Natal Care

Introduction

Complementary food is, infant formula or follow-on formula given to infants in a form of liquids, semi-liquids, and solids other than breast milk. Complementary foods must also be nutritionally adequate and provide the bio available nutrients required, in combination with breast milk, to meet all needs for growth and optimal health [1]. Since the nutrients in breast milk are generally more bio available than from other sources, breast milk remains an important component of nutrition after the introduction of solids [1,2].

Appropriate complementary feeding depends on accurate information and skilled support from the family, community and health care system [1]. Inadequate knowledge about appropriate foods

and feeding practices is often a greater determinant of malnutrition than the lack of food [2].

Providing sound and culture-specific nutrition counseling to mothers of young children and recommending the widest possible use of indigenous foodstuffs will help for local foods preparation and safely in the home [3]. Initiate safe and nutritionally adequate complementary foods at 6 month is crucial to achieve optimal growth, development and health [4].

The world health organization has defined complementary feeding period as the period during which other foods or liquids are provided along with breast milk and any nutrient containing foods or liquids given to young children after exclusive breastfeeding is critical and adequate for the first six months of child [4-8]. The most crucial time to meet child's nutritional requirements is the first two years of life [4,8].

Inappropriate complementary feeding practices remain as major public health problem in many developing countries intern many children are victim of the malpractice [4]. Less than one-third of 6-23

months old children met the minimum criteria for dietary diversity [8,9], and only 50% received the minimum number of meals and only 21% of children aged 6-23 months met the minimum criteria [9]. Infant formula supplementation at any age is uncommon in Ethiopia [10].

The recommended timing for the introduction of solid foods for infants varies between countries [11,12]. Due to the high prevalence of inappropriate child feeding practices and the importance of exclusive breastfeeding, the Ethiopian government developed the Infant and Young Child Feeding (IYCF) guideline in 2004 to prevent malnutrition [13].

Malnutrition has been responsible, directly or indirectly 10.9 million deaths annually among children under five. Most of the deaths are often associated with inappropriate feeding practices [12], lack of knowledge and skill about complementary feeding [12,13], lack of sufficient food (food insecurity) [4,8] and lack of timely initiating of complementary feeding [4,12].

Evidence showed that identifying the factors to initiate complementary feeding is used to cure diseases and death related to inappropriate complementary feeding [14]. Therefore, this study aim was to assess the prevalence and associated factors of complementary feeding among infants 6 to 12 months age in Addis Ababa.

Methods

Study setting, design and period

This facility based cross-sectional study was conducted in Addis Ababa from 30th February to 20th March 2015. Addis Ababa is the administrative and business capital of Ethiopia with total population of 2.7 million during the 2007 national population and housing census. The city totally holds 13 government hospitals, 88 health centers and 760 private clinics [10].

Sample size determination and sampling technique: Sample size was determined using single population proportion formula by considering P- value of 62% from previous research [15], 95% confident interval (CI), and 5% margin of error.

$$n = (Z^2 \alpha / 2 \cdot P(1-P)) / d^2$$

Where: -

n=the required minimum sample size

z=Level of confidence 95%, $Z_{\alpha/2}=1.96$

d=Margin of error, assumed to be 5%

p=Prevalence of timely initiation of complementary feeding

$$n = 1.69 \times 1.96 \times 0.62(1-0.62) / 0.05^2 = 362$$

By considering 10% non-response rate the final sample size was 400.

In Addis Ababa city, there are 88 health centres, and 5 of them were selected by using simple random sampling techniques. Based on the number of clients/patients who visited each health centre during the previous one year, the total sample size was proportionally allocated to each selected health centres. Finally, interviewing of the mothers was carried out in each selected department/units as participants using systematic sampling methods by considering the 1st comers as starting point, and then every other at exit time.

Data collection techniques

After reviewing of the relevant literature, the questionnaire was adapted as appropriate to address the study objectives. Primarily the questionnaires were prepared in English and translated to local language (Amharic) and the Amharic version was used for interview.

