ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS COMPLIMENTARY FEEDING AND ASSOCIATED FACTORS AMONG MOTHERS OF CHILDREN 6 MONTHS TO 23 MONTHS IN JIMMA UNIVERSITY, JUMC, JIMMA SOUTH WEST ETHIOPIA

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THIS RESEARCH WILL BE SUBMITTED TO JIMMA UNIVERSITY, JUMC, DEPARTMENT OF PEDIATRICS AND CHILD HEALTH FOR PARTIAL FULFILLMENT OF REQUIREMENT FOR SPECIALTY CERTEFICATE IN PEDIATRICS AND CHILD HEALTH

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Assessment of Knowledge, attitude and practice towards Complementary feeding and associated factors among mothers of children 6 months to 23 months in Jimma University, JUMC, Jimma South West Ethiopia

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Declaration

Assurance of principal investigator

I, agree to accept responsibility for the scientific, ethical and technical Conduct of the research project & for provision of required progress report as per terms and condition of the college of health sciences in effect at the time of grant is forwarded as the result of this application.

Name of principal investigator **Signature** **Date**

Dr.Alamirew Abebe _____ _____Approval of the advisor

This thesis proposal has been submitted with my approval as university advisor

Name of the advisor **Signature** **Date**

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Acronym And abbreviation

AAP American academy of pediatrics

ANC Antenatal care

CF Complimentary feeding

EBF Exclusive breast feeding

IYCF Infant and young child feeding

WHO World health organization

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I would like to thank Jimma University, college of medicine and health science, department of pediatrics and child health giving me this chance to conduct this research.

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1 Abstract

1.1 Objective

To assess KAP of about complementary feeding towards mothers 6 months to 23 months in Jimma University, Southwest Ethiopia.

1.2 Methods and Materials

The study is conducted in JUMC towards mother of children 6 months to 23 months admitted to pediatrics ward and kept at EOPD by Cross Sectional study design. After data is collected by checklist form and analyzed, result was presented to Jimma University and department of pediatrics and child health.

1.3 Result

1.3.1 Socio demographic factor

A total of 170 mothers were involved in this study with response rate of 100 %. Among the total participants 165 of them are married which is around 97.1 % and the remainder 2.9 % mother were unmarried .Among those mothers age group 18-25 represented 34.7 % , about 50.6 % were between age group 25-35, 13.5% were between 35 and 45 years and the remainder 1.2 % were above 45 years. Based on religion the majority of them were 71.2 % are Muslim, 14.7 % were orthodox Christian 14.1 are protestant respectively. Based on ethnicity 81.2 % of them were Oromo, 6.5% were Amhara, 1.2 % were Kefa and the remainder 11.2 % were from others ethnicity . When were see educational status of the mothers 32.4 % of them were has no formal education, 30 % of them had primary education, 28.2% of them had secondary education 9.4 % of them held collage and beyond

Considering the age distribution of the children age group 6 months to 9 months represented about 43.5 %, 44.7 % of them were between 9 months and 18 months and 11. 8 % of them were between 18 and 23 months. When we see birth interval of the children 31.2 % of mother had 1 year birth space , 28.8 % of them had 2 years birth space , 14 % of them had 3 year birth space and 26.5% of them had more than 4 years birth space . The remainders are the only child for their family.48.6% of mothers had annual income of 1000-2000 birrs, 20.6 % percent of them got 2000-3000 birrs, 16.5% of them got between 3000 -5000 birrs and 18.2 % of them got more than 5000 birrs respectively. 67.6 % of mothers had radio or television and 32.4 % of them didn't have television or radio. 99.4 % of the husbands had 1 wife and 0.6 % of the woman this means 1 woman is unmarried .when we see number of children 31.1 % of mothers had 1 children, 27.1%

of mothers had 2 children, 20.6 % of mothers had 3 children and the remaining 21.2 % of the mothers had more than 4 child.

When we see birth order 33.1 % of children were the first child for their family, 27.2 %, 18.9 % and 20.7 % were 2nd , 3rd and more than 4th child for their family respectively.

1.3.2 Knowledge and associated factors

Among 170 mothers about 82 .9 % of mothers had good knowledge and the remaining 17.1 % of them mothers had poor knowledge about appropriate complementary feeding .88.4 % of mothers have ANC follow up and 10.6 % of them have no ANC follow up. Among those mothers 52.9 % of the had more than 4 times ANC follow up, 24.7 % of them 3 times 5.9 % of them had 1 and 2 times respectively.

Among 170 mothers 99.4 % of them fed breast milk and 1 mother didn't start feeding breast milk. Among those mother who started breast feeding 55.9 % of mother fed more than 8 times, 24.7 % fed 6 times per day,12.9 % of them feed 4 times, 4.9 % of mothers fed 3 times per day 24 hours prior to the interview. About 87.6 % of mothers introduced solid, semisolid or soft food at the age of 6 months and 12.3 % of them introduced solid semisolid or soft food before 6 months. When we see the frequency 43.5 % of mothers fed their child 3 times per day, 29.4 % of them 4 times and 27 % percent of mothers fed 6 times and more per day 24 hours prior to the interview. Considering the content 23.5 % of the mothers fed mixed cereal, fish, meat, egg, milk and potatoes 34.7 % of them feed mixed cereal only, 20.7 % of them fed milk only, 17.6 % of them fed potatoes, 1.8 % and 0.6 % of them fed egg and fish respectively.

61.8 % of the mothers added butter or oil on complementary feeding and 38.2 % of them didn't add butter or oil. Among mothers who didn't add butter or oil 52.9 % of them thought the child can't feed, 6.5 % of them couldn't afford and the remainder 44 % of them thought it has no benefit.97.6 % of the mothers prepared complementary feeding by themselves and 2.4 % of children prepared their food by housemaid.

There is association between feeding meat and knowledge.

There is association between educational status, having workload and ANC follow up and knowledge and associated factors in this study. Other associated factors like child age, maternal age, owned radio and family income are not associated with knowledge because of limited sample size..

1.3.3 Attitude and associated factors

Among 170 mothers 95.9 % of mothers had good attitude. Those mothers who asked about whether vegetable has harm for the child or not 19.8 % of them agreed, 20 % of them strongly agreed, 40.6 % of them disagreed and 20.6 % of them strongly disagreed. Attitude about meat 65.3 % of them agreed, 18.8 % of them strongly agreed, 5.3 % of them disagreed and 9.4 % of them strongly disagreed. When we see the mothers' attitude about starting complementary feeding after 6 months 34.1 % of them strongly agreed, 51.2 % of them agreed, 7.6 % of them disagreed and 7.1 % of them strongly disagreed. The role of husband involvement on feeding 64.1 % of them agreed, 28.8 % of them strongly agreed, 1.8 of them disagreed and 5.3 of them strongly disagreed. 51.2 % of mothers agreed conflict with husband had impact on feeding, 14.1% of them strongly agreed, 14.7% of them disagreed and 20 % of them strongly disagreed. 7.6 % of mother agreed the sex of the child could affect child feeding, 4.1 % of them strongly agreed, 51.2 % of them disagreed and 37.1 % of them strongly disagreed. Feeding meat is associated with attitude. There is association between sex of the child and educational status and attitude.

1.3.4 Practice and associated factors

Among 170 mothers 98.8 % of them had good practice about complementary feeding. 98.8 % of mothers had good practice about washing hand with soap and 1.2 % percent of mothers didn't use soap. 100% of mothers had good practice about cleaning kitchen. 93.5 %, 86.5 % of mother sterilized bottle and practiced bottle shaking respectively. 95.3 % of mothers practiced infant burping and 91.8 % of mothers boil water for formula.

There is no strong association between practice and association factors.

2 Background of the study

2.2 Knowledge and associated factors about complementary feeding

Infant and young child feeding (IYCF) practices directly affect the health, development and nutritional status of children less than two years of age and, ultimately, impact child survival.(4) Improving IYCF practices in children 0–23 months of age is therefore critical to improved nutrition, health and development. Appropriate Complimentary feeding is a way to reduce child malnutrition.(3)In Ethiopia the prevalence of appropriate complementary feeding practices among women with children 6–23 months is 9.76 %.(8) Globally, 60% of the 10.9 million child mortalities per year are directly or indirectly attributable to malnutrition.(3) Appropriate complementary feeding should include feeding children a variety of foods to ensure that nutritional requirements are met.(5) Exclusive breast feeding for the first six month, continued breast feeding through the age of 2 years.(5) Introduction of solid and semi-solid food at the age of six months and it is also important for young children to receive diverse diet which includes eating food from different food groups that satisfy children's growing micronutrient needs (WHO 2008).(5)

In Ethiopia 60% of children are introduced to solid, semisolid and soft foods at 6-8 months.(5) Another study done in Ethiopia eight out of ten 83.3% infants of 6–8 months old consumed solid, semi-solid or soft foods a day before the survey.(8) According to EDHS 2016 11 % of infant begin complementary foods before 6 months of age 21% consuming complementary foods by the age of 4-5 months.(5) The study done in Ethiopia the proportion of children who consumed solid, semi-solid or soft foods at least the minimum number of times (minimum meal frequency) during the prior day of the survey was found to be 53.72 %.(8)

Household's income status and maternal educational difference which determines the availability and quality of complementary food items for the infant and child.(8) The odds of appropriate complementary feeding practice were lesser among mothers who had no formal education than mothers who attended primary, secondary and above school.(8) The age of infants and young children was positively associated with appropriate complementary feeding practice.(8) Women who had 12–17 months and 18–23 months old children were more likely to practice appropriate complementary feeding than women who had 6–11 months old children.(8)

In Ethiopia appropriate complementary feeding practices of mothers of children aged 6–11 months was 6.6% while it was 10.6% and 12.5% among mothers of children aged 12–17 months and 18–23 months respectively.(8)

Place of residence also affect appropriate complimentary feeding.(8) Mothers from rural settlements practice lower complimentary feeding than mothers who lived in urban areas.(8) Maternal educational status, number of antenatal care visits, and receiving complementary feeding information were significant predictors of knowledge about complementary feeding.(3) Mothers who has exposure to media, and maternal and child health services have good knowledge about the appropriate complementary feeding practices.(8)

Study done in Maji Ethiopia descriptive qualitative study using semi structured in-depth interviews and focus group discussions was conducted with 98 mothers having infants and young children aged 0–24 months in rural Ethiopia.(1) One challenge for complementary feeding practices is due to the high workload of the mother.(1) Mothers revealed that heavy workload is the barrier to optimal IYCFP and they argue that because of many household chores, farm work and sometimes working as a daily labourer breast feeding and cooking food is difficult. (1) Family size and household food security status were significant predictors of maternal self-efficacy regarding complementary feeding.(3)

Study done in Ethiopia a community based, cross sectional study which includes 516 mothers 52.5% of the mothers had high complementary feeding (CF) knowledge, whereas only 47.7% and 38.9% had favorable attitude and high self-efficacy respectively.(3) Whereas Study done in Saud Arabia more than one-third of mothers 37.4% had introduced early complementary feeding. (7) Out of which 83.3% later stated that the main reason for this was because they thought that the baby was old enough to receive complementary foods.(7) In this study knowledge areas such as the type of food to be introduced first as complementary food and food rich in iron and calories scored comparatively lower.(7) The lowest scoring area was the knowledge about enriching complementary food with iodized salt, with a mean score of 2.63 and a total score of 52.6 %.(7) The least agreed upon statement was the practice of substituting breast milk with cow milk due to a perceived inadequate breast milk supply.(7) This item scored an average of 1.60, indicating a mere 32.0% agreement rate. (7)

