



ST.PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE

**KNOWLEDGE, ATTITUDE AND PRACTICE OF INFANT FEEDING AND FACTORS
AFFECTING IT AMONG CAREGIVERS OF CHILDREN UNDER TWO YEARS WHO
ARE ADMITTED TO ST.PAUL'S MILLENNIUM MEDICAL COLLEGE ADDIS
ABABA: AN INSTITUTION-BASED CROSS-SECTIONAL STUDY**

BY TSIRHAAREYAM TSEGAYE (MEDICAL INTERN)

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HOSPITAL MILLENNIUM MEDICAL COLLEGE, DEPARTMENT OF MEDICINE AS
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Addis Ababa, Ethiopia



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Abbreviations and Acronyms

- ANC - Antenatal Care
- AOR - Adjusted Odds Ratio
- EBF - Exclusive Breast Feeding
- EDHS - Ethiopian Demographic Health Survey
- EMDHS - Ethiopia Mini Demographic and Health Survey
- EPHI - Ethiopian Public Health Institute
- ETB - Ethiopian Birr
- IYCF - Infant and Young Child Feeding
- IYCFP - Infant and Young Child Feeding Practices
- KAP - Knowledge, Attitude, and Practice
- LMICs - Low Middle Income Countries
- MAD- Minimum Acceptable Diet
- MDD - Minimum Dietary Diversity
- MMF - Minimum Meal Frequency
- SNNPR - Southern Nations, Nationalities, and Peoples' Region
- SPHMMC - St. Paul's Hospital Millennium Medical College
- TIBF - Timely Initiation of Breast Feeding
- TICF - Timely Initiation of Complementary Feeding
- UNICEF - United Nations Child's Fund
- VIF - Variance Inflation Factor
- WHO - World Health Organization

Abstract

Background: Optimal Infant and young child feeding practices(IYCFP) are critical for child survival and Development yet data from health-care settings remain limited.

Objective: This study assesses the knowledge, Attitude and practice (KAP) of infant feeding practice and associated factors affecting it among caregivers at a tertiary hospital in Ethiopia.

Methods: An institution-based cross-sectional study was conducted among 213 systematically selected caregivers of children under 2 years admitted to the pediatric department of St.Paul Millennium Medical College(SPHMMC), Addis Ababa, from September to November 2025. Data were collected using a standardized questionnaire and analyzed using descriptive statistics and Multivariate Logistic Regression.

Result: The magnitude of good knowledge and positive attitude was high (95% each). However, significant implementation gaps were identified: timely initiation of breastfeeding (TIBF) was 64.1%, and exclusive breastfeeding (EBF) was 61.8%. Timely initiation of complementary feeding (TICF) at 6–8 months was 82.4% , 64.2% met the minimum dietary diversity (MDD), and 99.1% met the minimum meal frequency (MMF). Notably, 59.4% of mothers practiced sub-optimal breastfeeding techniques (alternating breasts frequently), and 26.7% incorrectly believed breastfeeding should not be increased during childhood illness. Multivariate analysis identified educational status as the strongest predictor of KAP: caregivers with secondary education or higher had significantly higher odds of positive attitude (AOR = 4.91; 95% CI: 1.25–19.32), appropriate breastfeeding (AOR = 3.52; 95% CI: 1.68–7.38), and appropriate complementary feeding (AOR = 7.64; 95% CI: 2.33–25.01). Household income (>10,000 ETB) was a critical determinant of breastfeeding (AOR = 2.27; 95% CI: 1.16–4.41) and complementary feeding practices (AOR = 4.47; 95% CI: 1.63–12.27).

Conclusion: This indicates that even-though caregivers are informed about Infant feeding practice, there remains a huge knowledge-to-practice gap. Interventions should give emphasis on practical counselling mainly on techniques of breast feeding, sick child feeding, appropriate dietary restrictions for children and addressing economic barriers.

Key words- Knowledge, Attitude, practice

1. Introduction

1.1. Background

The first two years of life provide a critical window of opportunity for ensuring children's appropriate growth and development through optimal feeding. Poor nutrition increases the risk of illness, and is responsible, directly or indirectly for a significant percentage of under-five mortality and it has been linked to various long-term growth and intellectual deficiencies[1]. World Health Organization [WHO] and United Nations Child's Fund [UNICEF] put a global recommendation for optimal child feeding practices. *Exclusive breast feeding* [EBF] for the first 6 months- meaning an infant receives only breast milk from his or her mother with the exception of oral re-hydration solution, drops or syrups consisting of vitamins, minerals supplements or medicine[2].

Complementary feeding is the process of starting feeding therefore other foods and liquids, When breast milk is no longer sufficient to meet the nutritional requirements of infants. The target range for complementary feeding is generally taken to be 6 to 23 months of age, even though breastfeeding may continue beyond two years[2].

Global prevalence of WHO infant feeding practices in Low Middle Income Countries [LMICs] published in 2021 showed that Worldwide, less than one third of infants aged 4–6 months were exclusively breastfed and only 17% of children aged 6–23 months in 80 low and middle income countries had complementary feeding fulfilling the minimum diet diversity and meal frequency[3,4] . It found that, in sub-Saharan African countries, only 1/4th was exclusively breastfed at 4–6 months of age, and the proportion of children 6–23 months getting a minimum acceptable diet was 13%, which was lower than the global average [4]. This is in a high discrepancy with the target to increase the global coverage of exclusive breastfeeding at 5 months to 70% by 2030 [1] .

In Ethiopia in particular, a systematic review and meta-analysis of 70 studies reported that, the national prevalence of timely initiation of breastfeeding [TIBF] was 66.5%, exclusive breastfeeding (EBF) was 60.1% and timely initiation of complimentary feeding [TICF] [initiation by 6 months] was found to be 62.5% [5]. The most recent Ethiopian Demographic Health Survey [EDHS] reports TIBF to be 72.5% and EBF 57.3%[6].

Factors that are implicated to affect breast feeding and complimentary feeding practices include place of delivery, Antenatal care[ANC] and post-natal care, previous training on Breast feeding practices, maternal educational status and household food security[7,8].

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[5]. So it is a basic knowledge requirement for parents or caregivers, nurses, physicians and all that are working on child health and development[5].

1.2. Statement of the problem

Infant and young child feeding practices particularly less than 2 years of age directly affect the health, development and nutritional status that ultimately impact child survival. Globally and regionally many studies that have been done on community level show that IYCFP is sub-optimal to the WHO recommendation. According to a study in LMICs published in 2021 showed that worldwide, only 32% were exclusively breast fed at 4-5 months and TICF was found to be 63.1%[4]. In Africa the EBF practice in particular still remains low, in some regions as low as 10% [9] . In sub-Saharan African countries, only 1/4th was exclusively breastfed at 4–6 months of age, and the proportion of children 6–23 months getting a minimum acceptable diet was 13% [4] .

In Ethiopia surplus studies have been done on the topic of which recent ones show that there is a significant improvement in breast feeding practices. Adequate and appropriate complementary feeding practices is still a burning issue. The most recent EDHS reports TIBF to be 72.5%, EBF 57.3%[6]. A cohort study done in 5 regions published in 2025 reported a major gap in the effectiveness of the complementary feeding showing that Sixteen percent of infants aged 12 months had a diversified diet, and 49% consumed sugary foods or beverages [10] .

Factors that are implicated to affect breast feeding and complimentary feeding practices include place of delivery, Antenatal care [ANC], previous training on Breast feeding practices, maternal educational status, and household food security[8].Despite the surplus amount of data on infant feeding practices nationally, there is paucity of studies estimating the magnitude of the problem, possible barriers and effectiveness of current health-care service provided for the patients, particularly patient education. So here there is a clear gap since the practice of feeding among parents hasn't been assessed as they are admitted to a hospital where intervention (patient Education) is at its maximum. So, this study aimed to assess the knowledge attitude and practice of parents or caretakers on IYCFP on institution level and possible risk factors affecting it. This study shone light on the effectiveness of the current patient care practice and possible missed opportunities regarding patient education on the topic. So, it would be a great input to plan intervention accordingly.

