Assessment of Knowledge, Attitude and Practice of Mothers/caregivers on Infant and Young Child Feeding in Assosa Woreda, Assosa Zone, Benshangul Gumuz Region, Western Ethiopia: A Cross Sectional Study

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Research

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Abstract

**Background:** For optimal nutritional status, health, and growth of the children the knowledge, attitude, and practice (KAP) of mothers/caregivers on infant and young child feeding are key factors. Hence, in this study, the knowledge, attitude, and practice of the mothers/caregivers on infant and young child feeding were assessed.

**Methods:** A cross-sectional study was carried out among 486 mothers/caregivers from Assosa Districts in Assosa Zone of Benshangul Gumuz Region, Western Ethiopia, semi-structured interviewer-administered questionnaire was used. To isolate independent predictors for good knowledge, good practice, and favorable attitude of the mothers/caregivers related to child feeding, multivariable logistic regression analyses were performed.

**Results:** Out of 486 study participants, only 19% of the participants knew the importance of colostrum’s, 83.1% of respondents know the exact time of complementary feeding initiation. Furthermore, the Majority, (84%) of respondents believed that breast milk was the first feed that should be consumed by the child within 1 hour of birth.

In bivariate analysis, the data showed that there was no association between mothers’ knowledge and the variables analyzed; these variables include a place of the respondent, sex, marital status, religion, occupation, family size, etc. In the binary logistic regression analysis age of mothers, educational status of the mother, place of delivery, father educational status, father involvement & support, information about IYCF, discuss with your husband about IYCF and ANC follow up were statistically associated with mothers knowledge on IYCF recommendation.

**Conclusions:** Overall mothers had good knowledge and a fair attitude about IYCF practices. Age of mothers, Place of delivery, information about IYCF, and ANC follow-up were statistically associated with mother's knowledge of IYCF. To support IYCF practices, behavior change communications intervention strategies should be introduced in mothers to bridge the gap between knowledge and practices.

**Background**

The early stages of a child’s life, when all parts of the infant are growing physically, mentally and socially, are very important, which requires an optimal supply of energy and nutrients to the body (1, 2). Therefore, knowledge, attitude and practice (KAP) of mothers/caregivers on infant and young child feeding in this critical time are very important for the child health, growth and development (3–6).

To ensure the growth, health, and development of children to their full potential, adequate nutrition during infancy and early childhood is essential. Poor nutrition is responsible for one third of the estimated 9.5 million deaths that occurred in 2006 and increases the risk of illness in children less than 5 years of age (7). Inappropriate nutrition can also lead to childhood obesity which is an increasing public health problem in many countries.
Long-term impairment in growth and health are linked with an early nutritional deficit. Malnutrition during the first 2 years of life causes stunting, leading to the adult being several centimeters shorter than his or her potential height (8). There is evidence that adults who were malnourished in early childhood have impaired intellectual performance (9). The presence of many malnourished children in a population, it has implications for national development. The overall functional consequences of malnutrition are thus immense.

The first two years of life provide a critical window of opportunity for ensuring children's appropriate growth and development through optimal feeding (10). Based on evidence of the effectiveness of interventions, achievement of universal coverage of optimal breastfeeding could prevent 13% of deaths occurring in children less than 5 years of age globally, while appropriate complementary feeding practices would result in an additional 6% reduction in under-five mortality (11).

The period from conception to 24 months in children is critical for their growth and development (12, 13). It is important that adequate nutrition is provided during pregnancy and in the child's first two years of life (14). WHO and UNICEF set a global strategy for optimal infant and young child feeding (IYCF) (3). The strategy recommends the initiation of breastfeeding within one hour of birth, exclusively breastfed for the first six months, after which nutritiously appropriate, adequate, and safe complementary foods should be introduced along with continuing breastfeeding up to two years and beyond. Improving IYCF practices based on this recommendation when children are well and sick is important to ameliorate under nutrition and its consequences (15).

The Ethiopian government was developed and implemented the IYCF guideline in 2004 to improve feeding practice (16). However, the IYCF practice remains inappropriate and likely to be a major cause of under nutrition (17). According to EDHS, 2016, infant and young child feeding practices are not as recommended by WHO. Only 58% of infants less than six months of age are exclusively breastfed and the optimal complementary feeding practice was 7%. Contrary to the recommendation by WHO. Nine percent of infants less than six months of age use a bottle with a teat, a practice that is discouraged because of the risk of illness to the child (18). Therefore, this study was conducted to assess the knowledge, attitude and practice of the mothers/caregivers on infant and young child feeding in Assosa Woreda, Assosa Zone, Benshangul Gumuz Region, Western Ethiopia.