Finally, five data collectors, who were diploma holders, know the local language, and resident of the study were selected to interview the mothers at the exit time from 30th February to 20th March 2015.

Data quality assurance

Questionnaire was prepared in English and translated to Amharic, and re translated back to English to make sure the consistency of the questionnaire. Pre-test of the tool was performed outside the study area to readjust the questionnaire.

Intensive training for data collectors was given for two days. Continues supervision of data collection process was carried out to assure the quality of data. Finally, the collected data was carefully checked on daily basis for completeness, outlier and missing value as well as consistencies.

Data analysis

The collected data were cleaned, coded and entered into EpiData 3.1 statistical software package. The statistical analysis was done using SPSS version 20. Frequency distribution for selected variables was performed. The statistical significance and strength of the association between independent variables and an outcome variable was measured by bivariate logistic regression model.

A variable P value less than 0.25 was transferred to multivariable logistic regression model to adjust confounders' effects and a p value less than 0.05 was considered as significantly associated in this model. Finally, the results of the study were presented using tables, figures and texts based on the data obtained.

Ethical clearance

The study was approved by the Scientific Ethical Review Committee of Addis Ababa University, and Addis Ababa health office. Informed assent was obtained from mothers after detailed explanation of the purpose of the study. Any involvement of the mothers was after their complete consent. Mothers were told as they would have the right to withdraw from the study at any time during the interview.

Results

Socio-demographic characteristics

From a total of 400 women with 6-12 month children, 398 of them participated in this study with a response rate 99.5%. From these, 169 (43.3%) of the respondents were in the age range of 15-19 years with the mean (SD) age of 27.32 (\pm 5.85).

Regarding to their educational status, 154 (38.8%) of the participants were grade 9-12. Three hundred fifty four (63.4%) participants were house wives. In relation to the monthly income of the respondents, 139 (35.1%) of them earn a family monthly income of >2000 Ethiopian birr (Table 1).

| Variables | Responses | Frequency | Percentage |
|---------------------------|-------------------|-----------|------------|
| Age of the mother | 15-19 | 12 | 3 |
| | 20-24 | 74 | 20.1 |
| | 25-29 | 169 | 43.3 |
| | 30-34 | 80 | 20.9 |
| | 35-39 | 48 | 11.9 |
| | 40-44 | 3 | 0.7 |
| Religion | Orthodox | 265 | 66.4 |
| | Muslim | 77 | 19.4 |
| | Protestant | 53 | 13.4 |
| | Others | 3 | 0.7 |
| Marital status | Married | 363 | 91 |
| | Not married | 20 | 5.2 |
| | Divorced | 6 | 1.5 |
| | Widowed | 9 | 2.2 |
| Age during your marriage? | <15 | 27 | 6.9 |
| | 15-19 | 127 | 32.8 |
| | 20-24 | 142 | 36.6 |
| | 25-29 | 75 | 19.1 |
| | 30-34 | 18 | 4.6 |
| Educational statuses | Illiterate | 30 | 7.5 |
| | Read and write | 18 | 4.5 |
| | Grade 1-8 | 98 | 24.6 |
| | Grade 9-12 | 154 | 38.8 |
| | Collage and above | 98 | 24.6 |
| Ethnicity | Amhara | 136 | 34.3 |
| | Oromo | 104 | 26.1 |
| | Tigre | 56 | 14.2 |
| | Gurage | 78 | 19.4 |
| | Others | 24 | 6 |
| Occupation of the mother | Employed | 182 | 45.5 |
| | Unemployed | 216 | 54.5 |
| Family monthly income | <500 | 24 | 6 |
| | 500-1000 | 36 | 9 |
| | 1000-1500 | 92 | 23.1 |
| | 1500-2000 | 107 | 26.9 |

| | | | |
|----------------------------------|-------------|-----|------|
| | >2000 | 139 | 35.1 |
| Do you have radio or television? | Yes | 354 | 88.8 |
| | No | 45 | 11.2 |
| Age of the child | 6-8 months | 163 | 41 |
| | 9-12 months | 265 | 59 |
| Sex of child | Male | 193 | 48.5 |
| | Female | 205 | 51.5 |

Table 1: Socio demographic variables of child and mothers/care givers, Addis Ababa, 2015.