2.2 Attitude about complementary feeding

Maternal educational level, number of antenatal care visits, and having a female child were found to be significant predictors of attitude towards complementary feeding.(3) Study done in Ethiopia among the items, vegetables related perception revealed that it is less important for the child. (1) Mothers cultural beliefs that vegetables enlarge belly and increased gas.(1) They also state that less food from animal sources, particularly meat, is given to the child as a result of the belief that a child's stomach is unable to digest food which leads to illness.(1) Mothers' belief that it is necessary to introduce one type of complementary food at a time over a week to observe potential allergic reactions 78.2% agreement rate, making it the highest ranked attitude. (7)

Some mother also believes that early introduction of complimentary feeding is important because if a child away from food for 6 months, the child will not adapt to eating after 6 months and this can cause health problems. (1) Culture and dowry demand also affect attitude of appropriate child feeding as result of culture greatly affects gender dynamics in community.(1) One mother highlighted the negative effect of family conflicts and intimate partner violence as a barrier to suboptimal IYCFP. (1)

2.3 Practice of Complementary feeding

The most commonly agreed upon practice was shaking the milk bottle with its cap in place to ensure it was well mixed.(7) This practice had an average score of 4.66, corresponding to a 93.1% agreement rate.(7) The practice of burping the infant after complementary feeding, which scored 4.60 on average and a 92.0% agreement rate. (7) Lowering the milk bottle's temperature under running tap water ranked fourth with an average score of 4.45, equivalent to an 89.0% agreement rate.(7)

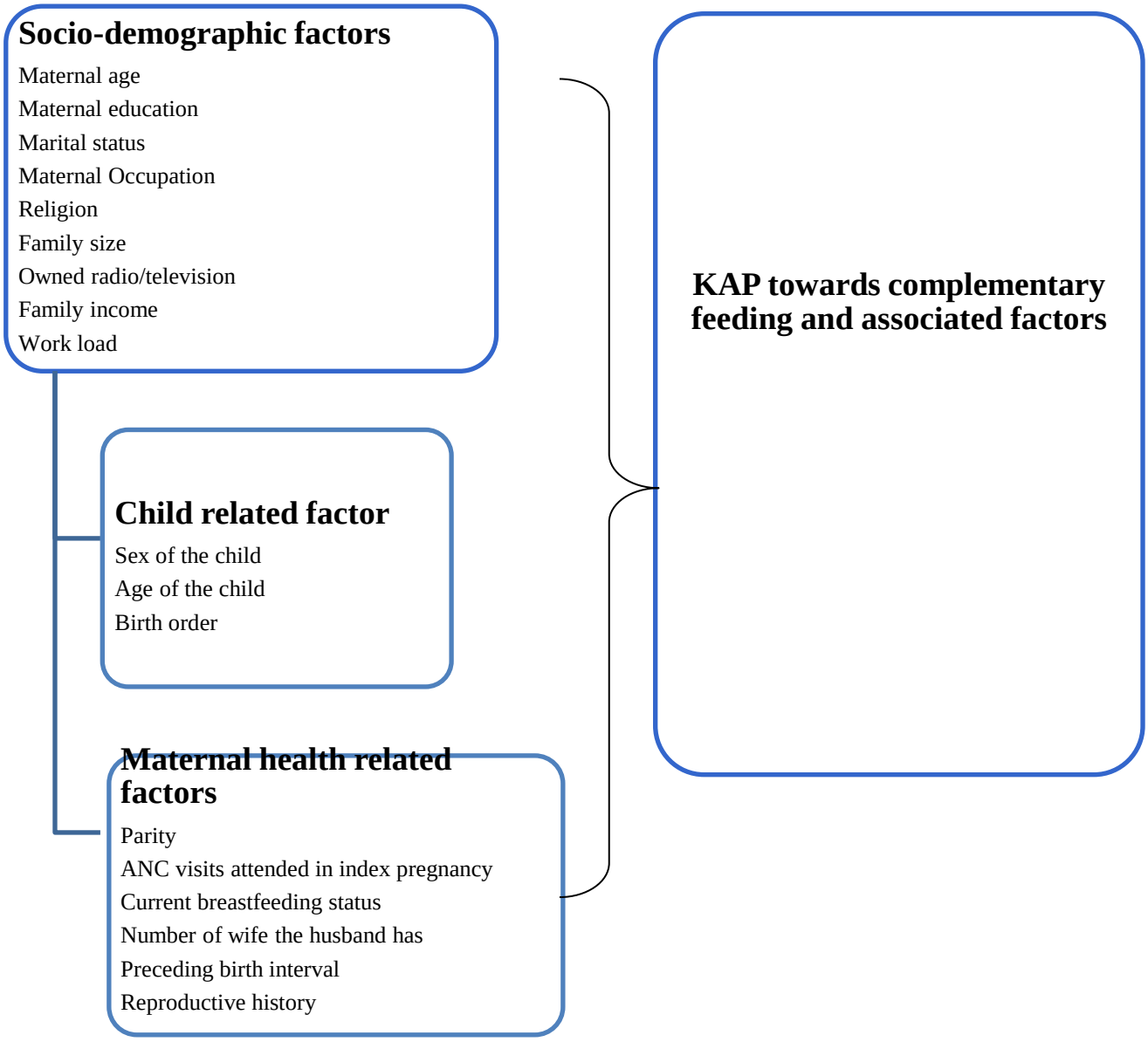
3 Statement of the problem

KAP of complementary feeding among mothers of infant is important for appropriate infant feeding. Appropriate infant feeding include exclusive breast feeding for the first 6 months then starting complementary feeding in addition to breast milk up to 2years.(4) Appropriate complementary feeding should include feeding children a variety of food to ensure that nutritional requirement is met.(5)The transition from exclusive breast feeding to family food referred to as complementary feeding.(5) Complementary feeding should be timely, which means all infant should start receiving food in addition to breast milk at the age of 6 months.(5)This is the most critical period for children, because children are most vulnerable to malnutrition during this transition.(5) Study done in Saudi Arabia underlines the need for prenatal guidance and education for parents on desirable practices concerning complementary food.(11) In study done Saud Arabia mother lacked crucial knowledge regarding the enrichment of complementary food with iodized salt and iron rich food. (11) Study done in Ethiopia revealed that below half 47.7% of the mothers had a favorable attitude towards complementary feeding.(3) There is a huge gap of Knowledge, attitude and practice about complementary feeding among mothers when to start, what to start and for how long should be continued in developing countries like Ethiopia.

4 Significance of the study

There is a gap of KAP about food diversity and frequency complementary feeding among mothers which accounts for stunting ,wasting as well as malnutrition and infectious diseases in sub-Saharan Africa especially in Jimma, Ethiopia. This research tries to fill knowledge, attitude and practice gap among mothers and care giver of the infant. This research also tries to asses this gap by using WHO infant feeding indicators and is used to show direction for JUMC, health administrator and policy by listing a key gap and helps to intervene and provides aground to establish policy and guideline.

FIG 1 Conceptual framework



5 Objectives

5.1 General objective

- To assess KAP of about complementary feeding towards mothers 6 months to 23 months in Jimma University, Southwest Ethiopia.

5.2 Specific objective

1. To assess knowledge of complementary feeding towards mothers of Children 6 months to 23 months in Jimma University, Southwest Ethiopia.
2. To assess attitude of complementary feeding towards mothers of Children 6 months to 23 months in Jimma University, Southwest Ethiopia.
3. To assess practice of complementary feeding towards mothers of Children 6 months to 23 months in Jimma University, Southwest Ethiopia.
4. To assess factors associated with Knowledge, attitude & practice of complementary feeding towards mothers of Children 6 months to 23 months in Jimma University, Southwest Ethiopia.

6 Review of literature

6.1 Complementary feeding

Complementary feeding (CF) which is starting from the age of six months with continued breastfeeding up to two years of age or beyond.(4) the appropriate age for introducing complementary foods into the child's diet was known by more than two thirds of mothers/caregivers (75.5%).(12) Complementary feeding is required in appropriate quantity, quality, and frequency to fulfill children's daily energy needs for growth and development.(3) for energy, 200, 300, and 550 kcal per day is expected to be covered by complementary foods at 6–8, 9–11, and 12–23 months, respectively.(10) In addition, the complementary foods must provide relatively large proportions of micronutrients such as iron, zinc, phosphorus, magnesium, calcium, and vitamin B6.(11) In several parts of the developing world, complementary feeding continues as a challenge to good nutrition in children.(10) the target age range for complementary feeding is between the age of 6 and 23 months (with continued breastfeeding), where most infants reach a general and neurological stage of development (chewing, swallowing, digestion, and excretion) that enables them to be fed other foods rather than breast milk.(10) During these formative years, poor nutrition has immediate consequences of increased morbidity and mortality and delayed development of the brain and other nervous systems.(10)

In Ethiopia, only 4.2% of breastfed children of 6–23 months of age have a minimum acceptable diet.(10) poor feeding practices are characterized by poor timing of complementary foods introduction (too early or too late), infrequent feeding, and poor feeding methods, hygiene, and child-care practices.(10) Added to these is the poor dietary quality of the foods served, characterized as too little variety, inappropriate consistency (food is too thin or too thick), too few essential vitamins and minerals, especially vitamin A, iron, zinc, and calcium, too few essential fatty acids, and too few calories.(10) Among non-breastfed infants complementary feeding is a way to reduce child malnutrition.(3) Globally, 60% of the 10.9 million child mortalities per year are directly or indirectly attributable to malnutrition.(3) Study done in Ethiopia a community based, cross sectional study was conducted using multistage sampling techniques followed by systematic random sampling techniques.(3) Overall, 516 mothers were interviewed 52.5% of the mothers had high complementary feeding (CF) knowledge, whereas only 47.7% and 38.9% had favorable attitude and high self-efficacy, respectively.(3)

In burkinafaso based on mothers/caregivers' report on complementary foods consumed by 6-59 months children in the previous 24h before the interview, cereals were the most reported consumed food group 89.8% followed by meat and fish products (28.6%).(12) About three fourth of mothers/caregivers (75.5%) reported the correct age for complementary feeding start at 6 months.(12) In contrast according to EDHS 2016 more than one-third of mothers 37.4% had introduced early complementary feeding, out of which 83.3% later stated that the main reason for this was because they thought that the baby was old enough to receive complementary foods.(5) Sub optimal complementary feeding practices of infants and young children persist due to different factors. Study done in benishanigul Ethiopia out of 486 study participants, 456(93.8%) of mothers had good knowledge, and 380 (78.2%) mothers had good practice of IYCF practice recommendations. (6) 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 significant .(6)

6.2 Knowledge of complementary feeding and associated factors

A quantitative, cross sectional study was done in Saud Arabia evaluated the knowledge, attitude, and practice (KAP) regarding complementary feeding (weaning) among mothers with six month old children. (11) A total of 200 respondents were included in the analysis. (11)The evaluation was divided into three KAP domains.(11) It was discovered that mothers demonstrated concerns and a lack of knowledge about enriching complementary food with iodized salt (Knowledge: M = 2.63 out of 5, SD =1.454, Score = 52.6%).(11) Another study was done in Saudi Arabia the highest scoring knowledge area was the initiation of complementary feeding at six months and above, with an average score of 4.08 and a corresponding score of 81.5 %.(7) Next was the understanding of the frequency of complementary feeding from 1 to 3 times a day.(7) Mothers' decisions to initiate complementary feeding were largely driven by concerns about the sufficiency of their milk production.(11) Mother's knowledge surrounding complementary feeding shows varied results. (11)This knowledge area scored an average of 3.89, which equates to a 77.7% score.(7)The third-highest knowledge area, with a score of 77.3% (3.87 mean), was personal experience guiding the practice of complementary feeding.(7) In contrast, knowledge areas such as the type of food to be introduced first as complementary food and food rich in iron and calories scored comparatively lower.(7)The knowledge about the type of food to introduce first had a mean score of 3.31 and a total score of 66.2 %.(7) Knowledge of calorie rich foods had a mean score of 3.11 and a total

score of 62.2%, and understanding of iron rich foods scored a mean of 2.8 and a total score of 56%.(7) In burkinafaso only 29.7% of children aged 6-59 months consumed meat and fish products the day preceding the interview. (12) The lowest scoring area was the knowledge about enriching complementary food with iodized salt, with a mean score of 2.63 and a total score of 52.6 %.(7) The overall average knowledge score across all the areas was 23.67 out of a possible 35, yielding a 67.6% total score, indicating a moderate overall knowledge level about complementary feeding among the respondents.(7)