**Methods And Materials**

**Study area**

The study will be conducted in Assosa District, which is one of the seven administrative districts of Assosa zone, BGR. The district has an estimated population of 116,368 people with 58,605 man and 57,602 women (CSA EFY 2020 GC of Assosa district). Furthermore, there are a total of 18,828 under five children and 6,773 under 2 years age of infants (19). It has 74 kebele (smallest administrative unit in Ethiopia) and 25,860 households (HHs), Assosa district has five heath centers, seventy-two health post,
two Private medium clinics (according to the district health bureau reports. The majority of the population in the district is dependent on agriculture and agro-pastoralist activities; like farming crops, trading, rearing animals and gold mining. The District is located 20 kilometers away from Assossa, the capital city of BGR and 685 kilometers from Addis Ababa, Western Ethiopia. The district has a latitude and longitude of 10°04′N 34°31′E, with an elevation range of 1300 to 1470 meters above sea level. Moreover, the district has an average annual rain fall of 1291.1mm and average temperature ranges of 129.1 mm and 8.1°C to 38.5°C respectively.

Study population

All mothers/caregivers whose child aged 0–24 months in selected districts.

Sample size determination and sampling technique

The sample size was determined using the formula of sample size determination for single population proportion \( n = \frac{(Z_{\alpha/2})^2 \times p \times (1 - p)}{d^2} \). By the following assumptions: The level of confidence (\( \alpha \)) is taken to be 95% (\( Z_{1-\alpha/2} = 1.96 \)); and the margin of error (\( d \)) is taken to be 5% (0.05). The proportion (\( p \)) of prevalence of practice on mother knowledge in IYCF was 28.7% (4). The calculated sample size was 495 mothers/caregivers. A structured questionnaire was prepared, and the respondents were interviewed by translation of the questionnaires from English to Amharic language verbally by data collectors during data collection. The data collectors were fluent speakers of both local language Bertagna (Lutanigna) and Amharic.

Data quality assurance

A pretested structured question was done on 5% of the total sample size prior to actual data collection. The data collectors were given training on process of data collection and during the data collection consistent and accuracy the data were checked daily.

Data management and analysis

After checking the completeness and appropriateness, the data was coded and entered Epi Data 3.2, check for missing values and outliers, and was exported to SPSS 25 for data analysis. Descriptive frequencies and percentages were used present the study results. First, a descriptive statistical analysis will be used, and mean, standard deviation (SD) was used to describe the socio-demographic characteristics and prevalence of Knowledge, Attitude and Practice on child feeding. Bivariate analysis was employed to identify the candidate variables for multivariable analysis at \( p < 0.25 \) in a binary analysis. Moreover, the proportion difference between the KAP by the socio-demographic background was analyzed by using Pearson's Chi-square tests after checking the assumptions. The multivariable results are reported as adjusted odds ratio (AOR) with 95% CI. The significance of the results was declared at \( p < 0.05 \)

Ethical consideration
This proposal was submitted to Pharma College, school of graduate public health in order to be approved and obtaining letter of clearance. An official letter of cooperation was also be given to Assosa district health office and Assosa zone health office. Assosa district health office was asked for an official letter to get permission. Data collectors were trained how to handle confidentiality and privacy using consent form attached to each questionnaire. Confidentiality was assured by excluding their name during the period of data collection. The study purpose, procedure and duration, possible risks and benefits of the study was clearly explained for study participants using local language and informed consent was obtained from respondents.

Results

Socio-demographic characteristics of the respondents

A total response of 486 mothers sampled out of 495 participated in this study indicates a response rate of 98.2%. Refusal and absenteeism of respondents during data collection were the main reasons for none response rate. Among the respondents 412(84.8%) live in rural kebeles and 74(15.2%) were from semi-Urban. Five percent of the respondents were divorced and large majorities 450 (92.6%) were married. More than half 260(53.5%) of the respondents had 4–6 family members, 130(26.7%) have less than three and 96(19.8%) were with more than six family members. Concerning educational status of mothers, majority were illiterate of which 232 (47.7%) and 108(22.2 %) unable to read and write and able to read and write respectively, 94(19.3%) primary education, 32(6.6%) secondary education and 20(4.1%) were college and above. Among the total respondent of mothers, 248(51.0%) were housewife, 190(39.5%) were farmer, 30(6.2%) were merchant and 12(2.5%) were government employee and 4(0.8%) were daily laborer. Parity i.e number of children borne by the mother was one at its maximum 416(41.6%), two children 68(14.0%) and three or more than three at minimum 2(0.4%). Majority of the respondents were from Berta ethnic group, 202 (41.6%). Maximum 172(35.4%) children participating in the study belonged to the age group of 6–12 months followed by 156(32.1%) in 0–6 months, 86(17.7%) from age group of 12–18 months and 72 (14.8%) from age group of 19–24 months. It was seen that 294(60.5%) were male children and the remaining 192(39.5 %) were female. Mean (± SD) age was 29.48(5.434) and age range 24 (Table 1).
Table 1
Maternal and child socio-demographic data in Assosa Zone, BGR, Western Ethiopia, 2020.