1.3. Significance of the study

Despite the abundance of studies on infant feeding practice in Ethiopia, there is limited data on the topic in a health-care setup. So, this study provided indispensable information for different

stakeholders and sectors working on the issue. The study will benefit the study participants by assessing their knowledge and practice on infant feeding and creating an initiation to take further training for appropriate care of their children.

The study will help first line physicians and nurses to update their practice and give emphasis on patient education for better care. Importantly for the Department of pediatrics and child health, the study will be a great input to identify gaps in counselling, support and implementation of national guidelines; open gates to do further research and hold training to improve patient education.

On a national level since there is shortage of studies that assess knowledge and practice of infant feeding among caretakers in the health-care setup, it will provide a good insight about the magnitude of the issue to guide future intervention and improve patient care. It will set a good ground for future research to be done on the topic.

2. Literature Review

2.1. Literature Review on Infant Feeding Practices Globally and Regionally

Infant feeding practices are critical to ensuring optimal growth and development during the first years of life. In Ethiopia, where malnutrition remains a significant public health issue,

understanding breastfeeding and complementary feeding practices is essential for improving maternal and child health outcomes. This literature review synthesizes findings from various studies conducted in the past decade, focusing on breastfeeding and complementary feeding practices. It highlights that since the majority of the studies are done on a community level, it's valuable to have studies conducted on health-care setups to better understand infant feeding practices in clinical settings. This could provide valuable insights into the specific challenges and opportunities present in hospital environments.

Globally, WHO infant feeding practices in LMICs published in 2021 showed that worldwide, initiation of breast feeding in 1hr of birth was 51.9%, while only 32% were exclusively breast fed at 4-5 months. TFCF was found to be 63.1% and 14.9% had prelacteal feeds[4] . According to the study, upper middle-income countries had relatively poor EBF practice compared to LMICs. TFCF was noted to be better in middle upper income countries relatively [4]. Only 17% of children aged 6–23 months in 80 low and middle income countries had complementary feeding fulfilling the minimum diet diversity and meal frequency of which the lowest was recorded in central and west Africa[3]. Another paper published in 2023 showed world-wide only 44% of infants under 6 months of age are exclusively breast fed showing significant barriers exist[9] .

In Africa, early initiation of breast feeding was 55.8%, while EBF at 4-5 months 27.3%. TFCF was 68.5% and prelacteal feeds was reported to be 16.4%. The study also compared the trends between 2000-2009 and 2010-2018 and it shows that there is an increment in prevalence of EBF and TFCF with a drop on prelacteal feeds[4]. Another study showed that EBF practice in Africa still remains low, in some regions as low as 10%[9].

It found that, in sub-Saharan African countries, the numbers fall lower than the global averages , only 24% was exclusively breastfed at 4–6 months of age, and the proportion of children 6–23 months getting a minimum acceptable diet was 13%[3]. This underscores a significant gap in achieving targets of EBF 70% by 2030.

Global and regional evidences demonstrate consistent patterns. While awareness and initiation of breast feeding remain high, continuation of breast feeding and appropriate complimentary feeding is inadequate reflecting some knowledge to practice gap driven by socioeconomic and health system related factors.

2.2. Breast feeding Knowledge, Attitude and Practice in Ethiopia

A systematic review and meta-analysis done in 2023 reported that the pooled prevalence of good knowledge regarding exclusive breast feeding was 74.2% and similarly a pooled positive attitude to EBF was observed in 77% of involved studies[11]. In subgroup analysis the highest knowledge and favorable attitude prevalence was found in institution based studies[11]. The pooled prevalence of EBF practice reported from the same study was 53.8%[11]. This study highlights a significant knowledge to practice gap as noted that despite a higher level of knowledge and attitude on breast feeding, the care givers lack on EBF.

By contrast a cross-sectional study done in 2021 in Assosa zone, western Ethiopia showed consistent findings across all KAP parameters. A good knowledge (93.8%), positive attitude (88.9%) and appropriate feeding practices in 78.8% of participants[12]. This shows that contextual factors play a significant role in affecting behavior.

A systematic review and meta-analysis of 70 studies from 2009 to 2018 highlighted promising trends in breastfeeding practices across Ethiopia. The research revealed that the national prevalence of timely initiation of breastfeeding (TIBF) was 66.5%, exclusive breastfeeding (EBF) was 60.1%[5]. These figures indicate a gradual improvement in breastfeeding practices, with significant increases in EBF noted since 2009[5]. A birth cohort study done in 2025 in 5 regions corroborated these findings, reporting that 67% of newborns were breastfed within the first hour after delivery, and nearly all infants (97%) were still breastfeeding at 12 months[10]. These studies show that breast feeding practices particularly early initiation and EBF have been improving overtime. However geographical disparities still exist, highlighted by a study done on exclusive breast feeding and associated factors in a pastoral community of Sawena district, Bale Zone Oromia showed a significant geographical difference in the above mentioned figures on EBF reporting it to be 53.8%[7]. Another study done in Dugda district reported that only 43.4% of breastfeeding mothers practiced effective breastfeeding techniques[13]. Important issue that decreases EBF is prelacteal feed that was reported on a systematic review and meta-analysis by Habtewold to be 12.2% [5].

Significant factors that has been associated with knowledge attitude and practice of breast feeding include household food security, Antenatal care(ANC), Counseling on Breast feeding practices and maternal educational status significantly influenced these practices[7,13]. Although the current breast feeding practices are promising, additional work is mandatory to narrow the

Knowledge-to-practice gap and geographical disparities. In Addition more effort should be mandated in adoption of effective breast feeding techniques.

2.3. Complimentary feeding practice in Ethiopia

As infants transition from exclusive breastfeeding to Complementary feeding it should be timely and a more varied diet. According to a rural study done in south west Ethiopia, the overall complementary feeding knowledge was reported to be 53.2% while their attitude was 47.7% and practice level of 38.9%[14].A different study done in 2022 in yaya district Oromia reported knowledge on complementary feeding to be 79.5% while their attitude was 47.7%. Despite a good knowledge a significant gap was noted in practice; Minimum Dietary Diversity (MDD) -36.6% Minimum Meal Frequency (MMF)-60%[15] .

Timely initiation of complimentary feeding (initiation by 6 months) was found to be 62.5% according to the systematic review and meta-analysis study[5] .Significant geographical differences were being reported by other studies- 83% in Addis Ababa[16]. In North Western Ethiopia 69.8% among urban mothers and 51.9% among rural mothers was reported[8] . On the other hand, a study by Shagaro reported the overall complementary feeding practice to be 9.76%, while timely initiation of complementary feeding was 83.2%, MDD and MDF to be 11.74% and 53.72%[17]. Factors affecting timely initiation of complimentary feeding include place of delivery, maternal education, postnatal care and Antenatal care [8,16]. The improvement in the TIBC highlights a good complementary feeding knowledge but appropriate practice remains low as shown by lower figures of indicators like MDD and MDF; consumption of nutritionally poor foods and sugary items.

A cohort study in 5 Ethiopian regions reported only 16% of infants aged 12 months have a diversified diet[10] and only 21.77% of mothers practiced appropriate complementary feeding according to systematic review and meta-analysis [18]. In addition 49% of infants consumed sugary foods or beverages, raising concerns about the nutritional quality of the complementary foods being offered[10]. Similarly a study conducted in Mettu Town showed that 44.7% of under 24 months children were fed with commercial complementary foods that typically contain unhealthy fats, refined starches, sugars, salt, and additives[19]. Factors significantly associated with complementary feeding KAP include household food security, Antenatal care(ANC), Counseling on Breast feeding practices and maternal educational status[14] .

This highlights a gap in complementary feeding practices despite a good knowledge level that could impact overall infant health. The low proportion of appropriate complementary feeding practices necessitates targeted interventions to improve maternal feeding practice and health service uptake. Despite improvements in breastfeeding and complementary feeding practices, several barriers persist. Cultural beliefs, misconceptions about breastfeeding, and socioeconomic factors contribute to sub-optimal feeding practices. The under-representation of certain regions in studies further complicates the understanding of breastfeeding practices across Ethiopia[18].

