

# **Mother's Knowledge, Attitude and Practices (KAP) Regarding Complementary Feeding for Children Age 06-24 Months in Kurrum Agency of FATA Pakistan**

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## **Abstract**

Complementary feeding refers to the timely introduction of safe and nutritional foods in addition to breastfeeding. Complementary feeding interventions targeting this 'critical window' are most efficient in reducing malnutrition and promoting adequate growth and development. It is well-recognized that the period of 6 to 24 months of age is one of the most critical time periods in the growth of the infant. The incidence of stunting is the highest in this period as children have high demand for nutrients and there are limitations in the quality and quantity of available foods, especially after exclusive breastfeeding. The present study reveals 61% of mothers initiate their breast milk soon after delivery, 27% one day after birth and 10% mothers initiate their breast milk 2-3 days after birth. The initiation of complementary food at the age of 8 months, 6 months and 4-5 months were 27%, 57% and 16% respectively. The frequency recorded for complementary food were 32% twice a day and 69% thrice a day. 61% mothers reported that the different food groups should be selected for complementary feeding for maintaining dietary diversity and variety of food for balanced food. The mother's attitude about feeding during illness were examined and 35% mothers reported the quantity and frequency should be decreased during illness. 16% withheld the quantity and frequency, 38% maintain same quantity and amount and only 11% reported to increase the amount and frequency during child illnesses. 53% mothers believe in food taboos and are related to children illnesses if included in complementary foods, out of which 36% believes that Banana, yogurt and rice are cold in nature that can cause chest infection or cough if introduced in complementary feeding and 33% reported that meat, pulses, nuts and egg are hot and hard in nature to digest that can cause diarrhea or loose motion in children if included in the complementary feeding of children. Evaluating the mother practices related to hygiene and complementary feeding, 26% mothers were washing hands as usual with simple water, 45% washing hands before preparation of complementary food, 23% were washing hands with soap while only 7% mothers were using boiled water. Practice related to complementary feeding initiation, 16% mothers introduced complementary food before 6 months of child age, 72% at the age of 6 months while 13% at the age of 1 year.

## **Keywords**

KAP, Complementary Feeding, Children Age 06-24 Months, Stunting

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## 1. Introduction

During first six months of life breast milk should be fed alone and must remain the first food for infants. [1] [2] From then onwards it should be complemented with other sources of nutrition until at least 2 years of age. [3] [4]. The weaning process is slow reduction in breastfeeding with introduction of foods other than breast milk into an infant's diet. There is very little documented information on complementary foods and practices of the infants and young children in Pakistan. There is increased risk of episodes of gastrointestinal infections that remain the principal justification against the introduction of complementary food stuff before the sixth months of life. Moreover, complementary foods are introduced much earlier than the recommended age of four months, [5] often even in the first month of life. Absorption of breast milk iron altered with early introduction of cereals and particularly vegetables, while iron deficiency anaemia noted when late weaning started [6]. Complementary feeding started late in developing countries. [7] [8]. In Pakistan many complementary foods are only a slight modification of adult foods, without consideration of nutritional requirements of children. [9]

Complementary feeding refers to the timely introduction of safe and nutritional foods in addition to breast-feeding (BF) (i.e. clean, safe and nutritionally rich additional foods initiated at about six months of age) [10]. These foods are typically provided to children from 6 to 24 months of age. [11]. It has been suggested that in addition to disease-prevention strategies, complementary feeding interventions targeting this 'critical window' are most efficient in reducing malnutrition and promoting adequate growth and development. [12]. According to the World Health Organization (WHO), complementary feeding should be timely, adequate, appropriate, and given in sufficient quantity [13]. Several strategies have been employed to improve complementary feeding practices. These include nutritional education to mothers designed to promote healthy feeding practices; provision of complementary foods offering extra energy (with or without micronutrient fortification), and increasing energy density of complementary foods through simple technology. It is well-recognized that the period of 6 to 24 months of age is one of the most critical time periods in the growth of the infant. The incidence of stunting is the highest in this period, as children have high demand for nutrients and there are limitations in the quality and quantity of available foods, especially after exclusive breastfeeding. The Federally Administered Tribal Areas of Pakistan (FATA) represent the worst nutrition situations at national. The National Nutrition Survey 2011 (NNS) [14] reflects 58% stunting rates in children under 5