| Variables                        | Frequency | Percent (%) |
|----------------------------------|-----------|-------------|
| **Age of mother**                |           |             |
| < 24                             | 82        | 16.9%       |
| 25–29                            | 178       | 36.6%       |
| ≥ 30                             | 226       | 46.5%       |
| **Place of residence**           |           |             |
| Rural                            | 412       | 84.8%       |
| Semi-urban                       | 74        | 15.2%       |
| **Marital status**               |           |             |
| Married                          | 450       | 92.6%       |
| Divorced                         | 24        | 4.9%        |
| Windowed                         | 10        | 2.1%        |
| Single                           | 2         | 0.4%        |
| **Family size**                  |           |             |
| < 3                              | 130       | 26.7%       |
| 4–6                              | 260       | 53.5%       |
| > 6                              | 96        | 19.8%       |
| **Education status of mother**   |           |             |
| Unable to read and write         | 232       | 47.7%       |
| Able to read and write           | 108       | 22.2%       |
| Primary education                | 94        | 19.3%       |
| Secondary education              | 32        | 6.6%        |
| College and above                | 20        | 4.1%        |
| Variables                                      | Frequency | Percent (%) |
|-----------------------------------------------|-----------|-------------|
| **Education status of father**                |           |             |
| Unable to read and write                      | 188       | 38.7%       |
| Able to read and write                        | 120       | 24.7%       |
| Primary education                             | 84        | 17.3%       |
| Secondary education                           | 54        | 11.1%       |
| College and above                             | 40        | 8.2%        |
| **Occupational status of mother**             |           |             |
| House wife                                     | 248       | 51%         |
| Farmer                                         | 192       | 39.5%       |
| Merchant                                       | 30        | 6.2%        |
| Daily laborer                                  | 4         | 0.8%        |
| Gov’t employee                                 | 12        | 2.5%        |
| **Occupational status of their husband**      |           |             |
| Famer                                          | 360       |             |
| Merchants                                      | 64        |             |
| daily laborer                                  | 36        |             |
| Gov’t employee                                 | 24        |             |
| Private employee                               | 2         |             |
| **Monthly income**                            |           |             |
| < 500birr                                      | 98        | 20.2%       |
| 500-1500birr                                   | 194       | 39.9%       |
| 1501–3000 birr                                 | 120       | 24.7%       |
| 3001–5000                                      | 44        | 9.1%        |
| > 5000                                         | 30        | 6.2%        |
| **Parity**                                     |           |             |
| 1                                             | 416       | 85.6%       |
| 2                                             | 68        | 14.0%       |
| ≥ 3                                           | 2         | 0.4%        |
| Variables     | Frequency | Percent (%) |
|--------------|-----------|-------------|
| Ethnicity    |           |             |
| Berta        | 202       | 41.6%       |
| Shinasha     | 58        | 11.9%       |
| Amhara       | 186       | 38.3%       |
| Oromo        | 40        | 8.2%        |
| Age (years)  |           |             |
| 0-6 months   | 156       | 32.1%       |
| 6–12 months  | 172       | 35.4%       |
| 12–18 months | 86        | 17.7%       |
| 19–24 months | 72        | 14.8%       |
| Sex          |           |             |
| Male         | 294       | 60.5%       |
| Female       | 192       | 39.5%       |

Knowledge of Respondents about IYCF Practices

Overall, 456 (93.8%) mothers had good knowledge on IYCF practice recommendation. About 92 (19%) of mothers didn't knew the importance of colostrum feeding to their baby. Majority, 408 (84%) of participants realized that breast milk was the first feed that should be consumed by the child after birth with in 1 hour of birth and 416 (85.6%) women knew that exclusive breast-feeding means that an infant should receive only breast milk up to 6 months of life. Four hundred four (83.1%) respondents identified exact time of complementary feeding initiation. Among all respondents, majority 442 (90.9%) knew mother should take healthy food and nearly half, 238 (49.0%) were did not wash their breast before breastfeeding. Four hundred forty six (91.8%) of respondents knew that breast feeding could strong the bond between mother and child. More than three quarter (76.1%) of respondents knew that breast feeding is helps to child and majority, 412 (84.8%) of respondents knew that frequent breastfeeding is required when child is sick (Table 2).
Table 2
Knowledge of mother towards IYCF practices