Most of the available studies in Ethiopia are community-based, focusing on household level than the health-care setting. As a result there is limited evidence on infant feeding practices on hospital environment . In a country like Ethiopia where health-care facilities play a crucial role in maternal and child health services, KAP studies on IYCFP provides an opportunity not only to evaluate the level of awareness but also the effectiveness of the ongoing interventions, So this research aims to address this gap by assessing KAP on breast feeding and complementary feeding practices and associated factors within the health care setting. This will provide important insights in to missed opportunities and inform targeted interventions to improve infant feeding practices.

4.10. conceptual frame work

The conceptual framework diagram from above illustrates the relationship between independent and dependent variables. Factors such as educational status, household income, ANC follow-up, place of delivery, and previous training are considered as independent variables. These variables are assumed to influence knowledge, attitude, and practice. Knowledge affects attitude, which in turn influences practice, while knowledge also has a direct effect on practice.

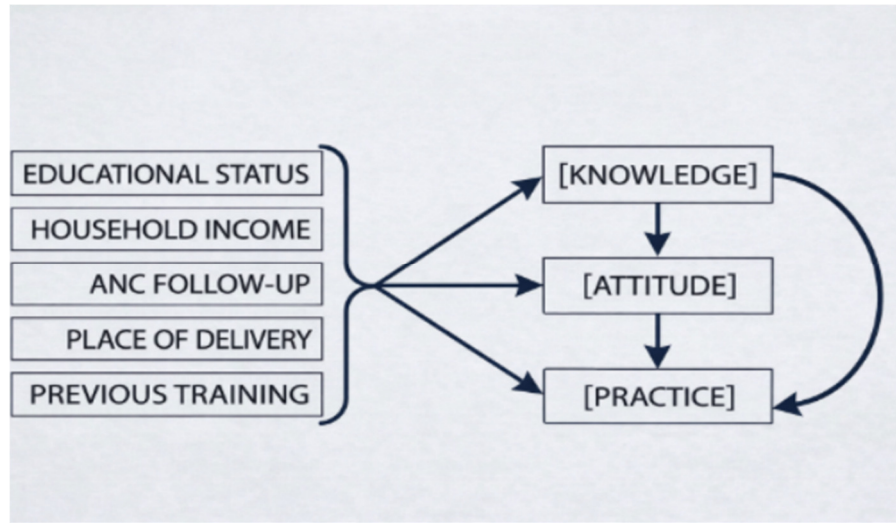


Figure 1. conceptual frame work illustrating the relationships between independent factors and Infant feeding KAP.

3. Objectives

3.1. General Objectives

- To Assess of knowledge, Attitude and practice of infant feeding practice and factors affecting it among parents and caregivers of children less than 2 years old Admitted to SPHMMC.

3.2 Specific Objectives

- To Assess knowledge, attitude and practice about infant feeding among parents or caregivers of children less than 2 years old Admitted to SPHMMC.
- To Determine factors affecting Infant feeding Knowledge, Attitude and practice among parents or caregivers of children less than 2 years old Admitted to SPHMMC.

4. Materials and Method

4.1 Study Area and Period

Saint Paul's millennium medical college (SPHMMC) is a governmental tertiary hospital in Addis Ababa, Gulele sub city [20]. The hospital was established by emperor Haile Selassie and it officially started providing medical education in 2007 and it is currently governed by a board under the Federal Ministry of Health. The college has more than 2800 clinical, academic, administrative and support staff that provide specialty services [20]. Currently the college serves on average 1200 emergency and outpatient clients daily while the inpatient capacity is more than 700 beds [20]. In particular the Department of Pediatrics and Child Health in SPHMMC has around 163 beds and 299 working staff [20]. According to the department case team report monthly on average 200 patients get admitted to the SPHMMC pediatric department. The diverse patient demographic and geographical background makes this health institution a good study area to conduct the study.

Study period: The data collection was conducted from Sep 2025- Nov 2025

4.2. Study design

Institution-based cross sectional analytical study was conducted.

Population

4.4. Source population and study population

Source population were all parents and caregivers whose children are admitted to pediatric Department.

Study Population were all parents and caregivers admitted to pediatric Department on October and November 2025 and fulfilling the inclusion criteria.

Eligibility criteria

4.5. Inclusion criteria

Parents or caregivers whose child was below 2 years old, alive and admitted at the time of the study were included.

4.6. Exclusion Criteria

Parents or caregivers whose child wasn't alive by the time of the study were excluded.

Parents or care givers whose child was older than 2 year was excluded.

4.7. Sample size determination

The sample size was determined using the following single population formulae

$$n = \frac{Z^2 p(1 - p)}{d^2}$$

- P- The prevalence of KAP in feeding children under 2 years old among parents and care givers was calculated separately for each(Knowledge, Attitude and Practice) by taking the percent from previous studies done.

- Knowledge-

Breast feeding knowledge mainly EBF- 77.2% taken from a systematic review and Meta analysis done in 2023[11] Complementary Feeding Knowledge- 52.5% of mothers exhibited high knowledge on a KAP study done in south west[14]. while A study in Oromia found that 79.57% of mothers had good knowledge[15].

The prevalence of knowledge for EBF was found to be 77% but since the complimentary feeding knowledge in different parts of the country was well below that, taking P as 70 would under assess the complimentary feeding knowledge. So 'P' was taken as 60% gave us the largest sample size to assess both components. .

-Attitude

Breast feeding- a positive attitude towards EBF was observed in 77.2%[11].

Complementary feeding- 47.7% of mothers had a favorable attitude towards complementary feeding[14].

In Assosa, 88.9% of mothers had a positive attitude towards IYCF practices[12].

Despite the prevalence of attitude for EBF was found to be 77% since the complimentary feeding counter part was significantly low So 'P' was taken as 60% gave us the largest sample size to assess both components.

Practice

Breast Feeding-According to the birth cohort study in 5 regions namely Addis Ababa City, Oromia, Amhara, Afar, Southern Nations, Nationalities, and Peoples' Region (SNNPR) the BF practice was average to be taken 60% [10] .

Complementary feeding assessed from systematic meta-analysis of 17 studies was found to be average 21.7 % [18].

So 'P' value that would give us the largest sample size for both Complementary and Breast feeding practice was taken that made the P value - 60%.

From the 3 different 'P' calculations from above namely

- For Knowledge P was taken 60%
- For Attitude P was taken to be 60%
- For Practice P was found to be 60%

So the largest sample size was obtained from taking it as P=60%

- P=60%
- $Z_{\alpha/2}$ - critical value at 95% confidence level of certainty = 1.96
- d- The margin error between the sample and the population = 5%

Thus based on the single population formula our sample size was calculated to be 368.79 which was approximately 369, however for a finite population where **no** is above 5 % of the source population correction formula was needed to avoid unnecessary sampling.

$$n = \frac{\bar{n}_0}{1 + \frac{\bar{n}_0}{N}}$$

no was the sample size calculated via a single population formula.

N was the source population.

In monthly period as it's been already stated 200 patients get admitted to the department. It can be estimated that in 2 months around 400 patients get admitted thus our source population was 400. Thus $n=369 / (1+(369/400))$

N= 194 after Adding 10% contingency for non-respondents the sample size became 213.

4.8. Sampling technique

Systematic random sampling technique was used for sampling the study population. Total number of pediatric patients Admitted at the pediatric Department in 8 weeks' period was 400. In the sampling process a fixed interval K was used to choose the study units from the source population. So to determine K we divided the total number of source population which was 400 by this sample size we determined 213.

$Kth = N/n$, where N= total number of cases seen over study period and n = the desired sample size
 $K=400/213$

$K=1.87 \sim 2$

Therefore, the first participant was selected by lottery method then the study units was selected every 2 intervals. When the selected participant didn't fulfill the inclusion criteria then the next study unit in line was taken. This selection was guided by the registration book that daily documented patient's MRN and name Admitted to the pediatric Department (4th floor and 5th floor).