In relation to children's socio-demographic profile, majority 265 (59%) were aged between 9-12 months and female in sex 205 (51.5%). From the total respondents, 306 (76.9%) had one or less male child and 353 (88.7%) had one or less female child in the house. Moreover, among a total respondents 306 (76.9%) had one or less under five children whereas 92 (23.1%) had two or more under five children. Pertaining to the infant characteristics, majority 265 (59%) were aged between 9-12 months and 205 (51.5%) female in sex (Table 1).

Maternal reproductive history and health service utilization

From a total of 398 mothers included in the study, 101 (25.4%) were gave birth three or more times and 297 (74.6%) had two and less delivery. From 203 mothers who have more than one child, 144 (71%) had a birth interval of three or more years. Out of the total respondents, 357 (89.6%) delivered in a health institution, and 276 (69.4%) had no medical illnesses during and after pregnancy.

Concerning ANC follow up about 327 (82.1%) of respondents had ANC follow up. From this, 69 (20.1) had ANC follow up three and less than three times during the last pregnancy whereas, the rest 258 (78.9%) had ANC follow up four times.

Three hundred six (76.9%) mothers used family planning and more than two-third (74.6%) of the respondents had PNC follow up. From this mothers, 282 (94%) had PNC follow up of two and less than two times during the last postnatal period and the rest 18 (6%) had PNC follow up of at least three times.

Almost all 396 (99.3%) of infants were immunized. About 163 (41%) of infant were less than 9 months of age and 149 (37.4%) were certified for completing immunization. Majority, 282 (70.9%) of respondents had no growth monitoring follow up in health institutions (Table 2).

| Variables | Responses | Number | Percent |
|--|---------------------|--------|---------|
| Number delivery including the current child | ≤ 2 | 297 | 74.6 |
| | ≥ 3 | 101 | 25.4 |
| Birth interval if the mothers have more than one child(in years) | <2 | 59 | 29 |
| | >3 | 144 | 71 |
| Place of delivery the current child | Health institution | 357 | 89.6 |
| | Home | 41 | 10.4 |
| Do you use family planning? | Yes | 306 | 76.9 |
| | No | 92 | 23.1 |
| Do you have medical illness during and after pregnancy? | Yes | 122 | 30.6 |
| | No | 276 | 69.4 |
| If yes to the above question, what type of illness? | Infectious | 3 | 2.4 |
| | Hypertension | 24 | 19.5 |
| | Diabetic | 3 | 2.4 |
| | Diarrhea | 3 | 2.4 |
| | Intestinal parasite | 3 | 2.4 |