| Variable                                           | Frequency | Percent (%) |
|---------------------------------------------------|-----------|-------------|
| Colostrum is important for baby                    |           |             |
| Yes                                               | 394       | 81.1%       |
| No                                                | 44        | 9.1%        |
| Don't know                                         | 48        | 9.9%        |
| A neonate should start breastfeeding with in 1hr of birth |       |             |
| Yes                                               | 408       | 84%         |
| No                                                | 42        | 8.6%        |
| Don't know                                         | 36        | 7.4%        |
| An infant should exclusively breastfeed for the first 6 months | | |
| Yes                                               | 416       | 85.6%       |
| No                                                | 56        | 11.5%       |
| Don't know                                         | 14        | 2.9%        |
| An infant should start complementary food at 6 months | | |
| Yes                                               | 404       | 83.1%       |
| No                                                | 64        | 13.2%       |
| Don't know                                         | 18        | 3.7%        |
| Lactating mothers should take healthy food         |           |             |
| Yes                                               | 442       | 90.9%       |
| No                                                | 6         | 1.2%        |
| Don't know                                         | 38        | 7.8%        |
| Did you wash your breast before breastfeed         |           |             |
| Yes                                               | 248       | 51.0%       |
| No                                                | 238       | 49.0%       |

**ANC** = Antenatal Care, **BF** = Breast Feeding, **IYCF** = Infant and Young Children Feeding, **PNC** = Post Natal Care, **TV** = Television
| Variable                                                                 | Frequency | Percent (%) |
|--------------------------------------------------------------------------|-----------|-------------|
| Snack should give to the child                                          |           |             |
| Yes                                                                      | 394       | 81.1%       |
| No                                                                       | 64        | 13.2%       |
| Don't know                                                               | 28        | 5.8%        |
| BF can strong the bond between mother and child                          |           |             |
| Yes                                                                      | 446       | 91.8%       |
| No                                                                       | 36        | 7.4%        |
| Don't know                                                               | 4         | 0.8%        |
| BF can prevent disease                                                   |           |             |
| Yes                                                                      | 226       | 54.7%       |
| No                                                                       | 162       | 33.3%       |
| Don't know                                                               | 58        | 11.9%       |
| BF helps to child                                                        |           |             |
| Yes                                                                      | 370       | 76.1%       |
| No                                                                       | 96        | 19.8%       |
| Don't know                                                               | 20        | 4.1%        |
| BF is important economically                                             |           |             |
| Yes                                                                      | 252       | 51.9%       |
| No                                                                       | 190       | 39.1%       |
| Don't know                                                               | 44        | 9.1%        |
| BF more frequently when child is sick                                    |           |             |
| Yes                                                                      | 412       | 84.8%       |
| No                                                                       | 74        | 15.2%       |
| Don't know                                                               | -         |             |

**ANC** = Antenatal Care, **BF** = Breast Feeding, **IYCF** = Infant and Young Children Feeding, **PNC** = Post Natal Care, **TV** = Television
| Variable                                      | Frequency | Percent (%) |
|-----------------------------------------------|-----------|-------------|
| Who is usually feed child                     |           |             |
| Mother                                        | 436       | 89.7%       |
| Father                                        | 4         | 0.8%        |
| Sibling                                       | 44        | 9.1%        |
| Guardian                                      | 2         | 0.4%        |
| Involvement and support of father on IYCF    |           |             |
| Yes                                           | 398       | 81.9%       |
| No                                            | 60        | 12.3%       |
| Don’t know                                    | 28        | 5.8%        |
| Did you discuss with husband about child nutritional and feeding | | |
| Yes                                           | 268       | 55.1%       |
| No                                            | 218       | 44.9%       |
| Overall knowledge of IYCF                    |           |             |
| Good                                          | 456       | 93.8%       |
| Poor                                          | 30        | 6.2%        |
| Source of information                         |           |             |
| TV/ Radio                                     | 12        | 2.5         |
| Health facility                               | 270       | 55.6%       |
| On ANC/PNC follow up                          | 200       | 41.2%       |
| Relative/ Neighbor                            | 4         | 0.8%        |
| Social media (Facebook, …)                    | -         | -           |
| other                                         | -         | -           |