4.9. Study variables

Dependent variables

- Knowledge on feeding children less than 2 years old (Categorical)
- Attitude on feeding children less than 2 years old (Categorical) and
- Practice on feeding children less than 2 years old (Categorical)

Independent variables

- Educational status, (Categorical, Ordinal)
- Monthly income (Categorical)
- if previously had training on infant feeding, (Categorical)
- Place of delivery, (Categorical)
- Antenatal care provision, (Categorical)

4.11. Operational Definition

Infant and Young child Nutrition- a process of providing essential nutrients to infants (from birth to 23months of age) to support their rapid growth and development. It comprises EBF and complementary feeding.

The Level of KAP of parents and care givers was assessed by questionnaire that was adopted from the Assosa Woreda study (Benshangul-Gumuz Region, Ethiopia) and complemented with the WHO standard Infant and Young Child Feeding (IYCF) indicators.

Knowledge- There were 11 questions that assessed the level of knowledge of parents or caregivers on feeding practice of children under 2 years old. Participants who scored **70% or more of the total knowledge score** were classified as having **good knowledge**, whereas those who scored **less than 70%** were classified as having **poor knowledge**[11].

Attitude- there were 8 questions that assessed the attitude of parents or caregivers on infant feeding practices. They were given a score of 1 to 5 about their strength of opinion on the particular topic. Participants who scored **70% or more of the total score** were classified as having positive/favorable attitude, whereas those who scored **less than 70%** were classified as having a **poor / negative attitude**[11].

Practice- There were 11 questions to assess the level of practice of parents or caregivers on infant feeding. Participants who scored **70% or more of the total score** were classified as having **good practice**, whereas those who scored **less than 70%** were classified as having bad practice[11].

4.12. Data Collection, tools , methods and Procedure

The Data was collected by using a pretested and structured questioner by 3 data collectors. The Questionnaire was written in English language and translated to Amharic language. After a verbal consent was taken the Data collector asked the study participants and filled in the answers on the Google form.

4.13. Data Quality Management

To ensure quality of data, pretest was conducted on 5% of the sample population. The pretest was conducted on parents or caregivers of children that visited KHC (Kofe health-care center) in Addis Ababa Ethiopia. This ensured the clarity of the questions and possible adjustments that are required.

Data collectors were oriented about the objective of the research and how to perform the data collection.

4.14. Data Processing and analysis

After the data collection, results were retrieved from the Google form, and it was cleaned and coded. Then it was exported to SPSS version 26 for analysis. For each dependent variable (Knowledge, Attitude, and Practice), a new variable labeled as "sum" was generated to calculate the total score. Specifically, Knowledge sum, Attitude sum, and Practice sum were computed. Within the practice category, Breastfeeding practice and Complementary feeding practice were calculated separately to allow for a more accurate assessment.

Following the summation, a new variable named "weighted" was generated for each dependent variable to categorize the scores. A cutoff of 70% was applied: scores of 70% and above were categorized as "Good," while scores below 70% were categorized as "Poor" (or "Negative" in the case of attitude). Then a descriptive analysis was done and was presented in the form of descriptive statistics - mean, mode and median of prevalence. Each question outcome was presented as a table of percentage.

To facilitate the analysis of associated factors, certain independent variables were re-coded into new binary variables: Educational Status was re-categorized into "High" (secondary education or more) and "Poor" (less than secondary education). Income Level was re-categorized into "High" (above 10,000 ETB) and "Low" (10,000 ETB or less). The weighted variables mentioned above were used as dependent variables to assess the associated factors.

The association between independent and dependent variables was analyzed in two stages. Initially, bivariate logistic regression was performed separately for Knowledge, Attitude, and Practice to assess the association with each independent variable (caregiver's educational status, monthly income, ANC follow-up, place of residence, and previous training on infant feeding). Variables that demonstrated a significant association in the bivariate analysis (defined by a p-value less than 0.25) were then included in a multivariate logistic regression model that will control possible confounding effects. Multicollinearity was checked with Variance Inflation Factor (VIF) and Tolerance test which had VIF less than 5 and Tolerance of less than 0.2. These are the cutoff points used to identify multicollinearity. The Model fitness was checked using the Hosmer-Lemeshow test and the results were fitted $p < 0.05$. The results of the multivariate analysis are reported as

Adjusted Odds Ratios (AOR) with their corresponding 95% confidence intervals and p-value of <0.05 to identify the independent predictors of infant feeding knowledge, attitude, and practice.

4.15. Ethical Consideration

The study was conducted after a formal letter of clearance id was obtained from the Institutional Review Board of SPHMMC. In the data collection process verbal consent was taken from the study participants and they had full right to quit the study. The confidentiality of the data was assured, and participant's anonymity was maintained throughout the study by not recording any identifying information.

4.16. Dissemination of Study findings

The final result of the study will be presented to the department and child health SPHMMC and department of public health SPHMMC. It will be published in reliable journals.

5. Results

Sociodemographic Characteristics

A total of 213 caregivers were involved in the study. Out of these Ninety one percent of caregivers studied were females and 8.8 were males. The mean age of participants was 29 while, the youngest age was 19 and the oldest was 52. The percentage of care givers who have completed secondary education and above are more than 60% while ones with no formal education accounted 11.1%. Majority of the study subjects have family earning of more than 5000ETB. See the detail in the following table.

Table 1. Sociodemographic Characteristics of Caregivers of children less than 2 years old admitted to SPHMMC in 2025, Ethiopia

Variables	Frequency	Percentage
Care giver Sex		
Female	194	91.2
Male	19	8.8
Child's sex		
Female	127	59.7
Male	86	40.3
Educational Status		
No formal Education	24	11.1
Completed Primary School	52	24.4
Completed Secondary School	65	30.9
Diploma	30	14.3
Daegree	27	12.4
Masters and Above	15	6.9
Monthly Income of family		
<2000ETB	15	6.9
2000 - 5000ETB	52	24.4
5000 - 10000ETB	87	41.0
>10000ETB	59	27.6
Age in months of the baby		

<6months	106	49.8
>6 months	107	50.2

Knowledge Level of caregivers on feeding children less than 2 years old

Overall, participants showed a **good level of knowledge about recommended infant feeding practices (95%)**. Most respondents(>90%) understood the importance of colostrum and correctly defined exclusive breastfeeding as giving only breast milk. Early initiation of breastfeeding was commonly reported, with almost 80% mothers starting within the first hour after birth, and 83% participants knew that complementary feeding should begin between six and eight months of age. Knowledge was also nearly 100% regarding breast hygiene, the role of breastfeeding in strengthening the bond between mother and child, its ability to prevent illness, and its benefit to the family's economy. A considerable proportion of participants- 26% believed that breastfeeding should not be increased when a child is sick.

Table 2. Knowledge Level of caregivers on feeding less than 2 years old children admitted to SPHMMC in 2025, Ethiopia

variables	Frequency	Percentage
colostrum is important for the baby		
No	17	7.8%
Yes	196	92.2%
When to start Brest feeding after Birth		
Within 1hr	170	79.7
Within 24hr	41	19.4
anytime	2	0.9
Meaning of EBF		
Feeding breast milk only	211	99.1%
Mixing food and cow milk	2	0.9%
When to introduce complimentary feeding		
Less than 6 months	23	10.6
6-8months	177	82.9

8-12months	13	6
Breast Hygiene before breast feeding		
No	12	5.5
Yes	201	94.5
Breast feeding increases bond between mother and baby		
No	3	1.4
Yes	210	98.6
Breast feeding prevents disease		
No	3	1.4
Yes	210	98.6
Breast feeding should be increased when the child is sick		
No	56	26.7
Yes	157	73.3
Should a breast feeding mother take healthy food		
No	1	0.5
Yes	212	99.5
Is breast feeding helpful for family's economy		
No	1	0.5
Yes	212	99.5