years of age with persistent aggravating factors, food insecurity and poor economic access in FATA. The other contributing factors to malnutrition include inadequate dietary diversity together with limited meal frequency, inadequate infant and young child feeding practices (IYCF), early and frequent childbearing and limited access to health services. The present study was therefore undertaken to determine the child feeding practices in children 6-24 months.

### *Objectives*

1. To determine the mothers knowledge, attitude and practices (KAP) regarding complementary feeding in Kurrum agency of FATA
2. To see the relationship of education and socio economic status of mothers knowledge, attitude and practices regarding complementary feeding

## 2. Material and Methods

### 2.1. Location of the Study

The cross sectional descriptive study was conducted in Kurrum Agency of FATA, for evaluation of mother's knowledge, attitude and practices regarding complementary feeding, the nutrition sites (Targeted Supplementary Feeding Program (TSFP) and Infant & young child feeding practices (IYCF) which are established at Govt. Basic Health Units (BHUs) for the treatment of moderately acute malnourished children age 06-59 months and pregnant & lactating mothers with the support World Food Programme (WFP). The moderately malnourished children and pregnant & lactating women are provided Lipid Based Ready to Use Supplementary Food called AchaMum for children age 06-59 months and Maamta for pregnant & lactating women. Mothers are educated and counselled on infant and young child feeding practices for promotion of early initiation of breast feeding, exclusive breast feeding, initiation of complementary feeding at the age of 6 months and continuation of breast feeding along with breastfeeding up to the age of 2 years. Mothers along with their children visits the targeted supplementary feeding program sites for attainment of nutrition services on the basis of their nutrition status.

### 2.2. Sample Size, Selection and Inclusion Criteria

Mothers were the subject of the study attending the TSFP sites and 200 mothers of children age 06-24 months were selected. The inclusion criteria for the study was mothers having children under 06-24 months. Care taker and mothers of children above the targeted age group were excluded from

the study. Written consent form were signed from those who are fulfilling the inclusion criteria for participation in the study. The subjects were interviewed for their Knowledge, attitude and practices regarding quantity, quality and type of complementary foods given, socio economic and demographic information using standard questionnaire.

### 2.3. Statistical Analysis

Before analysis the data were entered into the computer and analyzed using SPSS (SPSS Inc. 2007). Frequencies and percentages were computed for presenting all categorical variables.

