

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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Abstract

Background Through the health extension package Ethiopia had practiced infant and young child feeding. However, infant and young child feeding (IYCF) practice has been poor. 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. A 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, 456(93.8%) of mothers had good knowledge, 432(88.9%) had a positive attitude, and 380 (78.2%) mothers had good practice of IYCF practice recommendations. Furthermore, age of mothers, educational status of the mother, place of delivery, father's educational status, father's involvement & support, previous knowledge about IYCF, discussion with their husband about IYCF, and ANC follows up were significantly associated with mother's knowledge on IYCF recommendation.

Conclusions Overall mothers had good knowledge and a positive attitude about IYCF practices. To support IYCF practices, behavior change communications intervention strategies should be introduced in mothers to bridge the gap between knowledge and practices.

Background

Infant and young child feeding (IYCF) consists of initiation of breastfeeding within one hour of birth, exclusive breastfeeding (EBF) for six months, a continuation of breastfeeding for up to two years and beyond the introduction of complementary foods, minimum dietary diversity, minimum meal frequency, minimum acceptable diet, and consumption of iron-rich or iron-fortified foods [1-3]. IYCF has a major role in determining the nutritional status of children, maximizing the growth rate of a child at early years of life [2, 4], and has great potential for reducing under-five malnutrition and thereby affecting child mortality rate. Also, to improve the child health and development outcomes in poorly resourced communities, improved IYCF practices are crucial [5]. Hence, factors, such as the 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 [4, 6-8].

During optimal complementary feeding (CF) program the quantity and quality of food, frequency, and timeliness of feeding, food hygiene, and feeding during or after illness are highly considered [9]. Besides these facts, inadequate complementary feeding practice of 6 months to two years old children is a major problem [4]. In low-income countries (LICs) improving the nutrition of infants and young children is a top priority for human development [5]. However, according to the 2020 world health organization's (WHO)

report, in low- and middle-income countries under-nutrition was linked to 45% of deaths among children under 5 years of age. In the same year, 47 million children under 5 years of age are wasted, and 14.3 million are severely wasted and 144 million are stunted [3]. Inappropriate nutrition can also lead to childhood obesity which is an increasing public health problem in many countries [3].

Optimizing nutrition early in life including the 1000 days from conception to 24 months ensures the best possible start in life, with long-term benefits [10]. Especially, breastfeeding is one of the most effective ways to ensure child health and it 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]. However, according to the current WHO report, nearly 2 out of 3 infants are not exclusively breastfed for the recommended 6 months a rate that has not improved in 2 decades [3].

In Sub-Saharan African regions, micronutrient deficiencies, poor quality of complementary foods, suboptimal infant feeding practices, and frequent infections have mainly contributed to the high mortality among infants and young children [12]. Since 2004 to improve feeding practice IYCF guideline was developed and implemented in Ethiopia. However, concerning all three IYCF practices (breastfeeding status, number of food groups, and times they were fed) the feeding practices of only 7% of children aged 6 to 24 months meet the minimum standards [13] and infant and young child feeding (IYCF) practice has been poor [14, 15]. Poor child feeding practices, inadequate quantities, and inadequate quality of complementary foods have a severe consequence on health and growth in children less than two years of age [16]. 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

Study area

The study was conducted in Assosa District, which is one of the seven administrative districts of Assosa zone, BGR. There are a total of 18,828 under five children and 6,773 under 2 years age of infants [17]. The District is located 20 kilometers away from Assosa, 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 $n = (Z_{\alpha/2})^2 P(1 - p)/d^2$. By the following assumptions: The level of confidence (α) 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.

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 $p < 0.025$ 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.

Results

Socio-demographic characteristics of the respondents

A total response rate of the study was 486 (98.2%). Mean (\pm SD) age of the participants was 29.5(5.4) years. The majorities were illiterate of which 232 (47.7%) unable to read and write, 412 (84.8%) of them lives in rural areas, and 248 (51.0%) of them were housewife (**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%
Age of children (years)		
0-6months	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%
Place of residence		
Rural	412	84.8%
Semi-urban	74	15.2%
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%
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%
Parity		
1	416	85.6%
2	68	14.0%
≥3	2	0.4%

Knowledge of Respondents about IYCF Practices

Overall, 456 (93.8%) mothers had good knowledge on IYCF practice recommendation. 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. Furthermore, 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%
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	-	
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, **hrs**= hours, **IYCF**= Infant and young children feeding, **PNC**=Post natal care, **TV**=Television

Attitude of Respondents towards IYCF Practices

With regard to attitude about IYCF, 410(84.4%) participants agreed that breast feeding should start immediately after delivery and 372(76.5%) also agreed that exclusive breast feeding for the first six months is necessary. Approximately three quarter reported that babies shouldn't be given anything except breast feed until 6 months. Majorities 444(91.4%) were agreed that complementary feeding should be started after 6 months (**Table 3**). Concerning the level of attitudes, more than half (88.9%) of the participants had positive attitude towards IYCF recommendations.