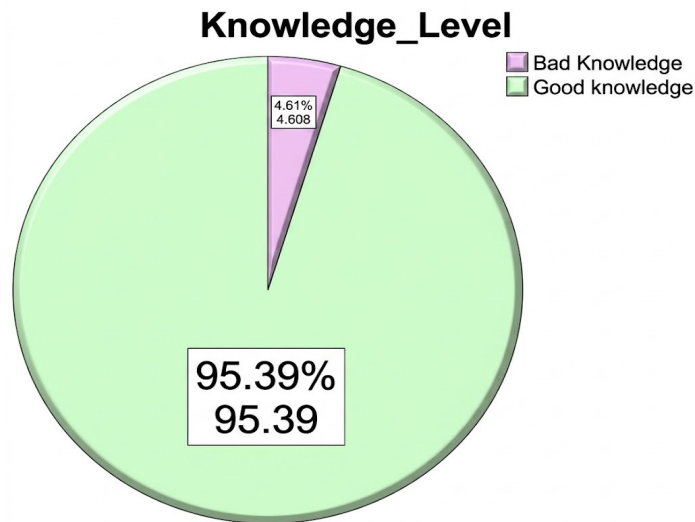


Figure 2. Overall Knowledge level of Caregivers of children less than 2 years old admitted to SPHMMC in 2025, Ethiopia

Attitude Level of caregivers on feeding children less than 2 years old

The study participants generally showed a **positive attitude toward recommended breastfeeding and infant feeding practices (95%)**. Almost 90% of respondents agreed that breastfeeding should start immediately after delivery and supported exclusive breastfeeding for the first six months of life. Timely initiation of complementary feeding after six months were also strongly favorable the percentage being 96%. However a significant proportion agreed with giving infants additional foods or liquids such as butter, sugar, or water indicating gap in the feeding practice.

Table 3. Attitude Level of caregivers on feeding less than 2 years old children admitted to SPHMMC in 2025, Ethiopia

Variable		Frequency	Percentage
Breast feeding should start immediately after delivery	Strongly Disagree	0	0.0%
	Diasagree	13	6.0%
	neutral	6	2.8%

	agree	184	86.2%
	Strongly agree	10	5.1%
Babies should not be given anything except breast milk until 6months	Strongly Disagree	0	0.0%
	Disagree	24	11.1%
	neutral	6	2.8%
	agree	179	83.9%
	Strongly agree	4	2.3%
A child can be given butter,sugar,or water	Strongly Disagree	0	0.0%
	Disagree	127	59.4%
	neutral	20	9.2%
	agree	66	31.3%
	Strongly agree	0	0.0%
Complementary feedings should start after 6 months	Strongly Disagree	0	0.0%
	Disagree	3	1.4%
	neutral	1	0.5%
	agree	205	96.3%
	Strongly agree	4	1.8%

Cow's milk is more convenient than breastfeeding	Strongly Disagree	7	3.2%
	Disagree	187	87.6%
	neutral	1	0.5%
	agree	18	8.8%
	Strongly agree	0	0.0%
Breastfeeding should continue up to 2years	Strongly Disagree	0	0.0%
	disagree	16	7.4%
	neutral	7	3.2%
	Agree	190	84.5%
	Strongly Agree	10	4.6%

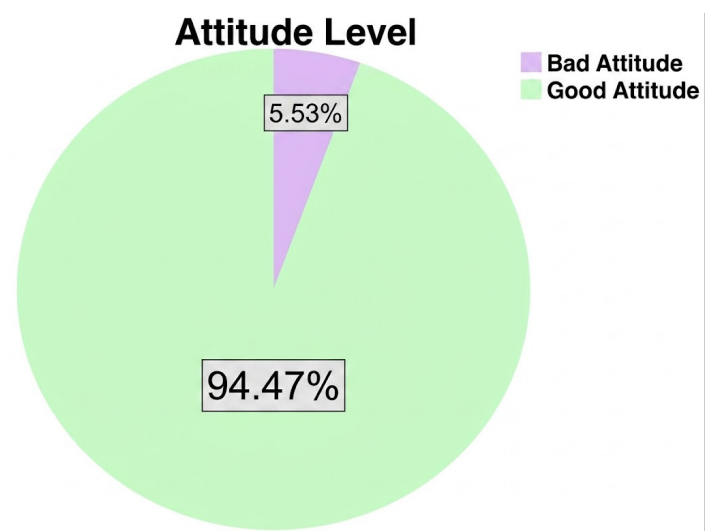


Figure 3. Overall Attitude level of Caregivers of children less than 2 years old admitted to SPHMMC in 2025, Ethiopia

Practice Level of caregivers on feeding children less than 2 years old

Most participants reported **appropriate breastfeeding and complementary feeding practices**.

Overall participants had 63.6% appropriate breast feeding practice and 58.3% appropriate complementary feeding practices. Nearly two-thirds of mothers initiated breastfeeding within the first hour after birth, while about one-third started within the first 24 hours. In the preceding 24 hours, **43.3%** of mothers breastfed 5–10 times, **37.8%** more than 10 times, and **18.9%** less than five times. Exclusive breastfeeding for the first six months was practiced by **61.8%** of participants, while **38.2%** did not follow this recommendation. Regarding breastfeeding technique, a major gap has been noted. **59.4%** of mothers reported feeding from both breasts alternately, and **40.6%** fed one breast and then switched to the other

Complementary feeding was commonly initiated between six and eight months of age, and most children received complementary foods three or more times per day. Finally, **64.2%** of children received foods from at least four different food groups, while **35.8%** did not meet this dietary diversity standard.

Table 4. Practice Level of caregivers on feeding less than 2 years old children admitted to SPHMMC in 2025, Ethiopia

Variable		Frequency	Percentage
When did you start breast feeding after birth	after 24hr	9	4.1%
	within 24hr	68	31.8%
	within 1hr	136	64.1%
How many times did you breast feed in the last 24hours	<5x	40	18.9%
	5x-10x	92	43.3%
	>10x	81	37.8%
Did you exclusively breast feed for the first 6months	no	81	38.2%
	yes	132	61.8%

When did you start complementary feeding	<6months	13	12.0%
	8-12months	6	5.6%
	6-8months	88	82.4%
How many times per day do you give complementary food	<2x	1	0.9%
	3x	50	46.4%
	4x	39	36.4%
	>4x	17	16.4%
Did the child receive foods from at least 4 food groups per day	no	38	35.8%
	yes	69	64.2%
How did you breast feed your baby	Feeding both breasts Alternatively	127	59.4%
	feeding one breast and moving to the other when done	86	40.6%

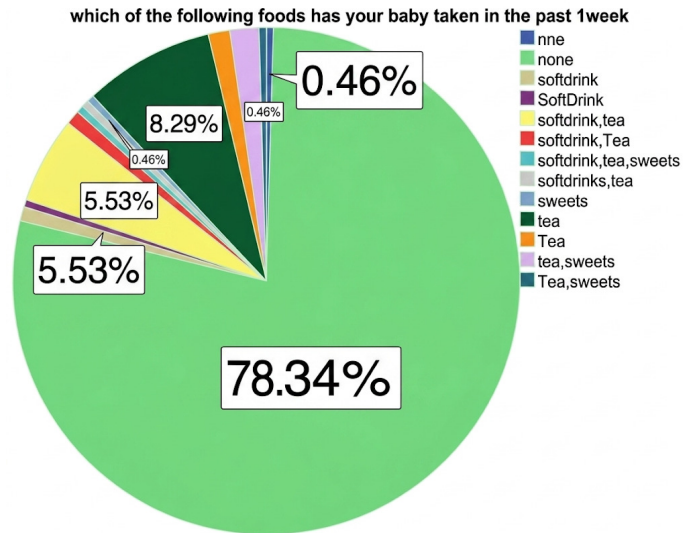


Figure 4. Percentage of foods to avoid given by Caregivers Caregivers of children less than 2 years old admitted to SPHMMC in 2025, Ethiopia