6.3 Attitude toward complementary feeding and associated factors

In Saudi Arabia mothers belief that it is necessary to introduce one type of complementary food at a time over a week to observe potential allergic reactions.(7)Study done in benishanigulgumuz Ethiopia 432(88.9%) had a positive attitude about complimentary feeding.(6) Mothers' attitude towards complementary food and breastfeeding are preferable for babies after six months due to their improved outcomes had a mean score of 3.68, translating to a 73.5% agreement rate.(7) The belief that providing complementary food enhances the baby's health and strength, with an average score of 3.66 and a 73.2% agreement rate.(7) Preferences for giving the baby vegetables and fruits or juices as complementary food scored an average of 3.63 and a 72.5% agreement rate.(7)

Study done in Ethiopia among the items, vegetables related perception revealed that it is less important for the child.(1) Mothers beliefs that vegetables enlarge belly and increased gas.(1) They also State that less food from animal sources, particularly meat, is given to the child as a result of the belief that a child's stomach is unable to digest food which leads to illness.(1)Participants also acknowledged the role of family encouragement in giving the baby complementary food, scoring 3.54 on average, or a 70.8% agreement rate.(7)Affording to buy complementary food items, thereby ensuring they do not compromise their health, garnered a score of 3.39, equating to a 67.7% agreement rate.(7) Study done in Ethiopia maternal attitude is the most important psychometric variable that predicts optimum complementary feeding.(3) It also revealed that below half (47.7%) of the mothers had a favorable attitude towards complementary feeding.(3) Maternal attitude also associated with child sex.(3)When family size increased within one unit, self-efficacy decreased by a factor of 0.28.(3)This is because as the number of families in resource limited setting increases, it imposes difficulties to maintain the recommended optimum complementary feeding.(3)This is due to the fact that the unavailability of different food items

may hinder the mothers' ability to maintain the desired frequency and consistency of the recommended optimum complementary feeding.(3)

Study done in Maji Ethiopia descriptive qualitative study using semi structured in-depth interviews and focus group discussions was conducted with 98 mothers having infants and young children aged 0–24 months in rural Ethiopia.(1)

Mothers revealed that heavy workload is the barrier to optimal IYCFP and they argue that because of many household chores, farm work and sometimes working as a daily laborer breast feeding and cooking food is difficult.(1) The mothers agreed that excessive workload contributed to suboptimal IYCFP.(1) One challenge for complementary feeding practices is due to the high workload of the mother.(1)

6.4 Practice of complementary feeding and associated factors

In Saudi Arabia mothers understood complementary feeding practices well (Practice: M = 49.68 out of 60, SD = 8.8, Score = 82.8%).(11) In burikinafaso complementary feeding practice was inadequate with most of 6-59 months old children having consumed only cereal-based foods the day before the survey.(12) Less than 30% of them consumed foods from other food groups such as meat and fish, legumes and nuts, dairy, eggs, fruits and vegetable.(12)

The results concerning the practice of complementary feeding and weaning showcased a high degree of conscientiousness among respondents.**(7)** the most commonly agreed upon practice was shaking the milk bottle with its cap in place to ensure it was well mixed. **(7)** This was closely followed by the practice of burping the infant after complementary feeding, which scored 4.60 on average and a 92.0% agreement rate. **(7)** Lowering the milk bottle's temperature under running tap water ranked fourth with an average score of 4.45, equivalent to an 89.0% agreement rate. **(7)** Boiling the water used for formula preparation was also common, with an average score of 4.36 and an 87.1% agreement rate. **(7)**

Preparing the formula according to the instructions on the formula label, preparing the formula with water at a temperature of 70◦C, and adding the formula powder in the right quantity were practices scoring an average of 4.15, 4.27, and 4.22, respectively.(7)These practices had agreement rates between 83.0% and 85.3%. (7)Washing hands with soap and water before preparing the formula scored an average of 4.06 and an 81.2% agreement rate.(7) Sterilizing the milk bottle by placing it in boiling water received a mean score of 3.90, translating to a 77.9% agreement rate.(7) Sterilizing the milk bottle before use and cleaning the kitchen surfaces with soap before preparing

the formula was less frequently practiced, scoring 3.27 and 3.13 on average, respectively, with corresponding agreement rates of 65.4% and 62.6 %.(7) The total average score for complementary feeding practices was 49.68 out of a possible 60, which equals an overall practice score of 82.8 %.(7) This reflects a high level of adherence to recommended practices among the Respondents.(7) The least agreed upon statement was the practice of substituting breast milk with cow milk due to a perceived inadequate breast milk supply.(7) This item scored an average of 1.60, indicating a mere 32.0% agreement rate. (7) Overall, the total average score for attitudes towards complementary feeding was 23.4 out of a possible 35, yielding a score of 66.9%, reflecting a generally positive attitude among the respondents towards complementary feeding.(7)

7 Research Method

7.1 Study period and population

7.1.2 Study period

The study is conducted in Jimma University, JUMC which is located in Jimma town located 340 kilometer from Addis Ababa.

The study conducted from January 2025 G.C to march 2026G.C.

7.1.3 Study Population

All mothers of children 6 months to 23 months admitted to pediatric ward and kept patient at emergency OPD.

7.2 Study unit

Each mother of children 6 months to 23 months

7.3 Inclusion

Mothers of children 6 months to 23 months

7.4 Exclusion

Those mothers were willing to participate, mothers of infant whom started early complementary feeding, mothers who were seriously ill or unable to communicate and mothers whose child is at PICU.

7.5 Study design

Used institutional based cross sectional study has taken place as face to face interview by trained interviewer that is designed and modified to be used to assess Knowledge, attitude and practice of about complimentary feeding among mothers of children 6 months to 23 months

7.6 Sample size

This is done based on experience the p value 52 % using the fact that the sample proportion (p) has the confidence interval given 95 % ,margin of error 5% the sample size(n) can be calculated using the formula Z1-α 1.96

n= $((Z1 - \alpha)2/\delta 2) \times P (1-P) = (1.96(1.96)/ (5\times5) \times (52 \times48) = 383$

7.7 Sampling technique

Convenient sampling technique is used from among mothers' children 6 months to 23 months admitted to pediatrics ward and kept at EOPD.

7.8 Data collection measurement

7.9.1 Dependent variable

KAP about complimentary feeding and associated factors

7.9.2 Independent variable

7.10 Socio-demographic factors

Maternal age

Maternal education

Marital status

Maternal Occupation

Religion

Family size

Owned radio/television

Family income

Work load

Place of residence

7.11 Maternal health service and related factors

Parity

ANC visits attended in index pregnancy

Place of delivery

Current breastfeeding status

Number of wife the husband has

Reproductive history

Number of children

Preceding birth interval

7.12 Child related factors

Sex of the child

Age of the child

Birth order

7.13 Data Collection and Measurements

The data is collected by face to face interview by trained interview

The questioner is prepared in Amharic then translated to English. It contains 4 parts about breast feeding and complementary feeding Socio-demographic characteristic, Knowledge, practice and attitude item.

7.14 Data quality control

The questioner is prepared in Amharic then translated to again to English. The question is took place with face to face interview by principal investigator and trained interviewer and monitored daily base.

7.15 Data analysis

The data collected is entered into Epi Data 4.6, exported to SPSS version 27.1 and cleaned and analyzed. Descriptive statistics is utilized to summarize the information.The scores for knowledge, attitude and practice are determined. The percentage of respondents who fall into each category of knowledge, attitude and practice is graded accordingly. Multiple logistic regression is used to evaluate the relationship between knowledge, attitude, practice and independent variables.

8 Operational definition

8.1 Knowledge score

Good knowledge score: - Score above the mean (Those mothers that answered more than or equal questions)

Poor knowledge score: - Score below the mean (Those mothers that answered less than 8 questions)

8.2 Attitude score:

Scores were classified into

Good ≥ 50% (Those mothers' who answered more than or equal to 3 questions)

Poor ≤ 50% (Those mothers who answered less than 3 questions)

8.3 Practice score: -

Scores were classified into

Good ≥ 50% (Those mothers' who answered more than 3 questions)

Poor ≤ 50%(Those mothers' who answered less than 3 questions)

8.4 Introduction of solid, semi-solid or soft foods 6 months:

The proportion of infants 6 months of age who consumed solid, semi-solid or soft foods during the previous day.

8.5 Minimum dietary diversity 6–23 months:

The proportion of children 6–23 months of age who consumed foods and beverages from at least five out of eight defined food groups during the previous day.

The eight food groups are breast milk, grains, roots, tubers, and plantains; pulses (beans, peas, lentils); nuts and seeds, dairy products (milk, infant formula, yogurt, cheese); flesh foods (meat, fish, poultry, organ meats); eggs; vitamin-A rich fruits and vegetables, and other fruits and vegetables.

8.6 Minimum meal frequency 6–23 months:

The proportion of children 6–23 months of age who consumed solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) at least the minimum number of times during the previous day.

The minimum number of times is defined as two feedings of solid, semi-solid or soft foods for breastfed infants aged 6–8 months; or three feedings of solid, semi-solid or soft foods for breastfed children aged 9–23 months; or four feedings of solid, semi-solid or soft foods or milk feeds for no

breastfed children aged 6–23 months whereby at least one of the four feeds must be a solid, semisolid or soft feed.

8.7 Minimum acceptable diet 6–23 months:

The proportion of children 6–23 months of age who consumed a minimum acceptable diet during the previous day.

The minimum acceptable diet is defined as for breastfed children: receiving at least minimum dietary diversity and minimum meal frequency for their age during the previous day or for non-breastfed children: receiving at least the minimum dietary diversity and minimum meal frequency for their age during the previous day as well as at least two milk feeds.

8.8 Appropriate complementary feeding practices:

Infants and young children feeding practices that satisfies the minimum dietary diversity, minimum meal frequency and introduction of solid, semi-solid or soft foods at the recommended diversity, frequency and time of WHO.

8.9 Inappropriate complementary feeding practices:

Infants and young children feeding practices that did not satisfy one of the above three criteria of WHO.

9 Result and Discussion

9.1 Result

A total of 170 mothers who have children between age group 6 months and 23 months were involved in this study with response rate of 100 %. Among the total participants 165 of them were married which is around 97.1 % and the remainder 2.9 % mothers were unmarried.Among those mothers age group 18-25 represent 59(34.7 %), 86(50.6 %) of them were between age group 25-35, 23(13.5%) of them were between 35 and 45 years and the remainder 2(1.2 %) were above 45 years. Based on religion the majority of them were 71.2 % Muslim, 14.7 % are orthodox Christian, 14.1 % were protestant respectively.

Table 1: Ethnicity based sociodemographic

Variable Ethnicity	Frequency	Prevalence
Oromo	138	81.2 %
Amhara	11	6.5 %
Kefa	2	1.2 %
Other	19	11.2 %
Total	170	100 %

Table 2: Educational Status based Sociodemographic

Variable Educational status	Frequency	Prevalence's
No formal education	55	32.4 %
Primary education	50	28.2%
Secondary education	50	28.2%
College and above	15	9.2 %

Considering the age distribution of the children age group 6 months to 9 months represented about 43.5 %, 44.7 % of them were between 9 months and 18 months and 11.8 % of them were between 18 and 23 months.