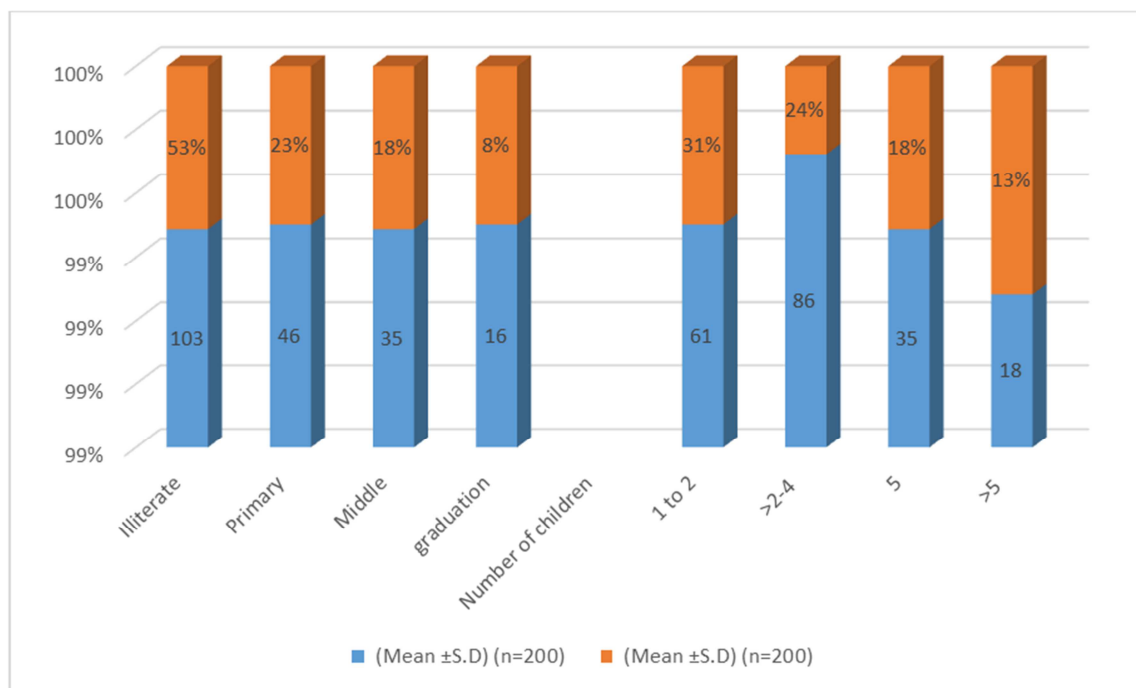
## 3. Results

Table-1 reveals the general characteristics of the study subjects interviewed. The mean age of the interviewed mother were  $24.12 \pm 3.78$ . Majority of the interviewed mothers 53% (103) were illiterate, 23% (46) had received primary education 35% (18) had received middle education

and 8% (16) were graduated respectively. 46% (92) mothers reported 1-2 children per family, 24% (47) reported >2-4, 18% (36) reported 5 and 13% (25) mothers reported >5 children per family respectively. The mean children family size per family was  $3.99 \pm 1.18$ . Among 31% (61) reported 1-2 family size, 43% (86) has more than 2-4 children per family, 18% (35) has 5 and 09% (18) mothers reported more than 5 children per family respectively.

**Table 1.** Mothers Socio-demographic characteristics (n=200).

Variables	(Mean $\pm$ S.D) (n=200)	
Age (Years)	$24.12 \pm 3.78$	
Education Level:	n	%
Illiterate	103	53%
Primary	46	23%
Middle	35	18%
Graduation	16	8%
Children size per family:		
1 to 2	61	31%
>2-4	86	24%
5	35	18%
>5	18	13%



**Figure 1.** Mothers Socio-demographic characteristics.

## 4. Knowledge about Complementary Feeding

Table-2 reveals the mother's knowledge about the optimal breast feeding practices. 61% (121 mothers initiate their breast milk soon after delivery, 27% (53) 1 day after birth, 10% (19) mothers initiate their breast milk 2-3 days after birth while 4% (7) mother had no idea about the initiating of breast feeding