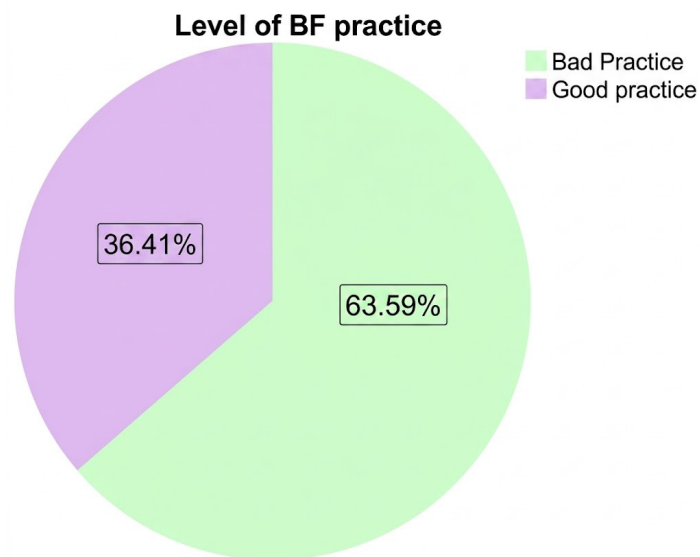


Figure 5. Overall Breast Feeding Practice Level of Caregivers of children less than 2 years old admitted to SPHMMC in 2025, Ethiopia

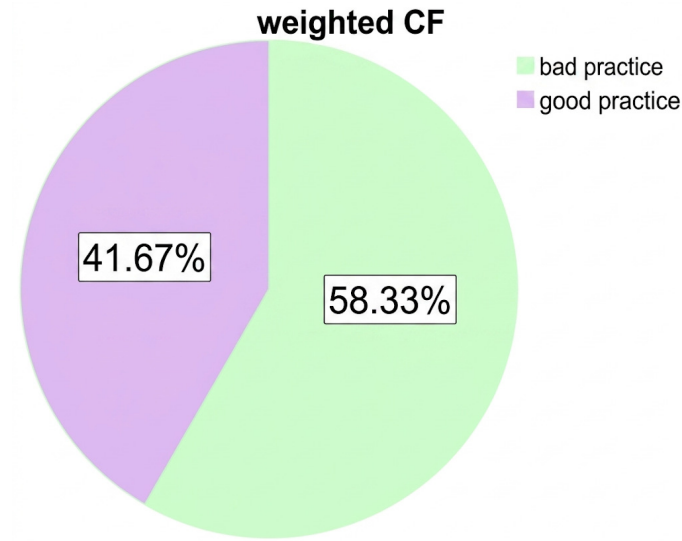


Figure 6. Overall Complementary Feeding Practice Level of Caregivers of children less than 2 years old admitted to SPHMMC in 2025, Ethiopia

Associated Factors

Factors associated with Knowledge, Attitude and Practice of caregivers on infant feeding has been assessed. Based on the previous studies Education level of caregivers, income level, previous training on infant feeding practice, ANC follow up and place of delivery have been taken as the associated factors and the association was done using multivariate logistic regression and the results are presented below.

Good education refers to Secondary education and above while poor education refers to primary education and below. Higher income refers to the household with an income level of >10,000ETB while lower income refers to <10,000ETB.

Association of Factors to the Knowledge of caregivers on infant feeding practice.

Each factors have been assessed with bi-variate logistic regression and variables with P value <0.25 were considered for multivariate analysis. In this case only caregiver's income and educational status were significant to be included in the multivariate analysis.

Table 5. Multivariate Regression of Factors associated with good caregivers' knowledge on infant feeding

Variable	Category	AOR for good knowledge	95% CI	P-Value
Educational status	Good education VS	7.09	1.35-37.27	0.021
	Poor education	1.0 (ref)		
Household Income	Higher Income Vs	1.57	0.17-14.45	0.692
	Lower Income	1.0 (Ref)		

In a multivariate logistic regression analysis examining factors associated with good knowledge, **education level was not significantly associated** with knowledge. Although the P value appears to be significant since the CI is large it makes it less precise. Income was not significantly associated with good knowledge.

Association of Factors to the attitude of caregivers on infant feeding practice.

Each factors have been assessed with bi-variate logistic regression and variables with P value <0.25 were considered for multivariate analysis. In this case, educational status, ANC followup and Place of delivery were significant to be included in the multivariate analysis.

Table 6. Multivariate Regression of Factors associated with caregivers' good attitude on infant feeding

Variable	Category	AOR for good attitude	95% CI	P-Value
Educational status	Good education VS	4.91	1.25-19.32	0.023
	Poor education	1.00(Ref)		
Household Income	Higher Income Vs	3.42	0.59-19.71	0.170
	Lower Income	1.00(Ref)		
Place of delivery	Hospital Vs	1.98	0.28-13.87	0.49
	Home	1.00(Ref)		

The above table shows that Caregiver's educational status was significantly associated with their Attitude towards Infant feeding practices. The ones with good educational status were 5x more

likely to have good attitude towards infant feeding practices. The rest of the variables- ANC followup and place of delivery didn't have statistically significant association with Attitude towards infant feeding practices.

Association of Factors to the Breast Feeding practices of caregivers

Each factors have been assessed with bi-variate logistic regression and in this case all variables got P value <0.25 so all of them were considered for multivariate analysis.

Table 7. Multivariate Regression of Factors associated with caregivers' good Breast Feeding Practice on infant feeding

Variable	Category	AOR for good BF practice	95% CI	P-Value
Educational status	Good education VS	3.52	1.68-7.38	0.001
	Poor education	1.00(Ref)		
Household income	Higher Income Vs	2.27	1.16-4.41	0.016
	Lower Income	1.00(Ref)		
Place of delivery	Hospital Vs	2.25	0.39-12.96	0.364
	Home	1.00(Ref)		
ANC followup	Yes Vs	0.98	0.24-4.09	0.928
	No	1.00(Ref)		
Previous training on infant feeding	Yes Vs	1.75	0.73-4.18	0.210
	No	1.00(Ref)		

The Multivariate logistic regression shows that Caregiver's educational status and household income were significantly associated with Breast feeding practices. Caregivers with good educational status were 3.5x more likely to have appropriate Breast Feeding practices than ones with poor education. Likewise caregivers with higher income level had more than twice the odds of having appropriate Breast feeding practice than the ones from lower income. The remaining

variables- ANC, place of delivery and previous training on infant feeding didn't have statistically significant association with Breast feeding practices.

Association of Factors to the Complementary Feeding practices of caregivers

Each factors have been assessed with bi-variate logistic regression and educational status and Household Income were significant to be included in the multivariate analysis.

Table 8. Multivariate Regression of Factors associated with caregivers' appropriate Complementary Feeding Practice on infant feeding

Variable	Category	AOR for good CF practice	95% CI	P-Value
Educational status	Good education VS	7.64	2.33-25.01	0.001
	Poor education	1.00(Ref)		
Household income	Higher Income Vs	4.47	1.63-12.27	0.004
	Lower Income	1.00(Ref)		

The above table shows that both Caregivers educational status and House Hold income were significantly associated with their complementary Feeding practice. The ones with Good Education were 7x more likely to have appropriate Complementary feeding practice than the ones with Poor education. Similarly caregivers with higher house hold income had 4x higher odds of having appropriate Complementary feeding practice than the ones with Poor education.

6. Discussion

The results demonstrate that overall there is a high knowledge and positive attitude of caregivers towards infant feeding practices while there is significant gap noted on the actual practice of infant feeding mainly on Exclusive Breast feeding, Breast Feeding methods and dietary diversity.

Regarding Knowledge, the Overall knowledge level of participants is 95%. To mention important details, 80% of participants think that breast feeding should be initiated in the first hour of birth while 75% of them chose initiation of complementary feeding at 6 months. These findings significantly exceed previous study findings, Gebeyehu (2023) showing that the pooled prevalence of knowledge on EBF was founded to be 74.5% while, rural studies like Gizaw(2023) reported knowledge on complementary feeding to be 52%[11,14]. A randomized control trial study by Gizaw et.al (2022) in rural south west Ethiopia reported low breast feeding knowledge both on control and intervention groups at baseline[21]. Abdulahi et.al (2021) found that only 52.4% of pregnant women in rural ethiopia had adequate breast feeding knowledge[22]. conversly, a study done in Assossa found Knowledge of IYCFP to be 93%[12]. This disparity could be attributed to the differences study setting and educational status of the care takers. SPHMMC is a tertiary hospital located in the Capital city Addis Ababa. Caregivers accessing this facility likely have increased exposure to health information through ANC and PNC services, as well as various media sources compared to the rural populations. Further more the urban demographic often correlates with higher educational attainment that facilitates better comprehension and retention of health education than the rural population in which those studies were conducted. The higher level of knowledge reported in Assossa district was attributed to the higher socioeconomic status of care givers and urban study setting[12].