**ANC** = Antenatal Care, **BF** = Breast Feeding, **IYCF** = Infant and Young Children Feeding, **PNC** = Post Natal Care, **TV** = Television

**Attitude of Respondents towards IYCF Practices**

The majority of participants reported that breastfeeding should start immediately after delivery, but 30(6.2%) were strongly disagree and 14(2.9%) were slightly disagree. Approximately three quarter reported that babies shouldn’t be given anything except breast feed until 6 months. In addition,
412 (84.8%) had a positive attitude i.e. they strongly agreed to Complementary feeding should be started after 6 months but a huge portion of them 42 (8.6%) thought of it to be less positive. Despite positive reports of BF should continue up to 2 years, majority 442 (90.9%) of the mothers strongly agree and a majority 460 (94.7%) of them reported that a child should be breastfeed 10 and more than 10/24 hrs. Overall, 432 (88.9%) mothers had good attitude on IYCF practice recommendation (Table 3).
Table 3  
Attitude of Respondents towards IYCF Practices

| Variable                                                                 | Frequency | Percent (%) |
|-------------------------------------------------------------------------|-----------|-------------|
| Breastfeeding should start immediately after delivery                   |           |             |
| Strongly disagree                                                       | 30        | 6.2%        |
| Slightly disagree                                                       | 14        | 2.9%        |
| Neutral                                                                | 32        | 6.6%        |
| Agree                                                                  | 18        | 3.7%        |
| Strongly agree                                                          | 392       | 80.7%       |
| Babies shouldn't be given anything except BF ≤ 6 months                  |           |             |
| Strongly disagree                                                       | 80        | 16.5%       |
| Slightly disagree                                                       | 8         | 1.6%        |
| Neutral                                                                | 26        | 5.3%        |
| Agree                                                                  | 18        | 3.7%        |
| Strongly agree                                                          | 354       | 72.8%       |
| A child can be given butter, sugar and water ≤ 6 months                  |           |             |
| Strongly disagree                                                       | 266       | 54.7%       |
| Slightly disagree                                                       | 10        | 2.1%        |
| Neutral                                                                | 22        | 4.5%        |
| Agree                                                                  | 56        | 11.5%       |
| Strongly agree                                                          | 132       | 27.2%       |
| Complementary feeding should be started after 6 months                  |           |             |
| Strongly disagree                                                       | 32        | 6.6%        |
| Slightly disagree                                                       | 4         | 0.8%        |
| Neutral                                                                | 6         | 1.2%        |
| Agree                                                                  | 32        | 6.6%        |
| Strongly agree                                                          | 412       | 84.8%       |

BF = Breast Feeding
| Variable                                      | Frequency | Percent (%) |
|----------------------------------------------|-----------|-------------|
| **Formal meal is more convenient**           |           |             |
| Strongly disagree                            | 298       | 61.3%       |
| Slightly disagree                            | 24        | 4.9%        |
| Neutral                                      | 28        | 5.8%        |
| Agree                                        | 52        | 10.7%       |
| Strongly agree                               | 84        | 17.3%       |
| **Cow milk is more convenient**              |           |             |
| Strongly disagree                            | 360       | 74.1%       |
| Slightly disagree                            | 10        | 2.1%        |
| Neutral                                      | 8         | 1.6%        |
| Agree                                        | 42        | 8.6%        |
| Strongly agree                               | 66        | 13.6%       |
| **BF should continue up to 2 years**         |           |             |
| Strongly disagree                            | 14        | 2.9%        |
| Slightly disagree                            | 8         | 1.6%        |
| Neutral                                      | 2         | 0.4%        |
| Agree                                        | 20        | 4.1%        |
| Strongly agree                               | 442       | 90.9%       |
| **A child should be breastfeed 10 and more than 10/24 hrs** | | |
| Strongly disagree                            | 14        | 2.9%        |
| Slightly disagree                            | 4         | 0.8%        |
| Neutral                                      | 4         | 0.8%        |
| Agree                                        | 4         | 0.8%        |
| Strongly agree                               | 460       | 94.7%       |