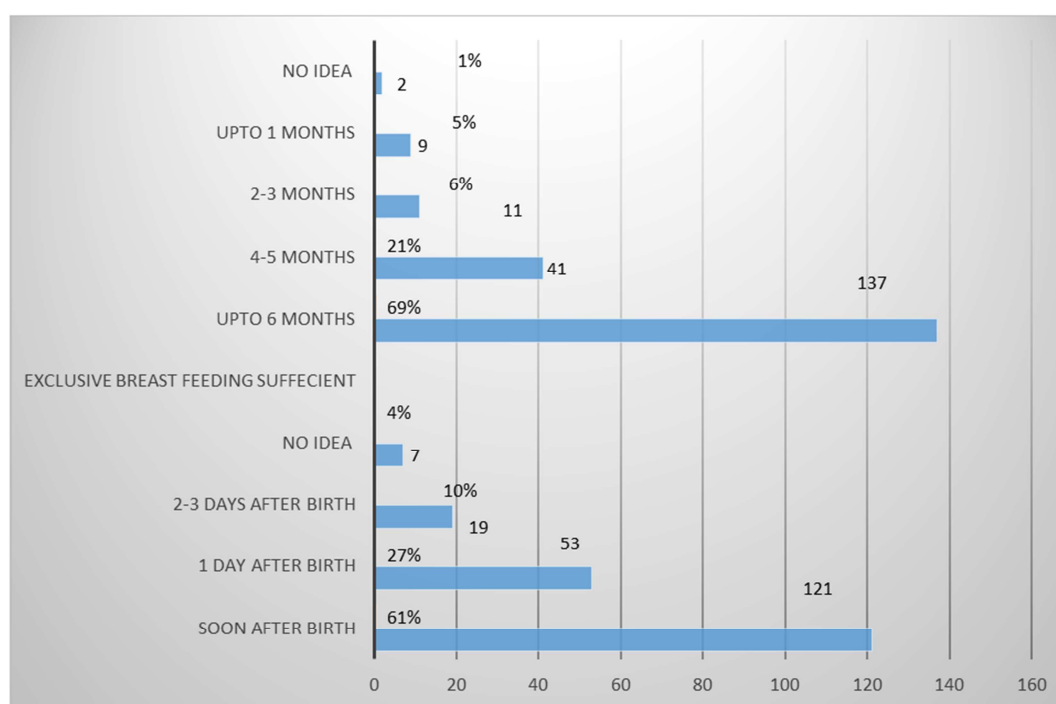
practices. The percent of mothers 69% (137), 21% (41), 6% (11), 5% (9) and 1% (2) reported that the exclusive breast feeding should be sufficient up to 6 months, 4-5 months, 2-3 months, up to 1 month and no idea respectively. The initiation of complementary food at the age of 8 months, 6 month and 4-5 months were 27% (54), 57% (114) and 16% (32) respectively. The frequency recorded for complementary food were 32% (63) twice a day and 69% (137) thrice a day. The understanding and basic knowledge about preparation of

complementary foods from home made and commercially availability were 43% (86) and 57% (114) respectively. The main source of knowledge regarding complementary foods items were health professional, family, electronic media and

relatives respectively. 28% (55) mothers knew about the use of iron rich food, 62% (123) use of iodized salt and 73% (145) and 39% (77) had no idea respectively.

**Table 2.** Mothers knowledge (n=200).

<b>Initiation of breast feeding after birth:</b>	<b>n</b>	<b>%</b>
Soon after birth	121	61%
1 day after birth	53	27%
2-3 days after birth	19	10%
No idea	7	4%
<b>Exclusive breast feeding:</b>		
Up to 6 months	137	69%
4-5 months	41	21%
2-3 months	11	6%
Up to 1 months	9	5%
No idea	2	1%
<b>Initiation of complementary feeding:</b>		
at 8 months	54	27%
at 6 months	114	57%
4-5 months	32	16%
<b>Frequency of Complementary Feeding:</b>		
Twice a day	63	32%
Thrice a day	137	69%
<b>Knowledge about complementary foods:</b>		
Home made	86	43%
Commercially available	114	57%
<b>Source of knowledge of commercially available complementary foods items:</b>		
Health professional	48	24%
Family	93	47%
Electronic Media	27	14%
Relatives	32	16%
<b>Knowledge about iron rich food:</b>		
Yes	55	28%
No idea	145	73%
<b>Knowledge about adding iodized salt:</b>		
Yes	123	62%
No idea	77	39%