Despite the high overall knowledge, the study has identified a significant Knowledge gap, in particular feeding during times of illness. Almost 26.7% of participants think that breastfeeding frequency should not be increased when the child is sick. This misconception is an important cause of dehydration if worse leading to shock in diarrhoea diseases(leading cause of death in under 5 children). These figures implicate that although a significantly high level of knowledge is attained by caregivers at health institutions, targeted clinical counseling on sick child management remains crucial. This is further supported by Hailu et,al (2025) that reported only 40.2% of mothers in southwest Ethiopia practiced appropriate sick child feeding[23], indicating a widespread inadequacy in this critical area.

The participant's knowledge and attitude consistently aligns in the present and previous conducted studies. This study reported overall a high level of positive attitude in 95% of participants which exceeds the previous studies, Gebeyehu (2023) that found 77.2% of mothers to have positive attitude towards EBF and ones done on rural setup Gizaw(2023) also reported 47% of mothers had favorable attitude towards complementary feeding[11,14]. Another study by Abdulahi et.al (2021) reported only 60.9% had a neutral attitude towards breast feeding while Gizaw et.al (2022) also noted neutral attitude[14,22]. More than 70% of good attitude towards breast feeding was reported by Gebretsadik [24].The high positive attitude reported in the present study may stem from the higher IYCFP knowledge reported, which significantly impacts caregivers attitudes. This again is highly contextualized to the study setting, and socioeconomic background given that these studies are conducted in a rural setup.

This study reports that 31.3% of participants agreed that infants could be given butter, sugar, or water before six months. This is found to be higher than the systematic review and metanalysis by Habtewold found it to be 12.2% [5]. This "positive attitude with exceptions" suggests that while caregivers accept the general principles of IYCF, cultural practices like prelacteal feeding still hold significant influence.The higher number observed in this study is a reflection of a common misconception to EBF that emphasizes giving water in addition to Breast milk for less than 6months old would help with the growth of the infants.

In contrast, the level of infant feeding practice was found to be lower than the level of knowledge and attitude but still higher than the national average. The knowledge to practice gap has been found to be consistent with most of the studies.

The practice of EBF (61.8%) in this study was slightly higher than the national average of 57.3% reported in the 2024/2025 Ethiopia Demographic and Health Survey (EDHS) and 60.1% a pooled estimate reported by systematic review and meta-analysis by Habtewold et.al.[5,6] . It also exceeded TIBF reported by cohort study(67%) and EBF reported by a study in Sawena district (53.8%)[7,10]. A recent systematic review and meta-analysis by Tadesse reported a pooled prevalence EBF (59.6%), TIBF(64%)[25]. This disparity observed between the studies can explained by when the study was conducted and the institutional setting it took place, that gives better exposure to health education and opportunities of intervention. Besides the urban environment and higher socioeconomic status also influences the IYCFP.However despite the improvements, current finding still remains below the WHO global target of EBF 70% by 2030[1].

A notable technical deficiency was observed in breastfeeding methods: 59.4% of mothers reported alternating breasts frequently during a single session. This practice likely prevents the infant from receiving fat-rich hind-milk, which is essential for satiety and weight gain. This finding indicates that good knowledge does not always translate into good practice, as environmental factors, socioeconomic barriers, and technical misconceptions interplay. It underscores the necessity for targeted interventions that provide practical, hands-on demonstration of breastfeeding techniques beyond theoretical counseling.

Majority of the participants(82%) had initiated complementary feeding by 6-8 months and almost 82% feed their children 3-4x/day. This finding is relatively better to the systematic review and meta-analysis study that reported TIBC 62.5% and Northwestern Ethiopia urban(69.8%) and rural(51.9%) studies[5,8].In addition the present study also reported 64.2% of children met the minimum dietary diversity (at least four food groups) among the participants while the MDD was noted to be significantly low (only 16%)according to a cohort study on 5 regions and 53.7% by shagaro[10,17]. Tadesse et.al reported pooled prevalence of MDD at 19.8% and TICF 60.5% [25]. This significant difference shows the "urban-institutional advantage," where caregivers in urban settings are likely in a better socioeconomic status to have better access to diverse food groups and specialized pediatric counseling compared to the national average, which is weighted by rural populations. This is consistent with previous studies that conclude complementary feeding is highly correlated with the socioeconomic context, access to health services and urban vs rural residence of the population[8].

This study also found that 43% of participants have included sugary foods, Beverages and tea in the child's meal that is consistent with the national data indicating 47% of Mothers had given their children the above stated contents indicating an important gap requiring intervention that is mainly attributed to the cultural misconception despite the overall higher knowledge and attitude towards infant feeding [10].

Associated Factors

Multivariate analysis identified **educational status** and **household income** as the strongest predictors of KAP. Caregivers with secondary education or higher were 5 times more likely to

have a positive attitude but significant association wasn't identified to IYCF knowledge. This result contrasts with a study done on southwest Ethiopia finding that maternal education is a primary predictor of IYCF knowledge[14]. The present study couldn't find association between educational status and knowledge level on Infant feeding because the CI became big making it imprecise to predict the association.

Caregivers with secondary education and above are also 3x and 7x more likely to have appropriate Breast Feeding and complementary Feeding practices respectively. This finding is supported by the 2023 meta-analysis, reporting that mothers with secondary education and above are 3.3x more likely of practicing appropriate EBF[11] and Shagaro 2019 also reported mothers with higher education were 5.39 times more likely to have appropriate complimentary feeding[17].Tadesse et.al (2026) and Gebretsadik also found education to be significant factor for EBF[24,25]. similarly, Hailu identified secondary education (AOR=2.58) as significant factor for good sick child feeding practices[23].

Interestingly, while income did not significantly affect knowledge or attitude, it was a major determinant of practice. Caregivers with higher income were 2.27 times more likely to follow appropriate breastfeeding practices and 4.47 times more likely to provide diverse complementary foods. This highlights the "economic barrier" to optimal IYCF; even when caregivers know what to do, financial constraints may limit their ability to purchase a variety of nutritious foods or afford the time required for frequent breastfeeding if they are engaged in low-wage, inflexible labor.Tadesse also identified Household support as factor for EBF and food secure Households were associated with good sick child feeding practices in Hailu [23,25].

A point of worth discussion is that, other factors that have been assessed by the study like ANC follow-up, previous training on infant feeding and place of residence have been found to be not significantly associated, While national meta-analyses for example consistently find ANC to be a strong predictor of EBF[5,11,25], and a regional study by Hussein et al. (2024) also showed a strong association[7]. This may be because most caregivers had appropriate ANC follow up, and most were from the urban setting leading to a ceiling effect where the variation in ANC and place of residence were insufficient to show a statistical association with practice. In contrast, the "economic barrier" remains a dominant factor even in this specialized setting, as evidenced by the high odds ratios for household income.

Improving infant feeding practices requires a multifaceted approach. Interventions shouldn't only focus on increasing knowledge and attitude but also address socioeconomic barriers, strengthen healthcare-based counselling and promote practical, context specific strategies that enables caregivers to translate knowledge into action.