When we see birth interval of the children 34.2 % of mother had 1 year birth space, 28.8 % of them had 2 years space , 14 % of them had 3 years birth space and 26.5% of them had more than 4 years space and the remainders were the only child for their family. 48.6% of mothers had annual income of 1000-2000 birrs, 20.6 % percent of them got 2000-3000 birrs, 16.5% of them got between 3000 -5000 birr and 18.2 % of them got above 5000 birrs respectively. 67.6 % of mothers had radio or television and 32.4 % of them didn't have television or radio. 9.4 % of the husbands had 1 wife and 0.6 % of the woman this means 1 woman is unmarried. 31.1 % of mothers had 1 children, 27.1% of mothers had 2 children, 20.6 % of mothers had 3 children and the remaining 21.2 % of the mothers had more than 4 children. When we see birth order 33.1 % of children were the 1st child for their family, 27.2 % ,18.9 % and 20.7 % were 2nd, 3rd and more than 4th child for their family respectively

Table 3: Prevalence of KAP

Variable	Frequency	Prevalence's %
Knowledge		
Good	**141**	**82.9%**
Poor	**29**	**17. 1%**
Total	**170**	**100%**
Attitude	**170**	**100 %**
Good	**163**	**95.9 %**
Poor	**7**	**4.1 %**
Total	**170**	**100%**
Practice	**170**	**100 %**
Good	**168**	**98.8 %**
Poor	**2**	**1.2 %**
Total	**170**	**100%**

9.1.2 Knowledge and associated factors

Among 170 mothers About 82 .9 % of mothers had good knowledge and the remaining 17.1 % of the remaining mothers had poor knowledge about appropriate complimentary feeding .88.4 % of mothers have ANC follow up and 10.6 % of them have no ANC follow up . Among this mothers 52.9 % of them had more than 4 times ANC follow up, 24.7 % of them 3 times, those mothers having 1 and 2 times ANC follow up represent each 5.8 % respectively. Among 170 mothers 99.4 % of them fed breast milk and 1 mother did not start feeding breast milk. Among those mothers who started breast feeding 55.9 % of the mother fed 8 times and above, 24.7 % fed 6 times per day, 12.9 % of them feed 4 times, 4.9 % of mothers fed 3 times per day 24 hours prior to the interview. About 87.6 % of mothers introduced solid, semisolid or soft food at the age of 6 months and 12. 3 % of them introduced solid semisolid or soft food before 6 months. When we see the frequency 43. 5 % of mothers fed their child 3 times per day, 29.4 % of them 4 times and 27 % percent of mothers fed 6 times and more per day. Considering the content 23 .5 % of the mothers fed mixed cereal, fish, meat, egg, milk and potatoes, 34. 7 % of them fed mixed cereal only, 20.7 % of them fed milk only, 17 .6 % of them fed potatoes, 1.8 % and 0.6 % of them fed egg and fish respectively. 61.8 % of the mother added butter or oil on complementary feeding and 38.2 % of them didn't add butter or oil. Among mothers who Didn't add butter or oil 52.9 % of them thought the child couldn't feed,6.5 % of them couldn't afford and the remainder 44 % of them thought it has no benefit. 97.6 % of the mothers prepared complementary feeding by themselves and 2.4 % of the food prepared by housemaid.

Table 4: Breast feeding frequency between the age 6 months to 23 months

Breastfeeding Frequency per Day	Frequency	Percentage
3 times	8	4.9%
4 times	22	12.9%
6 times	42	24.7%
More than 8 times	95	55.9%

Table 5: Complementary feeding frequency between the age of 6 months to 23 months

Variable	**Frequency**	**Prevalence's**
3-4 times	**74**	**43.5 %**
4-6 times	**50**	**29.4 %**
8 times	**46**	**27 %**
Total	**170**	**100 %**

Table 6: Multiple logistic regression of knowledge and associated factors

Independent variable	Knowledge				
	SE	**OR**	sig	95% C I	
				LB	UB
Breast feeding frequency	**0.191**	**0.942**	0.753	0.647	1.369
Age of the mother	**1.91**	**0.942**	0.753	0.647	1.369
18-25	**1.467**	**2.709**	0.497	0.153	48.012
25-35	**1.471**	**5.601**	0.241	0.314	100.019
35-45	**1.77**	**19.796**	0.93	0.609	643.
Above 45					
Breast feeding frequencies	**.191**	**.852**	.400	.586	1.238
Child age in months	**0.801**	**0.425**	0 .286		2.044
6-9	**0.814**	**0.425**	0.574	0.128	3.116
9-18					
18-23					
Breast feeding frequencies	**0.203**	**0.860**	0.456	0.578	1.279
	0.514	**11.726**	<0.01	4.011	34.282
ANC follow up					
Breast feeding frequencies	**0.239**	**0.779**	0.295	0.488	1.243

Frequency of ANC follow up	**0.889**	**0.889**	0.215	0.058	1.896
1 times	**1.130**	**0.752**	0.801	0.082	6.890
2 times	**0.559**	**0.752**	0.801	0.082	6.890
3 times					
4 and above					
Breast feeding frequencies	**0.189**	**0.956**	0.811	0.660	1.384
Educational level					
No formal education	**1.156**	**5.484E-9**	0.001	5.691E-10	5.284E-8
Primary education	**1.200**	**5.484E-9**	5.484E-9	5.691E-10	1.921E-7
Secondary education	**1.218**	**2.065E-8**	0.001	1.898E-9	2.247E-7
Diploma	**7828.166**	**1.048**	1.000	0.000	
Degree and above	**0.000**	**9.822E-9**		9.822E-9	9.822E-9
Breast feeding frequencies	**0.184**	**877**	0.477	0. 612	1.258
Family income					
1000-2000	**0.607**	**0.579**	0.368	0.176	1.903
2000-4000	**0.701**	**0.738**	0.664	0.187	2.914
3000and above	**0.814**	**1.286**	0.758	0.261	2.914
Breast feeding frequencies	**0.190**	**0.896**	0.564	0.618	1.300
Birth order					
1st	**0.661**	**0.750**	0.663	0.206	2.738

2nd	**0.698**	**1.835**	0.384	0.468	7.203
3rd	**0.837**	**0.837**	0.274	0.468	7.203
4th	**0.858**	**1.173**	0.852	0.218	6.307
Breast feeding frequencies	**0.241**	**0.724**	0.181	0.451	1.162
Birth interval	.				
1 years	**0.450**	**1.338**	0.737	0.114	21.583
2 years space	**1.249**	**2.302**	0.504	0.199	26.601
3 years space	**1.310**	**1.195**	0.892	0.092	15.573
4 years space	**1.344**	**1.470**	0.774	0.106	20.475
5 years and above	**1.570**	**4.510**	0.337	0.208	97.858
Breast feeding frequencies	**0.187**	**0.886**	0.518	0.614	1.278
Having Work load	**1.146**	**4.945E-7**	0.001	5.233E-8	5.233E-8
Breast feeding frequencies	**0.187**	**0.896**	0.558	0.621	1.293
Owned radio and television	**0.432**	**1.716**	0.211	0.737	3.998
Breast feeding frequencies	**0.210**	**0.884**	0.559	0.586	1.335
Broadcasting feeding	**0.564**	**1.332E-7**	0.000	3.635E-8	4.910E-7
Factors associated with knowledge of content of complementary feeding					
	0.094	**1.387**		1.160	1.659

Content of complementary feeding					
Child age					
6- 9 months	**0.688**	**0.688**	0.657	0.133	3.576
9-18 months	**0.850**	**0.669**	0.657	0.126	3.536
18-23 months					
Content of complementary feeding	**0.091**	**1.372**	0.001	1.148	1.641
Age of the mother					
18-25					
25-35	**1.462**	**1.292**	0.861	0.074	22.673
35-45	**1.461**	**2.696**	0.497	0.154	47.229
Above 45	**1.764**	**2.696**	0.222	0.271	273.084
	0				
Content of complementary Feeding	**0.091**	**1.390**	0.000	1.164	1.661
Family income					
10000-2000					
2000-3000	**0.635**	**0.585**	0.399	0.169	2.032
3000-5000	**0.732**	**0.764**	0.713	0.182	3.209
Above 5000	**0.844**	**1.446**	0.662	0.277	7.559
	0				
Content of complementary feeding	0.099	1.464	0.000	1.205	1.778
Family size	**3721.219**	**29510311.977**	0.996	0.000	
1					
2	**0.000**			1.776E-9	1.776E-9

	1.250	**2.358**	0.493	0.203	
3					
4	**1.225**	**3.243**	0.337	0.294	35.818
5					
Above 5	**1.303**	**5.747**	0.180	0.447	73.891
	1.286	**3.683**	0.311	0.296	45.807
Content of complementary feeding	**0.118**	**1.422**	0.003	1.129	1.790
Birth interval					
1st	**1.384**	**1.058**	0.967	0.070	15.935
2nd	**1.279**	**1.457**	0.768	1.457	17.886
3rd	**1.346**	**1.058**	0.995	.003	13.341
4th	**1.432**	**0.466**	0.594	0.028	7.706
5th	**1.601**	**4.186**	0.371	0.182	96.511

Above 5th	**0.000**	**183280738.751**	183280738.751	183280738.751	183280738.751
Content of complementary feeding	**0.094**	**1.423**	0.001	1.184	1.184
Birth order					
1st	**0.700**	**0.855**	0.822	0.217	3.371
2nd	**0.701**	**2.015**	0.341	0.477	8.514
3rd	**0.878**	**3.745**	0.133	0.670	20.924
4th	**0.908**	**2.015**	0.496	11.001	11.001
Above 4	**0**				
Content complementary feeding	**0.097**	**1.408**		1.163	1.704
Educational status					
No formal education	**9644.729**	**1.549E-9**	0.998	0.000	
Primary education	**9644.729**	**1.549E-9**	0.998	0.0000	
Secondary education	**9644.729**	**4.463E-9**	0.998	0.00000	
Diploma	**0000**	**0.739**		0.739	0.739
Degree and above	**9644.729**	**1.561E-9**	0.998	000000	
Content of complementary feeding	**0.461**	**1.393**	0.982		
Owned radio or television					

	0.91		0.193	1.64	1.664
Content of complemented feeding	**0.104**	**1.394**	0.001	1.137	1.708
TV or radio broadcasting feeding	**0.590**	**1.162E-7**	0.000	3.657E-8	3.691E-7
Factors associated with feeding vegetable knowledge					
Feeding vegetable	**0.536**	**0.114**	0.000	0.040	0.325
Child age					
6- 9 months	**0.858**	**0.834**	0.833	0.155	0.325
9- 18 months	**0.863**	**0.834**	0.680	0.155	4.486
18- 23 months	**0**				
Feeding vegetable	**0.542**	**0.148**	0.000	0.051	0.427
Ac follow up	**0.585**	**7.992**	0.000	2.539	25.162
Feeding vegetable	**0.530**	**0.135**	0.779	0.048	0.382
Age of the mother					
18-25	**1.454**	**1.505**	0.779	0.087	26.030
25-35	**1.458**	**2.654**	0.503	0.152	46.223
35-45	**0.503**	**6.738**	0.503	0.152	217.237
Above 45					
Feeding vegetable	**0.528**	**0.119**	0.001	0.042	0.336
Family income in birr					