**Figure 2.** Mother's knowledge about Breastfeeding Practices.

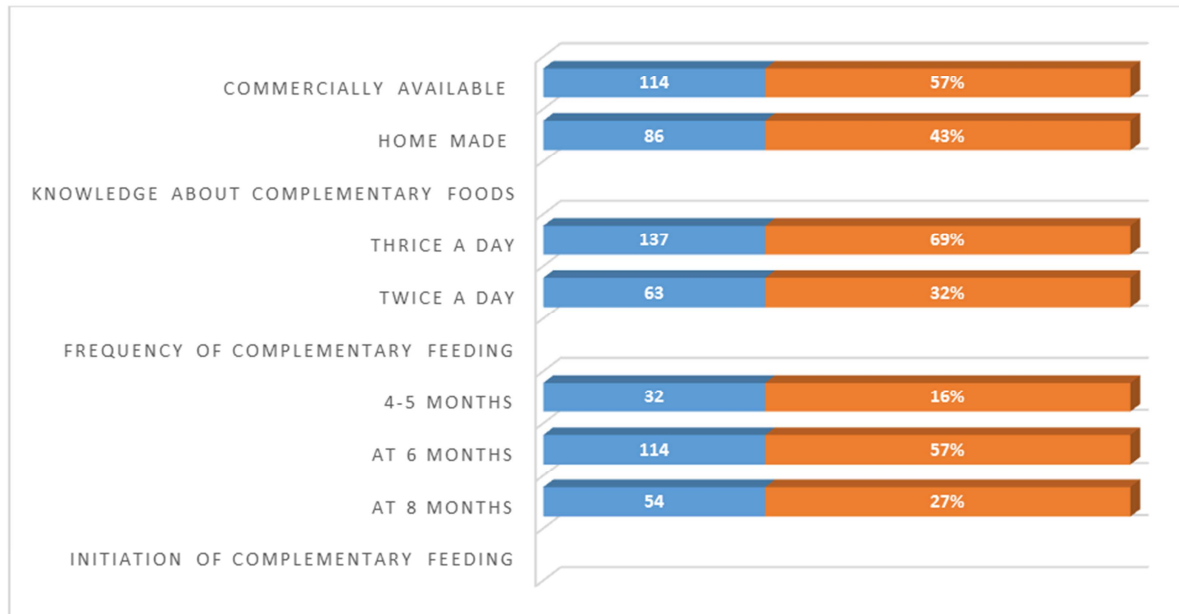


Figure 3. Mothers Knowledge about Complementary Feeding.