| | | | |
|--|---|-----|------|
| | Gastritis | 54 | 43.9 |
| Did you have ANC follow up during pregnancy of the current child | Yes | 327 | 82.1 |
| | No | 71 | 17.9 |
| If you had ANC follow up how many times you visit the Health institution? | < 3 | 69 | 20.1 |
| | > 4 | 258 | 78.9 |
| History of post natal follow up? | Yes | 297 | 74.6 |
| | No | 101 | 25.4 |
| If yes How many times you have PNC follow up? | <2 | 282 | 95 |
| | >3 | 15 | 5 |
| Does the child have immunized? | Yes | 396 | 99.3 |
| | No | 2 | 0.7 |
| If yes does he/she get immunization certificate? | Yes | 149 | 37.4 |
| | No | 86 | 21.6 |
| | Age is less than 9 months | 163 | 41 |
| Do you have growth monitoring follow up in Health institution? | Yes | 116 | 29.1 |
| | No | 282 | 70.9 |
| If yes how many time you visit the institution? | One | 6 | 4.7 |
| | Two | 31 | 25.6 |
| | Three | 29 | 23.3 |
| | 4 and above | 59 | 46.4 |
| At what age did you first introduce complementary food to the baby? | Before six months | 134 | 33.6 |
| | At six month | 219 | 55.2 |
| | After six months | 45 | 11.2 |
| If the mother start complementary food before six month what is her reason? (more than one answer is possible) | My breast milk is not sufficient | 82 | 62.2 |
| | Due to problems in my breast | 14 | 11.1 |
| | Due to medical illness | 3 | 6.7 |
| | lack of information on the time of starting complementary food | 0 | 0 |
| | Other mothers practice it | 6 | 4.4 |
| | I work for a long time outside my house | 20 | 15.6 |
| If mother introduce complementary food after six month (delayed) what are the reason? | Did not know exactly when to start | 3 | 6.7 |
| | Mother feels that her milk is enough for baby | 27 | 60 |
| | Family, elders and others mothers advice to star after six months | 3 | 6.7 |
| | Mother feels child may not be able to digest it | 0 | 0 |
| | Other specified | 12 | 26.7 |
| What type of food you feed for your child when you start complementary food? | semi-solid(pourage) | 87 | 21.6 |

| | | | |
|---|--------------------------------------|-----|------|
| | Liquid | 187 | 47 |
| | Family type food | 12 | 3 |
| | Packed and bottled food | 97 | 24.6 |
| | Foods specially prepared for infants | 12 | 3 |
| | Others | 3 | 0.7 |
| Do you Know the exact time of complementary feeding initiation? | Yes | 360 | 90.3 |
| | No | 38 | 9.7 |
| If yes in which month? | Before six month | 47 | 13.1 |
| | At six month | 250 | 68.9 |
| | After six month | 63 | 18 |
| Where did you get this information? | Health professional | 181 | 49.6 |
| | Health extension workers | 45 | 12.2 |
| | From others mothers | 47 | 13 |
| | Community health volunteer | 0 | 0 |
| | Traditional birth attendant | 0 | 0 |
| | Radio or/and TV | 86 | 23.6 |
| | Other specified | 6 | 1.6 |

Table 2: Maternal reproductive history, health service utilization and complementary feeding, Addis Ababa, 2015.

Time of initiation of complementary feeding

A total of 360 (90.3%) mothers said that they knew the exact time of complementary feeding initiation. From 360 mothers 47 (13.1%), 250 (68.9%) and 63 (18.0) of mothers stated that exact time of complementary feeding initiation is before six months, at six months and after six months respectively (Table 2). Of 398 mothers, 219 (55%) were introduced complementary feeding to their infant at the age of six months.

While, 134 (34%) introduced complementary feeding to their infant before six months of age and 45 (11%) after six months of age (Figure 1).

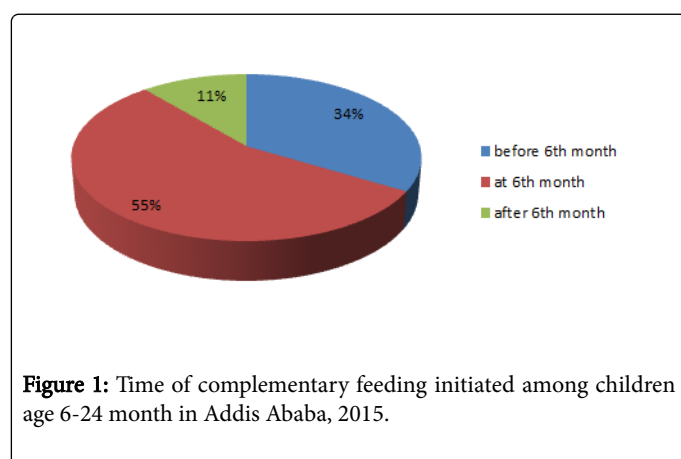


Figure 1: Time of complementary feeding initiated among children age 6-24 month in Addis Ababa, 2015.