1000-2000	**0.654**	**0.851**	0.805	0.236	3.066
2000-3000	**0.751**	**0.654**	0.805	0.233	4.415
3000-5000	**0.751**	**1.013**	0.986	0.271	8.045
Above 5000	**0**				
Feeding vegetable	**0.543**	**0.113**	0.000	0.0390	0.329
Family size					
1	**3801.733**	**4433045.235**	0.997	0.000	
2	**0.000**	**1.092E-9**		1.092E-9	1.092E-9
3	**1.197**	**0.528**	0.594	0.051	5.513
4	**5.513**	**0.550**	0.616	0.053	5.685
5 and above	**1.243**	**0.525**	0.604	0.046	6.001
Birth interval					
1 year spaces	**1.485**	**0. 1.140**	0.930	0.062	20.936
2 year spaces	**1.375**	**1.519**	0.761	0.103	22.495
3 year spaces	**1.454**	**0.931**	0.931	0.051	15.243
4 year spaces	**1.500**	**0.873**	0.928	0.046	16.507
5 year spaces	**1.681**	**5.371**	0.317	0.199	
Birth order					
1st	**0.711**	**1.099**	0.895	0.273	4.424

2nd	**0.744**	**1.842**	0.412	0.428	7.923
3rd	**0.882**	**0.359**	2.244	0.398	12.637
4th	**0.063**	**1.065923**	0.945	0.174	6.509
>5th	**0**				
	0.532	**0.127**	0.000	0.045	0.359
Feeding vegetable					

Feeding vegetable	**0.581**	**0.096**	**0.001**	**0.031**	**0.300**
Job of the mother					
Housewife	**3626.903**	**1.368E-70**	**0.997**	**0.000**	
Farmer	**3626.903**	**5.064E-8**	**0.996**	**0.000**	
Merchant	**3626.903**	**8.596E-8**	**0.996**	**0.000**	
Doctor	**4369.583**	**1.217**	**1.000**	**0.000**	
Accountant	**0.000**	**2.177E-17**		**2.177E-17**	**2.177E-17**
Others	**0**				

Feeding meat	**0.727**	**0.071**	**0.176**	**0.515**	**1.028**
Child age					
6-9	**0.300**	**0.275**	**1.105**	**0.034**	
9-18	**0.572**	**0.619**	**1.121**	**0.064**	**5.147**
18-23			**0**		
Feeding meat	**0.720**	**0.71**	**0.182**	**0.504**	**1.028**
Age of the mother					
18-25	**4.197**	**p.331**	**1.475**	**0.233**	**75.602**
25-35	**6.520**	**0.201**	**1.466**	**0.368**	**115.419**
35-45	**16.860**	**0.109**	**1.764**	**0.531**	**534.943**
>45			**0**		
Feeding meat	**0.613**	**0.20**	**0210**	**0.406**	**0.925**
ANC follow up	**13.395**	**0.001**	**0.687**	**3.487**	**51.463**
Feeding meat	**0.710**	**0.062**	**0.183**	**0.496**	**1.017**
Family size					
1	**38387163.417**	**0.997**	**4314.713**	**0.000**	
2	**3.559E-9**		**0.000**	**3.559E-9**	**3.559E-9**
3	**1.295**	**0.841**	**1.288**	**0.104**	**16.173**
4	**2.741**	**0.430**	**1.277**	**0.224**	**33.513**
5	**2.540**	**0.487**	**1.341**	**0.487**	**35.149**
6	**1.608**	**0.718**	**1.313**	**0.123**	**21.063**
Feeding meat	**0.704**	**0.055**	**0.183**	**0.492**	**1.008**
Birth order					
1st	**1.275**	**0.744**	**0.744**	**0.297**	**5.480**
2nd	**3.818**	**0.092**	**1.340**	**0.805**	**18.107**

3rd	4.141	0.146	0.977	0.610	28.114
4th	4.920	0.193	1.225	0.446	54.255
5th and above			0		
Feeding meat	0.544	0.016	0.253	0.332	0.332
Birth interval					
1 years space	4.467	0.386	1.725	0.152	131.293
2 years space	13.376	0.127	2.593	0.477	374.772
3 years space	4.409	0.385	1.710	0.155	125.772
4 years space	1.787	0.737	1.728	0.060	52.853
More than 5 years space	16.649	0.143	1.919	0.387	716.211
Feeding meat	0.176	0.733	0.077	0.519	1.034
Family Income					
1000-2000	0.652	0.760	0.674	2.727	6.668
2000-3000	0.844	1.255	0.773	0.244	6.668
3000-5000	.0944	1.639	0.601	0.258	10.424
Above 5000	0				
Feeding meat	0.189	0.655	0.025	0.452	0.949
Educational status					
No formal education	1.248	6.085E-9	0.001	5.268E-10	7.029E-8
Primary education	1.356	3.897E-8	0.001	2.734E-9	7.029E-8
Secondary education	1.416	5.505E-8	0.001	3.428E-9	8.840E-7
Diploma	5530.509	1.000	1.000	0.000	

Degree and above	**0000**	**8.108E-9**		**8.108E-9**	**8.108E-9**
Feeding meat	**0.189**	**0.720**	**0.025**	**0.452**	**1.044**
Job of the mother	**1.076**	**3.615**	**0.232**	**0.439**	**29.782**
Housewife	**1.076**	**1.426**	**3.615**	**0.439**	**29.782**
Farmer	**1.168**	**2.306**	**0.475**	**0.2331**	**22.772**
Merchant	**1.333**	**1.625**	**2.306**	**0.119**	**22.158**
Doctor	**3230.691**	**32555025.796**	**0.996**	**0.000**	**0.119**
Accountant	**0.000**		**1.931E-9**	**1.931E-9**	**1.931E-9**
Others	**0**				
Content of complementary feeding	**0.090**	**1.361**	**0.001**	**1.140**	**1.624**
Having work load	**0.436**	**3.166E-7**	**0.000**	**1.348E-7**	**7.436E-7**

9.1.3 Attitude and associated factors

Among 170 mothers 95.9 % of mothers had good attitude. These mothers asked about whether vegetable has harm for the child 19.8 % of them agreed, 20 % of them strongly agree, 40.6 % of them disagreed and 20.6 % of them strongly disagreed. Attitude about meat 65.3% agreed, 18.8% strongly agreed, 5. 3 % disagreed and 9.4 % strongly disagreed. When we see mothers attitude about starting complementary feeding after 6 months 34.1 % of them strongly agreed, 51.2 % agreed, 7.6 disagreed and 7.1 % strongly disagreed. 7.6 % of mother agreed the sex of the child affect child feeding 4.1 % of them strongly agreed , 51.2 % disagreed and 37.1 % strongly disagreed.

Table 7: Starting complementary feeding at 6months

Variable	Frequency	Prevalence
Starting complementary feeding at 6 months	**170**	**100%**
Agreed	**87**	**51.2 %**
Strongly agreed	**58**	**34.1 %**
Disagreed	**13**	**7.6 %**
Strongly disagreed	**12**	**7.1 %**

Table 8: Attitude towards husband involvement and Conflict with husband

Variable	Frequency	Prevalence
Husband involvement		
Agreed	**109**	**64.1 %**
Strongly agreed	**49**	**28.8 %**
Disagreed	**3**	**1.8 %**
Strongly disagreed	**7**	**5.3 %**
Total	**170**	**100 %**
Conflict with husband affecting feeding		
Agreed	**87**	**51.2 %**
Strongly agreed	**24**	**14.1%**
Disagreed	**25**	**14.7%**
Strongly disagreed	**34**	**20 %**
Total	**170**	**100 %**

Table 9: Multiple logistic regression of attitude and associated factors

Independent variable	Attitude				
	SE	OR	SIG	95 % CI	
				Lower bound	Upper bound
Attitude about feeding vegetable harming a child	0.389	0.289	0.001	0.1345	0.621
Educational level					
No formal education	9469.213	4.717E-8	0.999	0.0000	
Primary education	9469.213	9.649E-8	0.999	0.000	
Secondary education	9469.213	1.533E-7	0.999	0.000	
Diploma	0.063	0.939		0.939	
Degree	9469.213	9.649E-8	0.999	0000	
Attitude about Feeding meat	.372	.295	0.001	0.142	0.613
Age of the mother					
18-25	.965	2.068E-7	0.000	3.121E-8	1.371E-6
25-35	.000	5.559E-8		5.559E-8	5.559E-8
35-45	5437.184	3.522	1.000		
above 45	0				

Attitude about feeding meat importance Family income	**0.387**	**0.277**	**0.001**	**0.130**	**0.591**
1000-2000	**1.088**	**3.314**	**0.271**	**0.393**	**27.977**
2000-3000	**1.1/45**	**.877**	**.909**	**.093**	**8.271**
3000-5000	**0.000**		**621184708.329?**	**621184708.329**	**621184708.329**
above 5000	**0**				
Attitude about feeding meat importance Sex of the child	**0.331**	**0.350**	**0.002**	**0.183**	**0.670**
Male	**0.892**	**1.717E-7**	**0.000**	**2.986E-8**	**9.871E-7**
Female	**0.000**	**3.015E-7**		**3.015E-7**	**3.015E-7**
attitude about the importance of feeding meat Owned radio or TV	**0.335**	**0.350**	**0.002**	**0.181**	**0.674**
	0.842	**1.503**	**0.629**	**0.289**	**7.824**
Husband involvement Educational level	**0.388**	**0.624**	**0.224**	**0.292**	**1.334**
No formal education	**9838.526**	**2.182E-8**	0.999	**0.000**	
primary education	**9838.526**	**2.660E-8**	**0.999**	**0.000**	
secondary education	**9838.526**	**5.563E-8**	**0.999**	**0.000**	
diploma	**0.000**	**0.977**		**0.977**	**0.977**

degree and above	**9838.526**	**4.225E-9**	**0.998**	**0000**	

Conflict with husband	**0.675**	**0.204**	**0.369**	**0.309**	**1.237**
Educational level					
No formal education	**1.269**	**3.130E-8**	**0.001**	**3.551E-9**	**6.861E-7**
Primary education	**1.343**	4.936E-8	**0.001**	**3.551E-9**	**6.861E-7**
Secondary education	**1.511**	**8.846E-8**	**0.001**	**4.576E-9**	**1.710E-6**
Diploma	**8780.275**	**1.123**	**1.123**	**0.000**	
Degree and above	**0.000**	**8.503E-9**		**8.503E-9**	**8.503E-9**

9.1.4 Practice and associated factor

98.8 % of mothers had good practice about complmentary feeding. 98.8 % of mothers had good practice about washing hand with soap and 1.2 % percent of mothers didn't use soap.