*BF = Breast Feeding*
| Variable                                                                 | Frequency | Percent (%) |
|------------------------------------------------------------------------|-----------|-------------|
| The child food to eat at one times should include VitA, Fruit etc      |           |             |
| Strongly disagree                                                      | 26        | 5.3%        |
| Slightly disagree                                                      | 8         | 1.6%        |
| Neutral                                                                | 14        | 2.9%        |
| Agree                                                                  | 24        | 4.9%        |
| Strongly agree                                                         | 414       | 85.2%       |
| Snack should be given to the children between meal                     |           |             |
| Strongly disagree                                                      | 8         | 1.6%        |
| Slightly disagree                                                      | 4         | 0.8%        |
| Neutral                                                                | 30        | 6.2%        |
| Agree                                                                  | 20        | 4.1%        |
| Strongly agree                                                         | 424       | 87.2%       |
| Serving balanced foods prevent malnutrition disposal                   |           |             |
| Strongly disagree                                                      | 20        | 4.1%        |
| Slightly disagree                                                      | 8         | 1.6%        |
| Neutral                                                                | 16        | 3.3%        |
| Agree                                                                  | 24        | 4.9%        |
| Strongly agree                                                         | 418       | 86%         |
| Serving only starchy food prevent malnutrition                         |           |             |
| Strongly disagree                                                      | 262       | 53.9%       |
| Slightly disagree                                                      | 12        | 2.5%        |
| Neutral                                                                | 38        | 7.8%        |
| Agree                                                                  | 32        | 6.6%        |
| Strongly agree                                                         | 142       | 29.2%       |

BF = Breast Feeding
| Variable                                                                 | Frequency | Percent (%) |
|------------------------------------------------------------------------|-----------|-------------|
| Malnutrition can be caused by disease                                  |           |             |
| Strongly disagree                                                      | 54        | 11.1%       |
| Slightly disagree                                                      | 22        | 4.5%        |
| Neutral                                                               | 28        | 5.8%        |
| Agree                                                                 | 30        | 6.2%        |
| Strongly agree                                                         | 352       | 72.4%       |
| Serving indigenous fruit/vegetable can keep children healthy           |           |             |
| Strongly disagree                                                      | 92        | 18.9%       |
| Slightly disagree                                                      | 14        | 2.9%        |
| Neutral                                                               | 24        | 4.9%        |
| Agree                                                                 | 24        | 4.9%        |
| Strongly agree                                                         | 332       | 68.3%       |
| Over all attitude                                                      |           |             |
| Poor                                                                   | 54        | 11.1%       |
| Good                                                                   | 432       | 88.9%       |

**BF = Breast Feeding**

**IYCF Practices**

A total of 406 (83.5%) children were breast-fed within an hour of their birth and 16.5% were not. Majority 370 (76.1%) of children had more than ten frequency of breast feeding, three hundred eight (87.2%) of children were exclusively breast-fed for the first six months of life and majority, and 398 (81.9%) children were continually breastfed for 2 years. Nearly half, 240 (49.4%) children started with complementary feeds at 6 months and 74 (15.2%) after 6 months. However, 334 (68.7%) children were complementary food at least 3 times/day. Overall, 380 (78.2%) mothers had good practice on IYCF (Table 4).
### Table 4
**IYCF practice among respondent**

| Variables                                                                 | Frequency | Percent(%) |
|---------------------------------------------------------------------------|-----------|------------|
| At what time you started BF after birth                                   |           |            |
| Within one hour                                                           | 406       | 83.5%      |
| After one hour                                                            | 80        | 16.5%      |
| Frequency of BF in the last 24 hours                                      |           |            |
| < 10 times                                                                | 116       | 23.9%      |
| ≥ 10 times                                                                | 370       | 76.1%      |
| Exclusive breast feeding for the first 6 months                           |           |            |
| Yes                                                                       | 308       | 63.4%      |
| No                                                                        | 178       | 36.6%      |
| Time you started complementary                                           |           |            |
| < 6 months                                                                | 172       | 35.4%      |
| At 6 months                                                               | 240       | 49.4%      |
| > 6 months                                                                | 74        | 15.2%      |
| For how many years continued BF                                           |           |            |
| < 2 years                                                                 | 88        | 18.1%      |
| ≥ 2 years                                                                 | 398       | 81.9%      |
| Minimum meal frequency of complementary food                              |           |            |
| Once                                                                      | 30        | 6.2%       |
| Twice                                                                     | 122       | 25.1%      |
| ≥ three times                                                             | 334       | 68.7%      |
| Overall status of IYCF practice                                           |           |            |
| Good                                                                      | 380       | 78.2%      |
| Poor                                                                      | 106       | 21.8%      |

**BF = Breast Feeding, IYCF = Infant and Young Children Feeding**

**Factors associated with mothers’ knowledge**
In bivariate analysis, the data showed that there was no association between mothers’ knowledge and the variables analyzed, these variables include place of respondent, sex, marital status, religion, occupation, family size etc.

In the binary logistic regression analysis Age of mothers, Educational status of mother, Place of delivery, Father educational status, Father involvement & support, Did you ever heard information about IYCF, Did you discuss with your husband about IYCF and ANC follow up were statistically associated with mothers knowledge on IYCF recommendation (Table 5).