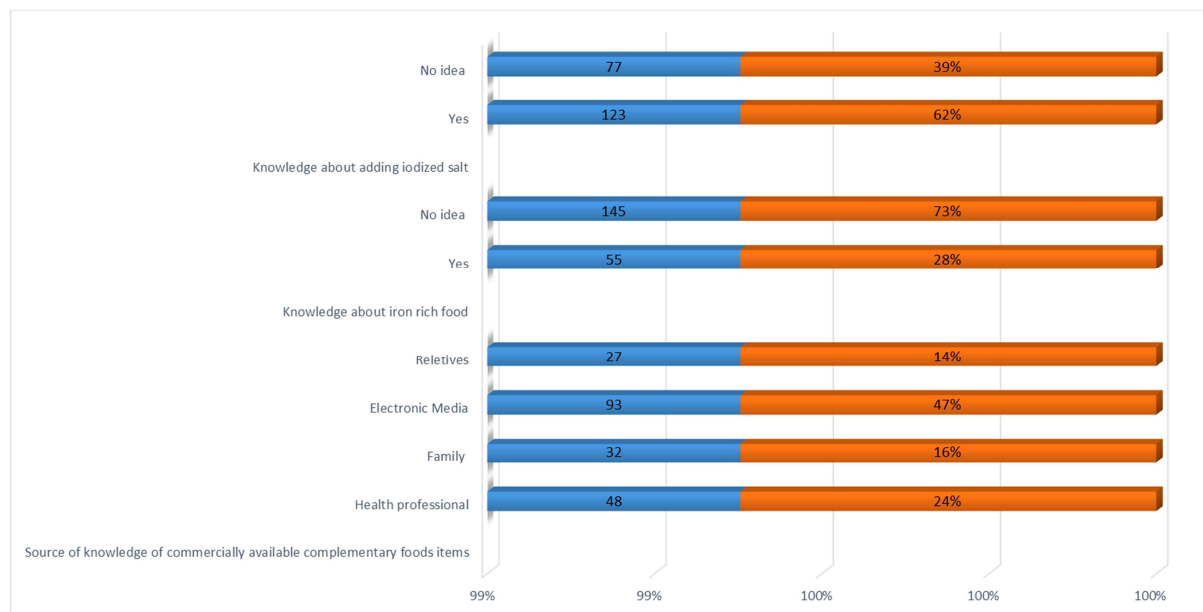


Figure 4. Mothers Source of knowledge about CF.

## 5. Mother's Attitudes About Complementary Feeding (CF)

Table-3 reveals about the mother's attitude about the complementary feeding practices. 61% (121) mothers reported that the different food groups should be selected for complementary feeding for maintaining dietary diversity and variety of food for balanced food. The mother's attitude about feeding during illness were also recorded. 35% (70) mothers reported the quantity and frequency should be decreased during illness. 16% (16) withheld the quantity and frequency, 38% (76) maintain same quantity and amount and

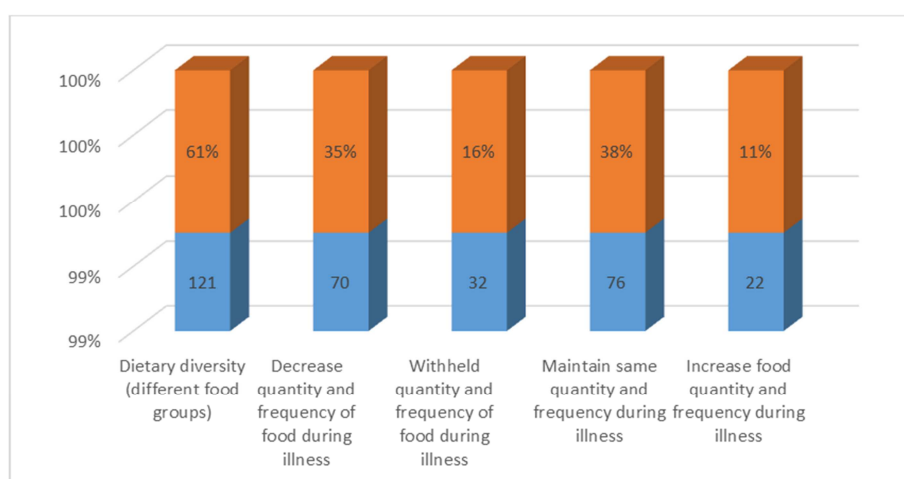
only 11% (22) reported to increase the amount and frequency during child illnesses. In the study the mother's believes about cultural and social food taboos were also inquired. 53% (106) mothers believes on food taboos and are related to children illnesses if included in complementary foods, out of which 36% (72) believes that Banana, yogurt and rice are cold in nature that can cause chest infection or cough if introduced in complementary feeding and 33% (66) reported that meat, pulses, nuts and egg are hot and hard in nature to digest that can cause diarrhea or lose motion in children if included in the complementary feeding of children. Mother's food preferences and preparation were also recorded, 37% (76) and 32% (62) preferred homemade

and commercially available complementary foods respectively while 31% (61) preferred both homemade as well as commercially available complementary foods to feed the children. 36% (71) mothers preferred that separate