Table 10: Practice and associated factors

Variable	Frequency	Prevalence
Practice		
Sterilizing bottle		
Good	**159**	**93.5 %**
Poor	**11**	**6.5%**
Total		
Bottle shaking	**170**	**100 %**
Good	**147**	**86.5 %**
Poor	**23**	**13.5 %**
Total	**170**	**100 %**
Hand washing	**170**	**100 %**
Good	**167**	**98.8 %**
Poor	**3**	**1.2 %**
Total	**170**	**100 %**

Variable	Frequency	Prevalence
boiling water	**170**	**100 %**
Good	**156**	**91.8 %**
Poor	**14**	**7.2 %**
Cleaning kitchen	**170**	**100 %**
Good	**170**	**100%**
Poor	**-**	**-**
Infant burping	**170**	**100%**
Good	**162**	**95.3 %**
Poor	**8**	**4.7 %**

Table 11: Multiple logistic regression of practice and associated factors

Independent variable	Practice				
	SE	OR	SIG	95 % CI Lower	Upper
Cleaning kitchen Educational level	11793.157	8.503E-9		3270.833	3270.833
Illiterate	11793.157	9.347E-8	0.999	0.000	
Primary education	12022.172	1.000	1.000	0.000	
Secondary education	9.347E-8	1.000	`1.0000	0.000	
Diploma	13372.184	1.000	1.000	0.000	
Degree and above	13617.565	1.000	1.000	0.000	
Cleaning kitchen Family income	0.000	7133.084		7133.084	7133.084
1000-2000	3502.208	5.250E-7	0.997	0.000	
2000-3000	3502.208	1.432E-7	0.996	0.000	
3000-5000	4705.693	0.844	1.000	0.000	
Above 5000	0				
Cleaning kitchen Owned radio	0.000	4562.336		4562.336	4562.336
	1937.397	20814905.881	0.000		
Boiling water for formula Age of the mother	.000	8.064E-7	8.064E-7	8.064E-7	
Shaking bottle	2872.349	2.651E-8	0.000		

Burping infant	**0.000**	**1.000**		**1.000**	**1.000**
Washing hand with soap	**000000**	**8.064E-7**		**8.064E-7**	**8.064E-7**

9.1.5 Discussion

Inappropriate feeding practice is the main cause of malnutrition globally especially in third world country rather than food shortage.(1) Malpractice Knowledge, attitude and practice are the main contributor of malnutrition rather than food shortage. Globally, 60% of the 10.9 million child mortalities per year are directly or indirectly attributable to malnutrition. (3)

The aim of this study is to assess KAP towards mothers of children 6 months to 23 months in JU, JUMC Pediatrics department about 170 mothers are interviewed by face to face interview among those mothers about 82. 9% had good knowledge which is less than study done in benishanigul gumuz ethiopia 93.8% of mothers had good knowledge.(6) 95.9 % of mothers have good attitude which is higher than that of Study done in benishanigul gumuz Ethiopia 88.9 % had a positive attitude about complimentary feeding.(6) 98.8 % of mothers had good practice about complementary feeding which is higher than that of study done in benishanigul gumuz 78.2% and saud arabia 82.8%.(6,12)

9.1.6 Knowledge and associated factors

About 87.6 % of mothers introduced solid, semisolid or soft food at the age of 6 months which is higher than burkinafaso which accounts 75.5% and study done in Ethiopia eight out of ten 83.3% infants of 6–8 months old consumed solid, semi-solid or soft foods a day before the survey.(8,12)

In this study 12.3 % of mother started early complementary feeding before 6 months which is higher than that of EDHS only 11 % of them began early complementary feeding and lower than Study done in Saud Arabia more than one-third of mothers 37.4% had introduced early complementary feeding.(7) Out of which 83.3% later stated that the main reason for this was because they thought that the baby was old enough to receive before 6 months.(5,7) Considering the content of complementary feeding 23 .5 % of the mothers fed mixed cereal, fish, meat, egg, milk and potatoes and 34. 7 % of them fed mixed cereal only, 20.7 % of them fed milk only, 17 .6 % of them fed potatoes,1.8 % and 0,6 % of them fed egg and fish respectively. which is less than study done in Burkinafaso 30% of them consumed foods from other food groups such as meat and fish, legumes and nuts, dairy, eggs, fruits and vegetable.(12)

When we see the frequency of complementary feeding 43.5 % of mothers fed their child 3 times per day ,29.4 % of them fed 4 times and 27 % of mothers fed 6 times and more per day.12. 3 % of the mother introduced complementary feeding before 6 months which is lower than that Study

done in Saud Arabia more than one-third of mothers 37.4%) had introduced early complementary feeding. (7)

The association between breast feeding frequencies and knowledge was insignificant(SE 0.191, OR 0.942, P value of 0.753 and 95 % confidence interval of [0.647,1.369]. when we see factors associated with knowledge of breast feeding frequencies and age of the mother is not associated with knowledge (SE 1.91, OR 0.942, P value 0.753 and 95 % CI[0.647, 1.369]). Child age was not associated breast feeding frequencies (SE 0.801, OR 0.425,p value 0 .286 and 95 % CI[,2.044]). The association between breast feeding frequencies and knowledge was significant (SE, 0.514, OR 11.726, p<0.01 and CI [4.011, 34.282]). breast feeding frequencies and ANC follow up frequencies are not associated with knowledge (SE 0.239, OR 0.779, p value 0.295, and 95 % CI [0.488,1.243] and ANC1(SE 0.889, OR.889, p value 0.215 and 95 % CI [0.058 ,1.896] ANC 2 (SE 1.130 OR 0.752, p value .801 and 95 % of CI [0.082, 6.890 and ANC 3(SE 0.559, OR 0.752, p value 0.801 and 95 % of CI [0.082,6.890])respectively.

Breast feeding (SE 0 .203, OR 0.860 , p value 0.456 and 95 % of CI [0.578,1.279] is not associated with knowledge. ANC follow up (SE 0.514 , OR 11.726 P value <0.01 and 95 % CI [4.011,34.282] is associated with knowledge . The association between educational level no formal education (SE 1.156, OR 5.484E-9, p value 0.001, and 95 % confidence interval[5.691E-10, 5.284E-8) , primary education (SE 1.200, OR 5.484E-9 p value 5.484E-9 and 95 % of confidence interval [5.691E-10, 1.921E-7], secondary education(SE 1.218, OR 2.065E-8, p value 0.0001 and 95 % of CI [0.898E-9, 2.247E-7], diploma (SE 7828.16 OR 1.048 p value 1.000 and 95 % CI [0.000,] and degree and above (SE OR .000 p value 9.822E-9 , 95% CI [9.822E-9 ,9.822E-9] mothers were sign(no formal education, primary education and secondary education) less likely to to have good knowledge of breastfeeding frequency compared to educated mothers but the result of diploma and degree is difficult to interpret due to small sample size. This indicates a strong negative association between educational level and knowledge of breast feeding frequencies it could be due to small sample size which is against study done in south west Ethiopia maternal education were significant predictors of knowledge about complementary feeding.(3)

The association between breast feeding frequencies(SE 0.184, OR 0. 877 p value 0 .477 and 95 % CI [0. 612,1.258])and family income 1000- 2000 birrs (SE 0.607 ,OR 0.579 p Value 0.368 , 95 % CI [0.176,1.903]), 2000-3000 birrs (SE 0 .701, OR 0.738, p Value 0.664 and 95 % of CI

[0.187,2 .914), 3000 - 5000 birrs (SE 0.814 OR 1.286 p value 0.758 and 95 %of CI [0.261, 2.914]) and knowledge is insignificant . The association between feeding meat and knowledge is significant (SE 0.189 , OR 0.655 P Value Of .025 ,95 % CI [0.452 0.949]) .The association between educational status no formal education (SE 1.248, OR 6.085E-9, p value 0.001 , 95 % CI [5.268E-10, 7.029E-8]), primary education(, secondary education(SE 1.416 OR 5.505E-8 P value .0001and 95 % CI [3.428E-9, 8.840E-7]) ,diploma (SE 5530.509,OR 1.000 , p Value 1.000 and 95 % of confidence interval of [.000,]) and degree and above(SE 0000 , OR 8-9.108E, p value_ and 95% CI [8.108E-9, 8.108E-9] and knowledge is significant.The association between child age and complementary feeding is insignificant which is against study done School of Public Health, College of Medicine and Health Sciences, Arab Minch University, Arba Minch, Ethiopia which the age of infants and young children was positively associated with appropriate complementary feeding practice those women who had 12–17 months and 18–23 months old children were more likely to practice appropriate complementary feeding than women who had 6–11 months old children. (8)

The association between feeding meat(SE 0.189, OR 0.720, p value 0.025 and 95 % of confidence interval [0.452,1.044]) ,job of the mother , housewife (SE 1.076 OR 3.615 p Value 0.232 and 95 % CI [0.439,29.782]),farmer(SE 1.076 ,OR 1.426, p value 3.615 95 % confidence interval [0.439,29.782]), doctor(SE1.333, OR 1.625 , p Value 2.306 and 95% CI [0.119, 22.158]]) and accountant (SE 3230.69, OR 32555025.796, p value 0.996 95 % of CI [.000, 0.119]) respectively and knowledge is insignificant. Having work load has strong association with knowledge (SE .436, OR 3.166E-7 p Value .000 95 % CI [1.348E-7, 7.436E-7] which is the same as study done in Maji Ethiopia descriptive qualitative study using semi structured in-depth interviews and focus group discussions was conducted with 98 mothers having infants and young children aged 0–24 months in rural Ethiopia.(1) One challenge for complementary feeding practices is due to the high workload of the mother.(1) Mothers revealed that heavy workload is the barrier to optimal IYCFP and they argue that because of many household chores, farm work and sometimes working as a daily laborer breast feeding and cooking food is difficult.(1)

9.1.7 Attitude and associated factors

When we see attitude of the mother whether vegetable has harm for the child 19.8 % of them agreed, 20 % of them strongly agreed, 40.6 % of them disagreed and 20.6 % of them strongly disagreed which is contrary to study done in Ethiopia among the items, vegetables related perception revealed that it is less important for the child because mothers beliefs that vegetables enlarge belly and increased gas.(1) Attitude about meat 61.1 % agreed, 18.1% strongly agreed, 6.9 % disagreed and 13.9 % strongly disagreed. The association between feeding meat and attitude is significant with (SE .389 OR .289, p value .001 and 95 % CI [0.1345, 0.621]). The association between educational level illiterate(SE 9469.213, OR 4.717E-8 Value of .999 and 95 % CI [0.0000,]), primary education(SE 9469.213 ,OR 9.649E-8 P value .999 and 95 % CI [.000,]), secondary education(SE 9469.213, OR 1.533E-7 , p value 0.999 and 95 % percent CI[.000,]) ,diploma (SE 0.063 ,OR 0.939, P value and 95% CI [0.939])and degree and above(SE 9469.213,OR 9.649E-8, P value 999 and 95 % CI [0.000,]) and attitude is insignificant . Age of mother 18- 25 yearrs SE 0.965, OR 2.068E-7 p value 0.000, 95 % CI [3.121E-8,1.371E-]), 25-35 years (SE .000 , OR 5.559E-8 p value _ 95% of CI [5.559E-8 5.559E-8]), 35- 45yrs (SE 537.184 , OR 3.5224, p value 1.000 and 95% CI [ ] is not associated with attitude about feeding meat. There is no association between feeding meat and Family income 1000-2000 birrs (SE 1.088 ,OR 3.314, p value 0.271 and 95% CI [0.393, 27.977]), 2000-3000birrs (SE 1.145,OR 0.877, p value 0.909 and 95% CI [0.093 ,8.271]) and 3000-5000 birrs (SE 0.000 ,OR 621184708.329, p alue621184708.329 and 95 % confidence interval [621184708.329,]) respectively . Sex of the child being male (SE 0.892, OR 1.717E-7 p value .000 and 95 % confidence interval [2.986E-8,9.871E-7]) is associated with attitude .The effect of female sex on attitude could not be reliably estimated. which is against study done in south west Ethiopia having a female child were found to be significant predictors of attitude towards complementary feeding. (1) The extremely small odds ratio, near-zero standard error, and collapsed confidence interval indicate perfect prediction or lack of variability among females. Therefore, the association cannot be interpreted meaningfully in this sample(SE 0.000,OR 3.015E-7P value 95 % CI [3.015E-7,3.015E-7].The association between owned radio, feeding meat and attitude is not significant (SE 0.842, OR1.503 P value 0.629, 95 % CI [.289,7.824]).The association between husband involvement(SE 0.388 , OR 0.624, P value 0.224 and 95 % confidence interval of [.292,1.334]) , educational level and no formal education (SE 9838.526 ,OR2.182E-8,p Value .999 and 95% CI [.977,977])]) primary

education(SE 9838.526 OR value 0.660E-8, p Value .999 and 955 CI [0.000]), secondary education(SE 9838.526,OR5.563E-8,p value 0.999 and 95 % of CI [.000,]) , diploma(SE .000, OR .977, p value and 95 % confidence interval [0.000,]and degree and above (SE 9838.526, OR 4.225E-9,P value 0.998 and 95% CI [0000,] and attitude is not significant Most educational levels had unstable and unreliable estimates due to data limitations, except for diploma level, which showed no significant effect on attitude (OR=0.977, p=0.977). These findings suggest that neither husband involvement nor educational level significantly predict attitude in the current model.The association between conflict with husband (SE 0.675,OR .204, P value 0.369 and 95% CI [.309,1.237]), educational level no formal education (SE 1.269,OR 3.130E-8, P Value 0.001, 95 5 CI [3.551E-9,6.861E-7]),primary education(SE 1.343 , OR 4.936E-8, p Value .001 and 95 % CI [3.551E-9,6.861E-7]), secondary education(SE 1.511 OR 8.846E-8 p value .001 and 95 % CI [4.576E-9,1.710E-6]) has negative association with attitude ; diploma(SE OR 8780.275 OR 1.123, P value 1.123 and 95 % CI[.000.]) and degree and above(SE.000,OR 8.503E-9, P value _ 95 % CI [8.503E-9,8.503E-9]) and attitude is insignificant. There is no association between ethnicity feeding vegetable and attitude (SE 0.416, OR 0.805, p value 0.603 and 95 % CI [0.357, 1.820]). Which is in contrary to Study done in Ethiopia among the items, vegetables related perception revealed that it is less important for the child. (1) Mothers cultural beliefs that vegetables enlarge belly and increased gas. (1)