After controlling the effect of other variables (confounders), the likelihood of good knowledgeable mother was 71 % times less likely for mothers age between < 24 years old than mothers who were ≥ 30 years old. Additionally mother who had delivered in health institution were 4.47 time more knowledgeable than who had delivered at home.

More mothers who had ever heard information about IYCF were 3.66 times more knowledgeable than had not ever heard information about IYCF. Furthermore mothers who had ANC follow up were 12 times more knowledgeable than their counter parts who had no ANC follow up.
Table 5
Factors associated with mother’s knowledge regarding IYCF

| Variables                        | Mothers knowledge on IYCF | COR(95%CI)       | AOR(95%CI)       | P.value |
|----------------------------------|---------------------------|------------------|------------------|---------|
|                                  | Poor          | Good           |                  |         |
| Age of mothers                   |               |                |                  |         |
| < 24 years                       | 8             | 74             | 0.8(0.33,1.92)   | 0.29(0.1,0.85)* | 0.024  |
| 24–29 years                      | 4             | 174            | 3.76(1.25,11.3)  | 1.92(0.58,6.34) |         |
| ≥ 30 years                       | 18            | 208            | 1                | 1       |
| Educational status of mother     |               |                |                  |         |
| Literate                         | 24            | 316            | 1.77(0.71,4.43)  | 1       |
| Illiterate                       | 6             | 140            | 1                |         |
| Place of delivery                |               |                |                  |         |
| Home                             | 8             | 32             | 1                | 1       | 0.009  |
| Health institution               | 22            | 424            | 4.82(1.99,11.68) | 4.47(1.46,13.68) |         |
| Father educational status        |               |                |                  |         |
| Illiterate                       | 22            | 286            | 1                |         |
| Literate                         | 8             | 170            | 1.64(0.71,3.75)  |         |
| Father involvement & support     |               |                |                  |         |
| Yes                              | 22            | 376            | 1.71(0.74,3.98)  |         |
| No                               | 8             | 80             | 1                |         |
| Did you ever heard information about IYCF | |                  |                  |         |
| Yes                              | 24            | 436            | 5.45(2.0,14.8)   | 3.66(1.16,11.61) | 0.027  |
| No                               | 6             | 20             | 1                | 1       |
| Did you discuss with your husband about IYCF | |                  |                  |         |
| Yes                              | 10            | 256            | 2.56(1.17,5.59)  |         |
| No                               | 20            | 200            | 1                |         |

**ANC** = Antenatal Care, **AOR** = Adjusted Odd Ratio, **COR** = Crude Odds Ratio, **IYCF** = Infant and Young Children Feeding
| Variables           | Mothers knowledge on IYCF | COR(95%CI) | AOR(95%CI) | P.value |
|---------------------|---------------------------|------------|------------|---------|
|                     | Poor | Good |            |          |         |
| ANC follow up       |      |      |            |          |         |
| Yes                 | 2    | 278  | 21.9(5.14,92.9) | 12(4.84,25.1) | 0.001   |
| No                  | 28   | 178  | 1          |          |         |

**ANC** = Antenatal Care, **AOR** = Adjusted Odd Ratio, **COR** = Crude Odds Ratio, **IYCF** = Infant and Young Children Feeding

**Discussion**

To our knowledge, this study was the first in to be conducted in in Assosa Zone, BGR, and Western Ethiopia. It was conducted with the aim of assessing Knowledge, attitude and practice towards IYCF and associated factors among mothers' on IYCF.

Overall, 93.8% mothers had good knowledge on IYCF practice recommendation. Mothers who have good knowledge on IYCF recommendation were more likely to have better feeding practice than mothers who have poor knowledge (20, 21). This finding was higher than the study findings in Bennatsemay woreda (45.7%), and Nairobi city (49.5%) (22, 23). On the other hand, this finding was lower than the study findings in Shebele Zone, in India and Solapur city (24–26). This inconsistency might be due to time gap between studies and difference in the study settings; since the current study was done among mothers in with lower socio economic status whereas the former studies included mothers in the Woreda with better socio economic characteristics.

Mother’s attitude about IYCF practices was less evidenced than the general knowledge base. In a similar study (26), 82.2% mothers had a positive attitude about EBF (24). On the contrary, other study did not find a desirable attitude of mothers towards IYCF practices even though the mothers perceived good knowledge. It was reported that imparting knowledge without changing the attitude of mothers towards IYCF practices will not give rise to good practices (25). Similar finding was supported in the current study as well.