Factors associated with timely initiation of complementary feeding

After adjusting potential confounders in multivariable logistic regression analysis, ANC follow up, occupation, place of delivery and believed time of initiation of complementary feeding were significantly associated with timely initiation of complementary feeding mothers who had ANC follow up were five times [AOR=4.783 (95% CI: 1.309-17.477)] more likely to initiate complementary feeding timely than mothers who had no ANC follow up and significantly associated with timely initiation of complementary feeding. Occupation of mothers was also associated with timely initiation of complementary feeding in a unique way.

Those mothers who were employed were 87% [AOR=0.138 (95% CI: 0.045-0.418)] less likely to initiate complementary timely than unemployed mothers.

Mothers who believed the exact time of initiation of complementary feeding is at six months were six times [AOR=5.425 (95% CI: 1.509-19.501)] more likely to initiate complementary feeding timely than mothers who believed the exact time of initiation of complementary feeding is after six months. Those mothers who believed the exact time of initiation of complementary feeding is less than six months are less [AOR=0.315 (95% CI: 0.52-1.916)] likely to initiate complementary feeding timely than those mothers who believed the exact time of initiation of complementary feeding is after six months.

Place of deliver was significantly associated with timely initiation of complementary feeding. Mothers who delivered in a health institution

were times [AOR=17.077 (95% CI: 2.808-103.858)] more likely to initiate complementary feeding timely than mothers delivered at home (Table 3).

| Variables | Responses | Not timely initiated complementary feeding | Timely initiated complementary feeding | COR (95%CI) | AOR (95%CI) |
|---|--------------------|--|--|----------------------|--------------------------|
| ANC follow up | Yes | 101 (30.9%) | 226 (69.1%) | 5.429 (2.061-14.301) | 4.783(1.309-17.477)* |
| | No | 50 (70.4%) | 21 (29.5%) | 1 | 1 |
| post natal follow up | Yes | 94 (31.6%) | 203 (68.3%) | 2.692 (1.213-5.971) | 2.321(0.597-9.0260) |
| | No | 55 (54.5%) | 46 (45.5%) | 1 | 1 |
| growth monitoring follow up | Yes | 24 (20.5%) | 93 (79.5%) | 3.204 (1.334-7.694) | 1.844(0.591-5.757) |
| | No | 127 (45.3%) | 154 (54.7%) | 1 | 1 |
| Knowledge of time of complementary feeding initiation | Yes | 122 (33.9%) | 238 (66.1%) | 6.504 (1.696-24.939) | 6.2149 (0) |
| | No | 30 (76.9%) | 9 (23.1%) | 1 | 1 |
| Believed time of initiation of complementary feeding | Before 6 months | 38 (80.8%) | 9 (19.2%) | 0.229 (0.051-1.034) | 0.315 (0.052-1.916) |
| | At 6 months | 55 (22.6%) | 195 (78.0%) | 3.136 (1.195-8.229) | 5.425 (1.509-19.501)* |
| | After 6 months | 31 (47.8%) | 32 (52.2%) | 1 | 1 |
| Occupation | Employed | 99 (54.1%) | 84 (45.9%) | 0.278 (0.133-0.578) | 0.138 (0.045-0.418)** |
| | Unemployed | 52 (24.7%) | 163 (75.3%) | 1 | 1 |
| Place of delivery | Health institution | 38 (33.3%) | 78 (66.7%) | 7.333 (1.936-27.778) | 17.077 (2.808-103.858)** |
| | Home | 33 (78.6%) | 9 (21.4%) | 1 | 1 |

Table 3: Factors associated with timely initiation of complementary feeding Addis Ababa, 2015. *p-value<0.05 (significant); **p-value<0.01(highly significant).