9.1.8 Practice and associated factor

Mothers practice about hand washing with soap and cleaning kitchen 98.8 % and 100 % respectively. 93.5 % of mother sterilized bottle which is better than Saud Arabia sterilizing the milk bottle before use and cleaning the kitchen surfaces with soap before preparing the formula was less frequently practiced with corresponding agreement rates of 65.4% and 62.6 %.(7)The association between cleaning kitchen (SE 11793.157, OR 8.503E-9, P-, 95 % confidence intrerval of [3270.833, 3270.833], educational level no formal education (SE 11793.157, OR 9.347E-8, pvalue .999 and 95 % CI [0.000,]) primary education (SE 12022.172, OR 1.000, p value 1.000, 95 % of CI [.000,]), secondary education(SE 9.347E-8 ,OR1.000, p value `1.0000 and 95 % confidence interval of [.000,]) ,diploma(SE 13372.184, OR 1.000, p value 1.000and 95 % 95 % [.000,]) and degree and above(SE 13617.565, OR 1.000, p value 1.000 and 95 % CI [0.000,]) and practice is insignificant.The association between cleaning kitchen (SE.000 ,OR 7133.084 ,P value _, 95 % CI of [7133.084,7133.084]), family income 1000- 2000 birrs (SE 3502.208, OR

5.250E-7, p value.997 and 95 % of confidence interval [.000,), 2000- 3000birrs (SE 3502.208 , OR 1.432E-7, p value .996 and 95 % CI [0.000,]), and 3000- 5000 biirrs(SE 4705.693,OR .844, p value 1.000 and 95 % of CI[0.000,]) respectively and practice is insignificant . the association between cleaning kitchen and practice is insignificant (SE 4705.693,OR .844, p value1.000 and 95 % CI [0.000 4562.336]).

10 Conclusion

On this study 82 .9 % of mothers have good knowledge about breast feeding frequency ,complementary feeding and frequency ,complementary feeding content, adding butter while preparing complementary feeding About 87.6 % of them introduced solid, semisolid or soft food at the age of 6 months which is higher than that of EDHS about 60 % of them introduce solid or semisolid food at the age of 6- 8months this should be encouraged. 12.3 % mother started early complementary feeding. 95.9 % of mothers have good attitude towards vegetable, meat and the role of husband involvement and conflict with husband affecting appropriate complimentary feeding. 98.8 % of mothers had good practice. 93.5 %, 86.5 % of mother sterilized bottle and practiced bottle shaking respectively. 95.3 % of mothers practiced infant burping and 91.8 % of mothers boil water for formula. This result indicates knowledge, attitude and practice towards complementary feeding among mothers of children 6-23 months is good.

11 Recommendation

We recommend for JU, Pediatrics and child health department and JUMC to increase Knowledge, attitude and practice toward mothers of children visting JUMC and Pediatrics and child health department and those mother having prenatal care to improve early complementary feeding.

12 Strength of the study and limitation of the study

12.1 Strength of the study

This study used face to face interview which helped us to get detailed response of

The mothers, observed nonverbal cue like body language and facial expression and

Immediate clarification of the response of the mothers.

It also used cross sectional study which is useful to assess prevalence of KAP.

12.2 Limitation of the study

Because of small size and sampling technique it is difficult to assess associated factors and generalize the study result to the general population

This research used convenient sampling method which lacks variability and difficult to apply general poupulatoin.

Most of the research done on this topic is in community setup having adequate population

This research used convenient sampling method which lacks variability and difficult to apply to the general population.

There was limited budget to do the research with full capacity.

13 Ethical consideration

Written informed consent is obtained from the Jimma university and study participant. The respondent right and dignity is respected. In order to keep confidentiality of the respondent name is not included.

14 References

1 Abraham Tamirat Gizaw ,1 Pradeep Sopory,2 Morankar Sudhakar Barriers and coping responses towards infant and young child feeding practices in rural Ethiopia: a descriptive qualitative studyhttps://doi.org/10.1371/journal.pone.0293267

2 Jean Prince Claude Dukuzumuremyi, KwabenaAcheampong, Julius Abesig and JiayouLuo Knowledge, attitude, and practice of exclusive breastfeeding among mothers in East Africa: a systematic reviewhttps://doi.org/10.1186/s13006-020-00313-9

3 Abraham Tamirat GizawID1 Pradeep Sopory2 Morankar Sudhakar1 1 Faculty of Public Health, Department of Health, Behavior and Society, Institute of Health, Jimma University, Jimma, Ethiopia, 2 Department of Communication, Wayne State University, Detroit, Michigan, United States of America Determinants of knowledge, attitude and sel fefficacy towards complementary feeding among rural mothers: Baseline data of a cluster-randomized control trial in south West Ethiopia https://doi.org/10.1371/journal.pone.0293267

4 Nicolas Stettler, Jatinder Bhatia, Anjali Parish, Virginia A. Stallings Feeding Healthy Infants, Children, and adolescents chapter 42 Nelson 19th edition

5 Central Statistical Agency Addis Ababa, Ethiopia ETHIOPIA Demographic and Health Survey 6Dawit GetachewAssefa (dawitgetachewa@gmail.com) Dilla University College of Health Sciences Tigist Tekle Woldesenbet Hawassa University Wondwosen Molla Dilla University College of Health Sciences Eden Dagnachew Zeleke BuleHoraUniversity 2016 https://orcid.org/0000-0002-9951-5762

*7 AtheerAldossari, DalalAlshehri, GhadahAlzahrani, Salma Almasoud, YousrAlaqeel& Nada Benajiba*Insights into knowledge, attitude and practices on early complementary feeding of infants among Saudi mothers Clinical Nutrition Programme, Department of Health Sciences, College of Health and Rehabilitation Sciences, Princess Nourah Bint Abdulrahman University, Saudi Arabia https://www.researchgate.net/publication/338434057*

8 SewunetSakoShagaro , Be emnet Tekabe Mulugeta and Temesgen Dileba Kale Complementary feeding practices and associated factors among mothers of children aged 6-23 months in Ethiopia: Secondary data analysis of Ethiopian mini*

demographic and health survey 2019 Department of Health Informatics, School of Public Health, College of Medicine and Health Sciences, Arba Minch University, Arba Minch, Ethiopia

9 Indicators for assessing infant and young child feeding practices Definitions and measurement methods© World Health Organization and the United Nations Children's Fund (UNICEF), 2021 ISBN (WHO) 978-92-4-001838-9 (electronic version)

10 Motuma adimasu abeshu ,azeblelisa,bekeshogeleta complimentary feeding review of recommendation feeding practice and homemade complimentary feeding food preparation in developing ethiopia- lesson from ethiopia John Snow, Inc (JSI)-Ethiopia, Addis Ababa, Ethiopia, 2 Micronutrient Initiative-Ethiopia, Addis Ababa, Ethiopia, 3 Ethiopian Public Health Institute, Addis Ababa, ethiopiahttp://dx.doi.org/10.3389/fnut.2016.00041

11 NashiMasnad Alreshidi∗1, SomiaAbdalwahed Haj Saeed Gadora2 , Eida Habeeb2 , Laila Mohammad Alrashidi3 1Chief Nursing officer Nursing Executive Administration, Hail Health Cluster, Hail City, Saudi Arabia 2Continuing Nursing Education Department. Maternity and Children Hospital, Hail Health Cluster, Hail City, Saudi Arabia 3Antenatal Department, Maternity and Children Hospital, Hail Health Cluster, Hail City, Saudi Arabia Evaluating knowledge, attitudes, and practices regarding complementary feeding (weaning) among mothers of six-month-old children http://jnep.sciedupress.com/

12 Hien A1, 2, Some JW3, Traore IT1,2, Meda C2,4, Traore B5 and I Savadogo2,4 KNOWLEDGE, Attitude and practice of mothers and caregivers on infant and young child feeding in periurban zone of BoboDioulasso in buerkinafasohttps://doi.org/10.18697/ajfand.94.19820*

15 Appendix
Questioner
12.1 English questioner

The questioner is prepared in Amharic then translated to English to asses KAP Complimentary feeding and associated factors among mother of infant 6 months to 23 months

No	Socio-demographic
1	**How old are you?** A 18- 25 B 25-35 C 35 -45 D >45
2	**What is your educational level?** A Illiterate B Primary School C Secondary School D College diploma E First degree F Master's degree and above
3	**Marital statuses of you?** A Married B Divorced C Widow D Unmarried
4	**How many wives do your husband has?** A 1 B 2 C 3 D >3
5	**Your ethnicity** A Oromo B Amhara C Tigre D Wolita E Keffa D Guragea F Dawro H Other mention it

6	**Your religion?** A Orthodox B Muslim C Protestant D Catholic
7	**How many children do you have?** A 1 B 2 C 3 D 4 E >5
8	**Sex of your child?** **A Male** **B Female**
9	**Birth order of your child?** **A 1** **B 2** **C 3** **D 4** **E More than 4**
10	**Do you have ANC follow up for the current child?** **A Yes** **B No**
11	**If yes how many times ?** A 1 Times B 2 Times C 3 Times D more than or equal to 4 times
12	**What is your job?** A House wife B Farmer C Merchant D Teacher/instructor E Doctor F Accountant G If other mention
13	**How much you earn per month?** A 1000-2000 B 2000-4000 C3000-5000 D More than 5000
14	**Do you quarrel with your husband?**

	A yes B No
15	**Do you have radio or television ?** A yes B No
	Complimentary feeding knowledge
16	**How many times per day do you breast Feed?** A 3 times B 4 times C 6 times D 8 times E 12 times
17	**What are the content of the complimentary feeding If there is more answer circle it** A Mixed Cereal B Fish C Egg D Meat E Milk FPotato
18	**Do you feed sweet beverage?** A Yes B No
19	**Do you feed vegetable?** A Yes B No
20	**IF No why?** A Increase belly and gas B It is not recommended C Because I don't think beneficial
21	**How many times per week you feed meat your child ?** A 1 Times B 2 Times C 3 Times D More than 4 times
22	**Do you feed your child bottle feeding?** A Yes B NO
23	**IF Yes what do you feed?** A Cow milk B Formula milk C Juice

	D other
24	**When do you begin complementary feeding?** A Since birth B 2- 4Month C 6 month D 8 month E After 8 month
25	**Have you listened radio or watched television broadcasting about child feeding?** **A Yes** B No
26	**Do you add butter or oil while preparing complimentary feeding ?** A Yes B No
27	**IF your answer is no why?** A It is difficult to digest for the infant B Difficult to afford C Lack of knowledge
28	**Do you supplement vitamin during the 1st 9 months?** A Yes B No
29	**Which vitamin do you supplement?** A Vitamin A B Multivitamin C Vitamin D D Fish oil
30	**Do you have work burden?** A Yes B No
31	**IF yes does it has impact on your child feeding?** A Yes B No
32	**If your answer for the above question is yes** **How?** A No time to feed B No time to cook C I will become tired I let the infant for maid D Other mention it
33	**Who prepare the feeding**? A Mother B Father C House maid D Prepared industrially
34	**How many times do you give complimentary feeding?** A 3 times B 4-6 times