Table 3 : Attitude of Respondents towards IYCF Practices

Attitude question	Disagree	Not sure	Agree
Breast feeding should start immediately after delivery	44(9.1%)	32(6.6%)	410(84.4%)
Babies shouldn't be given anything except BF ≤6 months	88(18.1%)	26(5.3%)	372(76.5%)
A child can be given butter, sugar and water ≤6 months	276(56.8%)	22(4.5%)	188(38.7%)
Complementary feeding should be started after 6 months	36(7.4%)	6(1.2%)	444(91.4%)
Formal meal is more convenient	322(66.2%)	28(17.3%)	136(28%)
Cow milk is more convenient	370(76.2%)	8(1.6%)	108(22.2%)
BF should continue up to 2 years	22(4.5%)	2(0.4%)	462(95%)
A child should be breastfeed 10 and more than 10/24 hrs	18(3.7%)	4(0.8%)	464(95.5%)
The child food to eat at one time should include VitA, and Fruit etc...	34(6.9%)	14(2.9%)	438(90.1%)
Snack should be given to the children between meal	12(2.4%)	30(0.8%)	444(91.3%)
Serving balanced foods prevent malnutrition disposal	28(5.7%)	16(3.3%)	442(90.9%)
Serving only starchy food prevent malnutrition	274(56.4%)	38(7.8%)	174(35.8%)
Malnutrition can be caused by disease	76(15.6%)	28(5.8%)	382(78.6%)
Serving indigenous fruit/vegetable can keep children healthy	106(21.8%)	24(4.9%)	356(73.2%)

BF= Breast feeding, hrs= hours

IYCF Practices

A total of 406(83.5%) children were breast-fed within an hour of their birth and majority 370(76.1%) of children had more than ten frequency of breast feeding. In addition, three hundred eight (87.2%) of children were exclusively breast-fed for the first six months of life and nearly half 240(49.4%) children started with complementary feeds at 6 months. However, 334(68.7%) children were complementary food at least 3times/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, educational status of the father's, father's involvement & support, previous knowledge about IYCF, discussion with their 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)		
Illiterate	6	140	1		
Place of delivery					
Home	8	32	1	1	
Health institution	22	424	4.82(1.99,11.68)	4.47(1.46,13.68)	0.009
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 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, **CIs**= Confidence intervals, **COR**= Crude odds ratio, **IYCF**= Infant and young children feeding

Discussion

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

Overall, 93.8% of mothers had good knowledge of IYCF practice recommendations. Mothers who have good knowledge of IYCF recommendations were more likely to have better feeding practice than mothers who have poor knowledge [18, 19]. The finding that we get from this study was higher than the study findings in Bennatsemay woreda (45.7%), and Nairobi city (49.5%) [20, 21]. On the other hand, this finding was lower than the study findings in Shebele Zone, in India, and Solapur city [22-25]. This disparity may be explained by the fact that most of the mothers in this study had no formal education on infant feeding [25], the time gap between studies, and the 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.

The mother's general knowledge base was higher evidenced than an attitude about IYCF practices. Recent studies reported that the IYCF attitude of participants was limited [5, 14]. On the contrary, other studies found a desirable attitude of mothers and fathers towards IYCF practices. However, even though the mothers perceived good knowledge, one-fourth of fathers influenced the earlier stopping of breastfeeding. This is due to a common belief in Papua New Guinea that whilst a woman is breastfeeding a couple should not resume sexual relations. To enhance to good IYCF practices, the mothers/caregivers need to have both good knowledge and attitude towards IYCF [23]. The current study was also supported a similar finding.

For the poor growth of children, poor practices can be one of the reasons. In a study conducted in West Bengal, India IYCF practice was higher and it was significantly related to the age and educational status of the mothers. One such study in Kerala reported that 84.1% of mothers exclusively breastfed their child [26]. It was reported that despite mothers having good knowledge about IYC, mothers' practice in feeding the child was poor [22-24]. Hence, despite their knowledge about IYCF hands-on training and practical exposure is the key to improve the feeding practices.

It has been reported that 63.4% of mother's breastfed their child for first 6 months, 65% of children were introduced to complementary feeds after the 6 months. Breast milk is the ideal food for infants. It is safe, clean, and contains antibodies that help protect against many common childhood illnesses [3, 27]. In this study majority of mothers initiated breastfeeding the child within one hour of birth which is higher than the previous study [28]. One former study was reported that the recommended duration for early breastfeeding recognized by 92% of the mothers, 96.9% knew about the duration for exclusive breastfeeding, although only 25% knew about the time to start complementary feeds [22]. In other

previous studies, it was reported that 65.8% of infants were not initiated breastfeeding within one hour of birth [2], 17% were breastfed exclusively [29], 74% were breastfed for 12 months and only 41% were initiated with complementary feeds at age of 6 months [30].

This study shows that the likelihood of a good knowledgeable mother was 71 % times less likely for mothers age between <24 years old than mothers who were ≥ 30 years old. A Similar result was reported from a study finding in Nairobi city, Kenya [21]. 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 a 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, **CF**= Complimentary feeding, **CIs**= Confidence Intervals, **CSA**= Central Statistical Authority, **COR**= Crude Odds Ratio, **EBF**= Exclusive Breast Feeding, **EDHS**= Ethiopian Demographic and Health Survey, **hrs**= Hours, **HHS**= Households, **IHRERC** = Institutional Health Research Ethical Review Committee, **IYCF**= Infant and Young Children Feeding, **KAP**= Knowledge, Attitude and Practice, **LICs**= low- income countries, **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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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.

Consent for publication

Not applicable.

Availability of data and materials

Data will be available upon request from the correspondence authors.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

DGA, TTW, WM, and EDZ design and conceived the study, developed the tool, coordinated data collection, and carried out the statistical analysis and drafted the manuscript. All authors read and approved the final manuscript.

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