Discussion

This facility based cross-sectional study with the objective of the assessment of the magnitude and factors associated with timely initiation of complementary feeding was conducted in Addis Ababa health centres, Ethiopia. The result of this study revealed that the overall prevalence of timely initiation of complementary feeding is 55%. Prevalence of timely initiation of complementary feeding in this study is higher than the national prevalence (51%). The result is also higher than a study in China, and Kathmandu [3,16,17]. The finding of this study is relatively similar to West Bengal India [15] but the finding is lower than a study in Northern Ethiopia, Coastal south India, Hiwot Fana hospital Ethiopia, and Southwest Ethiopia [9,18-21]. This relative lower prevalence of timely initiation of complementary feeding in comparison to other studies done in our country can be explained most of the mothers in study were government workers and merchants which makes them to spend their time outside home for work purpose, and because of differences in methodologies like sampling, data collection methods and settings, nature of the study population, and related environmental and socioeconomic factors.

Occupational status of the mother is one of the determinants of timely initiation of complementary feeding. In this case, mothers who were employed were less likely to initiate complementary timely than unemployed mothers. This is consistent with a study conducted in Kemba, Mekele and Germany [20-22]. This may be due to unemployed

mothers usually stay at home with their child and have sufficient time for frequent breast feeding and would not be obligated like employed mothers to wean their child early to go to work.

The other predictor of timely initiation of complementary feeding was history of ante natal care visit. In this regard, mothers who had history of more than three times ANC visit started complementary feeding timely than that had no visit. This is in line with study done in Northern Ethiopia, Axum, India and Sri lanka [9,18,21,23]. Visiting health institution creates greater opportunity to get health education related to complementary feeding type, benefit and availabilities of complementary foods.

In this study Mothers who believed the exact time of initiation of complementary feeding is at six months were more likely to initiate complementary feeding timely than mothers who believed the exact time of initiation of complementary feeding is after six months. This is in line with a study in South Costal India and Hiwot Fana Hospital [18,19]. Likewise, mothers who delivered in a health institution were more likely to initiate complementary feeding timely than mothers who delivered at home. This is in line with a study in South Costal India and Hiwot Fana Hospital [18,19]. This might be due to mothers who delivered in health institution would get advice and counseling on breast feeding and complementary feeding practices by health professionals. Though, some other findings revealed that being older age and higher maternal education is favorable to initiate

complementary feeding timely [18,22,24] in this study there was no significant association.

Conclusion and Recommendations

Around half of mothers initiated complementary feeding on time. Occupation, ANC follow up, perception of the exact time of initiation of complementary feeding and place of delivery were significantly associated with timely initiation of complementary feeding. Widespread education and behavioral change communication activities on timely initiation of complementary feeding should be implemented in the maternal and child health unit of the hospital. Mothers should be encouraged to have ANC follow up and deliver at health institution. Mothers who are illiterate and those who work outside at home needs more attention and the government needs to set new strategies to improve infant child feeding practices.

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Competing interests: The authors declare that they have no competing interests.

Author's contributions: TY designed the study, collected and analyzed the data, and wrote the manuscript. EB, MY and YW participated in revision of the manuscript and data analysis as well as conceived the study and reviewed the draft manuscript. All authors read and approved the final manuscript.