	C 6-8 times D. 8 Times
Attitude question	
35	**Do you agree colostrum is important to newborn?** A Agree B Strongly agree C Disagree D Strongly disagree
36	**Do you agree meat is important for young infant?** A Agree B Strongly agree C Disagree D strongly disagree
37	**Do you agree that starting complimentary feeding before 6 month isimportant?** A Agree B Strongly agree C Disagree D Strongly disagree
38	**Do you agree that Vegetable has harm for young infant?** A Agree B Strongly agree C Disagree D strongly disagree
39	**Does your husband involvement during your infant feeding is necessary** A Agree B Strongly agree C Disagree D Strongly disagree
40	**Family conflicts have impact on your child feeding?** A Agree B Strongly agree C Disagree D Strongly disagree
41	**Do you think infant sex affect breast or complimentary feeding?** A Agree B Strongly agree C Disagree D Strongly disagree
Practice question	
42	**Do you clean kitchen?** A Yes B No
43	**Do you sterilize the bottle?** A Yes B No

44	**Do you boil water for formula feeding?** A yes B No
45	**If yes at what level of temperature** A 30-40 B 40 -50 C 50-60 D 60-70
46	**Do you think exclusive breastfeeding prevent malnutrition**? A Yes B No
47	**Do you shake milk bottle?** A Yes B No
48	**Do you burp the infant after breast feeding?** A Yes B No
49	**Do you wash your hand before preparing food?** A yes B No

15.2 Amharic questioner

እኔ <u>ዶ/ር አላምረው አበበ</u> የህፃናት ትምህርት ክፍል ሦስተኛ አመት ሪዚደንት ስሆን የመመረቂያ ጥናት ስለ ህጻናት አመጋገብ ሁኔታ እውቀትን አመለካከትን እንዲሁም እንዴት ምግብ እንደሚዘጋጅ ጥናት በማካሄድ ላይ ስሆን ከስር በአሉት ጥያቄዎች መሰረት የምጠይቆትን መልስ ለመስጠት እንዲተባበሩኝ በትህትና ፍቃዶን እጠይቃለሁ፡፡
እርስዎ ፍቃደኛ ሆነው በዚህም የመመረቂያ ጽሑፍ ላይ ከ ተሳተፉ ከጥናቱ ጋር የሚሰጡት ማንኛውም መረጃ ሚስጥራዊነቱ የተጠበቀና ለዚህ ጥናት አላማ ብቻ የሚውል መሆንንአረጋግጣለሁ፡፡
መመለስ የማይፈልጉትን ጥያቄያ ለመመልስ ወይም ቃለ መጠየቁን ለመሙላት ከልፈለጉ በማንኛውም ሰዓት የማቋረጥ መብቶ የተጠበቀ ነው፡፡
ፍቃደኛኖት?
ሀ. አዎለ. አይደለሁም
ቅጽ የተሞላበትቀን_____የቅጽልዩ
ቁጥር_____

ተ.ቁ	ሶሾዲሞግራፊክ/አኗኗርሁኔታጥናት	
1	ዕድሜሽ ስንት አመት ነው?	*ሀ. 18-25* *ለ. 25-35* *ሐ.35-45* *መ. ከ 45 በላይ*
2	የትምህርት ደረጃዎ ?	ሀ. ያልተማረ ለ. የመጀመሪያደረጃትምህርት ሐ. ሁለተኛደረጃትምህርት መ. ዲፕሎማ ሠ. ዲግሪ ሰ. ማስተርዲግሪናከዛበኃላ
3	የጋብቻ ሁኔታ?	ሀ. ያገባ ለ. ያላገብ ሐ. የተፈታ መ. ባሏየሞተ
4	ባለቤትሽ ስንትሚቶች አሉት?	ሀ. 1 ለ. 2 ሐ. 3 መ. 3 እና ከዚያበላይ

5	የየትኛው ብሔር አባልነሽ?	ሀ. ኦሮሞ ለ. አማራ ሐ. ትግሬ መ. ወላይታ ሠ. ካፋ ረ. ጉራጌ ሸ. ዳውሮ ቀ. ሌላከሆነጥቀስ
6	የየትኛው ሃይመኖት ተከታይነሽ ?	ሀ. ኦሮቶዶክስ ለ. ሙስሊም ሐ. ፕሮቴስታንት መ. ካቶሊክ
7	ስንት ልጆች አሉሽ?	ሀ. 1 ለ. 2 ሐ. 3 4. 4 5. እናከዛበላይ
8	የልጅሽ ጸታ?	ሀ. ወንድ ለ. ሴት
9	የሂኛው ልጅሽ ስንተኛ ልጅነው?	ሀ. 1 ለ. 2 ሐ. 3 4. 4 ሠ. 4 እናከዛበላይ
10	ለዚኛው ልጅሽ እርግዛና ክትትል ነበረሽ?	ሀ. አዎ ለ. አይደለም
11	ለአስረኛ ውጥያቄ መልስሽ አዎ ከሆነ ስንትጊዜ?	ሀ. 1 ለ. 2 ሐ. 3 መ. 4 እናከዚያበላይ
12	ስራሽ ምንድነው?	ሀ. የቤትእመቤት ለ. ገበሬ ሐ. ነጋዴ መ. መምህር/አንስትራክተር ሠ. ዶክተር ረ. የባንክባለሙያ

		ሸ. ሌላከሆነጥቀሽ
13	የወር ገቢሽ ስንትነው?	ሀ. 1000-2000ብር ለ. 2000-4000ብር ሐ. 3000-5000 ብር መ. ከ5000 ብርበላይ
14	ከባለቤትሽ ጋር ተጣልተሽ ታውቂያለሽ?	ሀ. አዎ ለ. አይደለም
15	ራዲዮ/ቴሌቪዥንአለሽ?	ሀ. አዎ ለ. አይደለም
16	ከላይ ላለው ጥያቄ መልስሽ አዎ ከሆነ ስለ ህጻናት አመጋገብ ሲያስተዋውቅ ሰምተሽ ወይም አይተሽ ታውቂያለሽ?	ሀ. አዎ ለ. አላውቅም
ስለህፃናት አመጋገብ የእውቀት ጥያቄ		
17	በቀን ውስጥ ስንት ጊዜ ጡት ታጠቢያለሽ?	ሀ. 3 ለ. 4 ሐ. 6 መ. 8 ሠ. 12
18	ለልጅሽ ምታዘጋጂው ተጨማሮ ምግብ ምንምን ይይዛል? ከአንድ በላይ መልስ ከአለ አክብብ	ሀ. ምጥን ለ. አሳ ሐ. እንቁላል መ. ሥጋ ሠ. ወተት ረ. ድንች
19	ጣፋጭ ነገር ለልጅሽ ትመገቢያለሽ?	ሀ. አዎ ለ. አይደለም
20	ልጅሽን አትክልት ተመጊቢያለሽ?	ሀ. አዎ ለ. አይደለም
21.	ለ20ኛው ጥያቄ መልስ አይደለም ከሆነ ምክንያቱ?	ሀ. ሆድይነፋል፣አየርምይኖራል ለ. አይመከረም ሐ. ጥቅምያለውአይመስለኝም
22	በሳምንት ስጋ ስንት ጊዜ ትመግቢያለሽ?	ሀ. 1 ለ. 2 ሐ. 3 መ. 4 እናከዛበላይ

23	ልጅሽን ጡጦ ታጠቢያለሽ?	ሀ. አዎ ለ. አይደለም
24	ለ23ተኛው ጥያቄ መልስሽ አዎ ከሆነ ምንድነው በጡጦምታጠቢው?	ሀ. የላምወተት ለ. የፎርሙላወተት ሐ. የፍራፍሬጭማቂ መ. ሌላከሆነጥቀሽ
25	መች ነው ተጨማሪ ምግብ የምትጀምሪው?	ሀ. እንደተወለደ ለ. 2-4 ወር ሐ. 6 ወር መ. 8 ወር ሠ. ከ 8 ወርበኃላ
26	ተጨማሪ ምግብ ስታዘጋጂ ቅቤ ወይንም ዘይት ትጨምሪያለሽ?	ሀ. አዎ ለ. አይደለም
27	ለ26ኛው ጥያቄ መልስሽ አይደለም ከሆነ ምክኒያቱ ምንድነው?	ሀ. ህፃኑምግቡንመብላትስለማይችል ለ. መግዛትስለማይችል ሐ. የጠቅማልብየየስለማላስብ
28	ለልጅች ቫይታሚን የመጀመሪያው ዘጠኝወርላይተስጫለሽ?	ሀ. አዎ ለ. አይደለም
29	ለ28ተኛው ጥያቄ መልስሽ አዎ ከሆነ የትኛውን ቫይታሚን ነው የሰጠሽ?	ሀ. ቫይታሚንA ለ. ምልቲቫይታሚን ሐ. ቫይታሚንዲ መ. የአሳዘይት
30	የስራ ጫና አለብሽ?	ሀ. አዎ ለ. አይደለም
31	ለ30ኛው ጥያቄ መልስሽ አዎ ከሆነ የህፃኑ አመጋገብ ሁኔታ ላይ ክፍተት ይፈጥራል ብለሽ ታስቢያለሽ?	ሀ. አዎ ለ. አይደለም
32	ለ31ኛው ጥያቄ መልስሽ አዎ ከሆነአንዴት?	ሀ. ምግብለመመገብጊዜአላገኝም ለ. ምግብለመብላትጊዜአላገኝም ሐ. ሌላካለጥቀሽ
33	ምግቡን የሚያበስለው ማነው?	ሀ. እኔ/እናትየው ለ. አባትየው ሐ. የቤትሰራተኛ መ. የተዘጋጁምግቦችንእገዛለሁ
34	ስንት ጊዜ ነው ተጨማሪ ምግቦችን ምሰጪው?	ሀ. 3 ለ 4 ሐ 6

		መ 8
የአመጋገብአመለካከትጥያቄ		
35	ስጋ ለህፃናት ይጠቅማል ብለሽ ታሲብያለሽ ወይ?	ሀ. እስማማለው ለ. በጣምእስማማለዉ ሐ. አልስማማም መ. በጣምአልስማማም
36	ተጨማሪ ምግብ 6 ወር መጀመሪ ጥሩ ነው ብለሽ ትስማሚያለሽ?	ሀ. እስማማለው ለ. በጣምእስማማለው ሐ. አልስማማም መ. በጣምእስማማለው
37	አትክልት ለህፃኑ መስጠት ጉዳት አለው ብለሽ ትስማሚያለሽ?	ሀ. እስማማለው ለ. በጣምእስማማለው ሐ. አልስማማም መ. በጣምአልስማማም
38	ባለቤትሽ በህፃኑ አመጋገብ ላይ መሳተፍ ጥቅም አለው ብለሽ ተስማሚያለሽ?	ሀ. እስማማለው ለ. በጣምእስማማለው ሐ. አልስማማም መ. በጣምአልስማም
39	ከባለቤትሽ ጋርመጋጨት የህፃኑ የአመጋገብ ሁኔታ ላይ ከፍተት ይፈጥራል ብለሽ ትስማሚያለሽ?	ሀ. አስማማለው ለ. በጣምእስማማለው ሐ. አልስማማም መ. በጣምአልስማማም
40	የህፃኑ ጾታአመጋገብ ሁኔታ ላይ ተጽእኖ አለው ብለሽ ትስማሚያለሽ?	ሀ. እስማማለው ለ. አልስማማም ሐ. በጣምእስማማለው መ. በጣምአልስማም