For poor growth of children, poor practices can be one of the reasons. In a study conducted in Solapur city of Maharashtra, only 41.25% mothers exclusively breast-fed their child and 58.75% fed complementary foods to their children before 6 months of age (26). One such study in Kerala reported that 84.1% mothers exclusively breast-fed their child (27). It was reported that mothers’ practice in feeding the child was poor despite of mothers having good knowledge (24–26). Hence, it reinforces the fact that only imparting knowledge is not enough but imparting it through hands on training and practical exposure is the key to improve the feeding practices.
It has been reported that 63.4% mothers breastfed their child for first 6 months, 65% children were introduced to complementary feeds after 6 months. Exclusive breast feeding for the first 6 months of life has a significant effect in the reduction of morbidity and mortality as well as to ensure overall development (28). In recent study majority of mothers initiated breast-feeding the child within one hour of birth which is lower than the current study (29). In addition, 92% of the mothers recognized the recommended duration for early breast feeding, 96.9% knew about the duration for exclusive breastfeeding, although only 25% knew about the time to start complementary feeds (24). In a study conducted in Mumbai, it was reported that 46% infants were breast-fed within one hour of birth, 63% were breast-fed exclusively, 74% were breast-fed for 12 months and only 41% were started with complementary feeds at age of 6 months (30).

This study show that the likelihood of good knowledgeable mother was 71 % times less likely for mothers age between < 24 years old than mothers who were ≥ 30 years old. Similar result was reported from a study finding in Nairobi city, Kenya (23). Additionally, mother who had delivered in health institution were 4.47 time more knowledgeable than who had delivered at home.

More mothers who had ever heard information about IYCF were 3.66 times more knowledgeable than had not ever heard information about IYCF. Furthermore, mothers who had ANC follow up were 12 times more knowledgeable than their counter parts who had no ANC follow up. This finding is in agreement with the study finding in northern Ethiopia and Arba Minch Zuria (31, 32). Mothers who had ANC follow up were more likely to be counseled by professionals on IYCF, which have direct contribution to improve their knowledge level (33).

**Strength And Limitation Of The Study**

The questionnaire utilized for this study is based on the WHO IYCF Indicators parameters. This study was the first to be conducted in Asossa. However the limitation of the study is that it was conducted among lactating mothers that opted for post-natal services and hence, the findings of this study may not be representative of the situation of infant and young child feeding practices for the community at large.

**Conclusions**

Overall mothers had good knowledge and a fair attitude about IYCF practices. Age of mothers, Place of delivery, Did you ever heard information about IYCF, and ANC follow up were statistically associated with mothers knowledge on IYCF recommendation Behavior change communications intervention strategies, which would support IYCF practices, should be introduced in mothers to bridge the gap between knowledge and practices.

**Recommendations**

Based on the above conclusion, the following are recommended:
• The study recommended to revitalizing and expanding the Baby-friendly Hospital Initiative and Establishing of breastfeeding intervention programs for protection, promotion, and support of breastfeeding.

• I recommend for health worker to provide information on the involvement of male partner in antenatal care is integrated into the public health system.

• Education on infant and young child feeding recommendation should be strengthened during antenatal care visit and using mass media especially for mothers with lower educational status to fill up of this gap.

Abbreviations

ANC= Antenatal Care, AOR= Adjusted Odd Ratio, BF= Breast Feeding, BGR= Benishangul Gumuz Region, CI= Confidence Interval, CSA= Central Statistical Authority, COR= Crude Odds Ratio, EBF= Exclusive Breast Feeding, EDHS= Ethiopian Demographic and Health Survey, HHs= Households, IHRERC= Institutional Health Research Ethical Review Committee, IYCF= Infant and Young Children Feeding, KAP= Knowledge, Attitude and Practice, OR= Odds Ratio, PNC= Postnatal Care, SD= Standard Deviation, SPSS= Statistical Program for Social Science, TV= Television, UNICEF= United Nation Children’s Fund, WHO= World Health Organization.

Declarations

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Authors’ contributions

DGA and TK design and conceived the study, developed the tool, coordinated data collection, and carried out the statistical analysis and drafted the manuscript. Both authors read and approved the final manuscript.

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

Availability of data and materials

Data will be available upon request from the correspondence authors.

Consent for publication

Not applicable.

Ethics approval and consent to participate

This study was approved by Pharma College, school of graduate public health and obtaining letter of clearance. An official letter of cooperation was also being given to Assosa district health office and Assosa zone health office. Official letter to get permission obtained from Assosa district health office. Privacy and confidentiality was maintained throughout the study period by excluding personal identifiers during data collection.

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