References

1. Inoue M, Binns CW (2014) Introducing solid foods to infants in the Asia Pacific region. *Nutrients* 6: 276-288.
2. Fabrizio CS, Liere M, Pelto G (2014) Identifying determinants of effective complementary feeding behaviour change interventions in developing countries. *Matern Child Nutr* 10: 575-592.
3. Chen CM, Wang YY, Chang SY (2010) Effect of in-home fortification of complementary feeding on intellectual development of Chinese children. *Biomed Environ Sci* 23: 83-91.
4. World Health Organization (2003) UNICEF. Global strategy for infant and young child feeding.
5. Mokori A (2012) Nutritional status, complementary feeding practices and feasible strategies to promote nutrition in returnee children aged 6-23 months in northern Uganda. *South Afr J Clin Nutr* 25: 173-179.
6. Saleh F, Ara F, Hoque MA, Alam MS (2014) Complementary Feeding Practices among Mothers in Selected Slums of Dhaka City: A Descriptive Study. *J Health Popul Nutr* 32: 89-96.
7. Monte CM, Giugliani ER (2004) Recommendations for the complementary feeding of the breastfed child. *J Pediatr* 80: s131-s41.
8. Tarrant M, Fong DY, Wu KM, Lee IL, Wong EM, et al. (2010) Breastfeeding and weaning practices among Hong Kong mothers: a prospective study. *BMC pregnancy childbirth* 10: 27.
9. Mekbib E, Shumey A, Ferede S, Haile F (2014) Magnitude and factors associated with appropriate complementary feeding among mothers having children 6-23 months-of-age in Northern Ethiopia; a community-based cross-sectional study. *J Food Nutr Sci* 2: 36-42.
10. (2013) Demographic Health Survey of Ethiopia. Addis Ababa, Ethiopia.
11. Symon B, Bammann M (2012) Feeding in the first year of life: emerging benefits of introducing complementary solids from 4 months. *Aust fam physician* 41: 226-229.
12. Scott JA, Binns CW, Graham KI, Oddy WH (2009) Predictors of the early introduction of solid foods in infants: results of a cohort study. *BMC pediatr* 9: 60.
13. UNICEF (2012) UNICEF-WHO-World Bank joint child malnutrition estimates. United Nations Children's Fund.
14. Dewey K (2003) Guiding principles for complementary feeding of the breastfed child.
15. Garg A, Chadha R (2009) Index for measuring the quality of complementary feeding practices in rural India. *J Health Popul Nutr* 27: 763-771.
16. Li L, Li S, Ali M, Ushijima H (2003) Feeding practice of infants and their correlates in urban areas of Beijing, China. *Pediatr Int* 45: 400-406.
17. Sapkota S, Shrestha S (2014) Complementary Feeding Practices among the Caretakers of the Young Children at Kathmandu. *J Chitwan Med Coll* 3: 25-29.
18. Rao S, Swathi P, Unnikrishnan B, Hegde A (2011) Study of complementary feeding practices among mothers of children aged six months to two years-A study from coastal south India. *Australas med J* 4: 252.
19. Semahegn A, Tesfaye G, Bogale A (2014) Complementary feeding practice of mothers and associated factors in Hiwot Fana Specialized Hospital, Eastern Ethiopia. *Pan Afr Med J* 18: 143.
20. Agedew E, Demissie M, Misker D, Haftu D (2014) Early Initiation of Complementary Feeding and Associated Factors among 6 Months to 2 Years Young Children. Kamba Woreda, South West Ethiopia: A Community-Based Cross-Sectional Study. *J Nutr Food Sci* 4: 2.
21. Yemane S, Awoke T, Gebreslassie M (2014) Timely initiation of complementary feeding practice and associated factors among mothers of children aged from 6 to 24 months in Axum town, north Ethiopia. *Sciences* 3: 438-442.
22. Rebhan B, Kohlhuber M, Schwegler U, Koletzko BV, Fromme H (2009) Infant feeding practices and associated factors through the first 9 months of life in Bavaria, Germany. *J Pediatr Gastroenterol Nutr* 49: 467-473.
23. Senarath U, Sanjeeva SP, Godakandage, Jayawickrama H, Siriwardena I, et al. (2012) Determinants of inappropriate complementary feeding practices in young children in Sri Lanka: secondary data analysis of Demographic and Health Survey 2006-2007. *Matern Child Nutr* 8: 60-77.
24. Inayati DA, Scherbaum V, Purwestri RC, Hormann E, Wirawan NN, et al. (2012) Infant feeding practices among mildly wasted children: a retrospective study on Nias Island, Indonesia. *Int breastfeed J* 7: 3.