7. Strength and Limitation

- The **strength** of this study include that it evaluated Knowledge, Attitude and practice that gives Holistic view of current infant feeding status and it used a questionnaire adapted from WHO standard IYCF indicators ensures the reliability and comparability of the data. The study used multivariate logistic regression that allowed for the identification of independent predictors while controlling for confounding variables. The fact that it's done on a clinical care setup makes it a good input for intervention since data is scarce in these setups.
- The main **limitation** of this study is the study design being cross-sectional that captures a snapshot in time, making it difficult to establish a temporal or causal relationship between the factors and feeding practices. The other limitations include, recall bias and social Desirability bias that affects the data collection. The study also hasn't incorporated factors like care takers occupation and parity that are important factors affecting Infant feeding KAP. Since this study is institution-based, it can't be generalized to the broader community.

8. Conclusion

This study concludes that caregivers at SPHMMC have a good knowledge and favorable attitude towards infant feeding while there still remains knowledge to practice gap. Exclusive breast feeding and minimum dietary diversity is below the recommended level. The care givers' educational status remained a significant associated factor to attitude and practice while monthly income was a good predictor of appropriate complementary feeding practice. Misconceptions regarding feeding during illness, inappropriate techniques of breast feeding, inappropriate feeding content and the persistence of giving prelacteal liquids like butter and water remain critical areas for intervention.

9. Recommendation

To Health-care Providers

- Targeted counseling that should give emphasis to details, such as the importance of increased feeding during illness and the risks of prelacteal feeding.
- Nurses should provide practical demonstrations and hands-on guidance on breastfeeding techniques, particularly emphasizing emptying of one breast before switching

To Policymakers

- Economic Support Programs like social protection programs or food subsidies for low-income families with young children should be considered, Since income is a major barrier to dietary diversity,
- Community-Based Education to Expand health education to reach caregivers with lower educational backgrounds through community health workers.
- Workplace Policies should advocate for breastfeeding-friendly workplaces (e.g., paid maternity leave and breastfeeding breaks) to promote working mothers to continue EBF.

To Future Researchers

- Prospective Cohort studies are recommended to observe the transition from EBF to complimentary feeding and reasons for early complementary feeding initiation.
- In depth interviews and qualitative researches are recommended to understand the cultural and traditional misconceptions regarding to feeding during times of illness and prelactal feeds

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11. Annexes

A. Consent form

St. Paul Hospital Millennium Medical College Faculty of Medicine. A questionnaire prepared to assess knowledge attitudes and practice of feeding in less than 2 year old children among parents and caregivers whose children are admitted to the pediatric Department of SPHMMC.

Instruction for data collectors: select attendants by systematic random method. Greet the participants and ask the participants to give you some minutes and introduce yourself, read the following informed consent sheet then proceed to interview the participant if the participant agrees.

Information sheet

Good morning/ good afternoon; my name is ----- I am-----year undergraduate medical student at SPHMMC selected to collect data for Tsirhaareyam Tsegaye who is conducting this study as partial fulfillment to obtain a degree in medical doctor. This study aims to assess parents' and caregivers' knowledge, attitude, and practice and associated factors about feeding children under 2 years of age among parents or care takers . To evaluate your knowledge attitude and practice I will ask you some questions that are not difficult to answer. The study will be anonymous thus your name will not be filled in the form and will not be mentioned in the study. Your confidentiality will be kept hence you will not face any problem by participating in this study. If you are not comfortable with the question then you can withdraw from the study at any time you can also skip questions if you don't want to answer some of the questions. Your genuine answer to the questions will help us to understand the level of proper knowledge, existing attitude, and practice of feeding children under 2 years of age among parents or care takers, the result will be used to help the Department of Pediatrics and Child Health of SPHMMC and other responsible bodies to understand the weight of the problem and to come up with possible strategies to enhance knowledge and practice of proper feeding of children less than 2 years of age for parents and caregivers. I would appreciate your help in responding to our questions. The interview will take about 25 minutes, if the questions are not clear to you, you can ask for clarification. Are you willing to participate in the study?

B. Questionnaire

Knowledge, Attitude, and Practice (KAP) and factors affecting feeding practice Questionnaire on Infant and Young Child Feeding

This hybrid questionnaire is adapted from the Assosa Woreda study (Benshangul-Gumuz Region, Ethiopia) and complemented with the WHO standard Infant and Young Child Feeding (IYCF) indicators(15). It includes a scoring guide to classify respondents into good or poor Knowledge, Attitude, and Practice (KAP).

It has four different sections the first section questions about the socio-demographic characteristics of the participants. The second part will assess parents' and caregivers' knowledge level of feeding of under 2 years old. The third section consists of attitude questions and lastly, the fourth part is about the practice of feeding among parents.

I. Sociology-demographic characteristics of parents or caregivers.

1 sex	A male B female
2 Age	
3 educational status	A no formal education B completed primary school C completed secondary and preparatory school D diploma E degree F masters and above
5 residency	A Urban B Rural
6 relation to the child	A mother

	B father C other please specify it -----
8.Monthly income (Categorical)	A. < 1000birr B. 1000- 2500 Birr C. 2500-4000Birr D. 4000 - 5000Birr E. > 5000

Section A: Knowledge(categorical)

Responses: Yes = 1, No/Don't know = 0.

Question	Response (Yes/No)	Score (1/0)
1. Is colostrum important for the baby?		
2. When should a neonate start breastfeeding?		
3. What does exclusive breastfeeding mean?		
4. When should complementary feeding be introduced?		
5. Should lactating mothers take healthy food?		
6. Do you wash your breast before breastfeeding?		
7. Should a child receive snacks between meals?		

8. Does breastfeeding strengthen the bond between mother and child?
9. Can breastfeeding prevent disease?
10. Is breastfeeding helpful to the child's health?
11. Is breastfeeding important economically?
12. Should breastfeeding frequency increase when the child is sick?
13. Who usually feeds the child?
14. Did you discuss child nutrition and feeding with your husband?
15. What is your main source of information?

Section B: Attitude(Categorical)

Responses: Strongly Disagree / Disagree / Neutral / Agree / Strongly Agree. Favorable = 1; Unfavorable = 0.

Attitude Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Breastfeeding should start immediately after delivery.					
2. Babies should not be given anything except breast milk until 6 months.					
3. A child can be given butter, sugar, or water before 6 months.					

4. Complementary feeding should start after 6 months.
5. Formal meals are more convenient for children.
6. Cow's milk is more convenient than breastfeeding.
7. Breastfeeding should continue up to 2 years.
8. A child should be breastfed 10 times or more per day.
9. A child's meal should include Vitamin A-rich foods and fruits.
10. Snacks should be given between meals.
11. Serving balanced foods prevents malnutrition.
12. Serving only starchy food prevents malnutrition.
13. Malnutrition can be caused by disease.
14. Serving indigenous fruits/vegetables keeps children healthy.

Section C: Practice(Categorical)

Part 1: Assosa Study Items

Each appropriate response = 1 point, in-appropriate = 0.

Practice Question	Response	Score (1/0)
When did you start breastfeeding after birth?		
How many times did you breastfeed in the last 24 hours?		
Did you exclusively breastfeed for the first 6 months?		
When did you start complementary feeding?		
For how long did you continue breastfeeding?		
How many times per day do you give complementary food?		
Did the child receive foods from at least 4 food groups yesterday (MDD)?		
Did the child receive the minimum meal frequency yesterday (MMF)?		
Did the child meet both MDD and MMF (MAD)?		

Associated Factors

Question	Response	Score(0/1)
Where did u deliver your baby?	A, Hospital B, Home	
Did u have Previous Training on Feeding children?	A. Yes B. B,No	
Did u have ANC Followup?	A,Yes B,No	

Scoring Guide

Knowledge: Each correct response = 1; incorrect/Don't know = 0.

Good knowledge: $\geq 70\%$ of total score. Poor knowledge: below cutoff.

Attitude: Favorable responses = 1, unfavorable = 0. Good/favorable attitude: $\geq 70\%$ of total score .

Practice: Each appropriate practice = 1; inappropriate = 0. Good practice: $\geq 70\%$ of the total score (or .

WHO IYCF Indicators: Classified based on WHO cutoffs (e.g., MDD = foods from ≥ 4 groups; MMF = minimum age-specific frequency; Minimum Acceptable Diet (MAD) = meets both MDD and MMF).

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