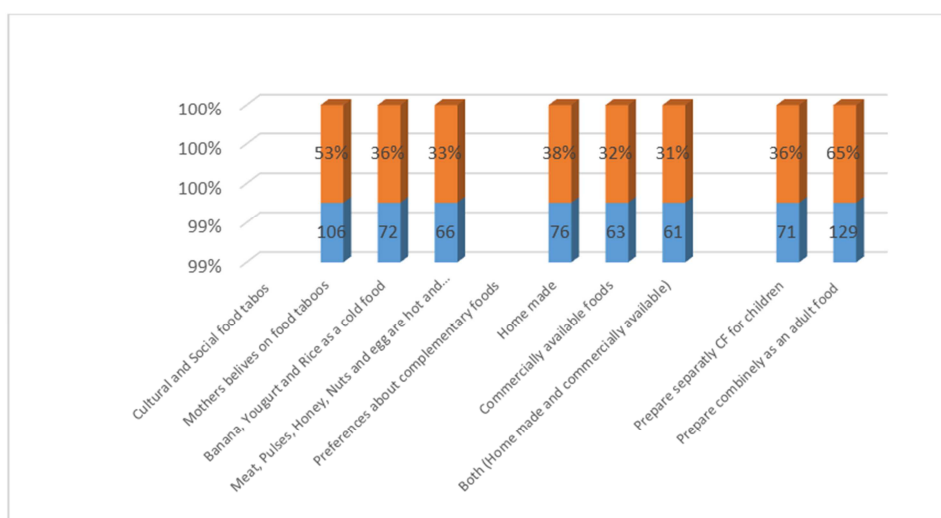
complementary food should be prepared while 65% (129) mothers preferred that the routine food prepared for the rest of the family is fed to children as well as a complementary food and no separate food is prepared.

**Table 3.** Mother's attitude about Complementary feeding (CF).

<b>Mothers attitude, behavior and preference about Complementary Feeding:</b>	<b>n</b>	<b>%</b>
Dietary diversity (different food groups)	121	61%
<b>Complementary feeding practices and frequency during illness:</b>		
Decrease quantity and frequency of food during illness	70	35%
Withheld quantity and frequency of food during illness	32	16%
Maintain same quantity and frequency during illness	76	38%
Increase food quantity and frequency during illness	22	11%
<b>Cultural and Social food taboos:</b>		
Mothers believes on food taboos	106	53%
Banana, Yogurt and Rice as a cold food	72	36%
Meat, Pulses, Nuts and egg are hot and hard to digest	66	33%
<b>Preferences about complementary foods:</b>		
Home made	76	38%
Commercially available foods	63	32%
Both (Homemade and commercially available)	61	31%
<b>Mother's preferences about preparation of complementary foods:</b>		
Prepare separately CF for children	71	36%
Prepare combinely as an adult food	129	65%



**Figure 5.** Mother attitude and Behaviours Preference about CF Practices.



**Figure 6.** Culture, social taboos, Preference about CF Preparation.



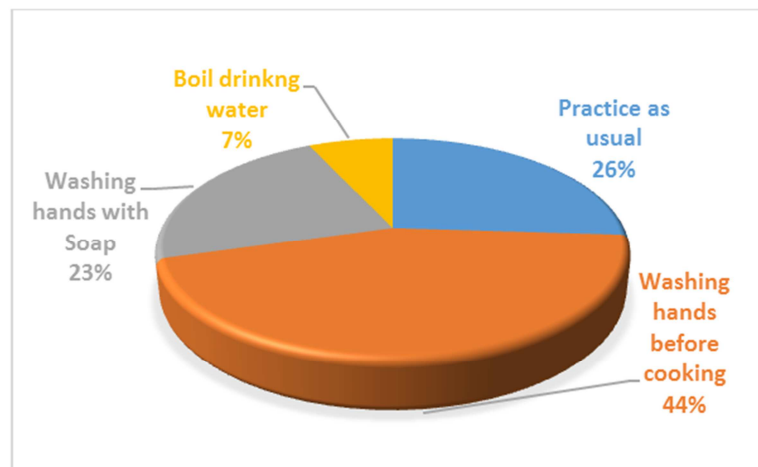
## 6. Mothers Practices About Complementary Feeding (CF)

Evaluating the mother practices related to hygiene and complementary, 26% (52) mothers were washing hands as usual with simple water, 45% (89) washing hands before preparation of complementary food, 23% (45) were washing hands with soap while only 7% (14) mothers were using boil water. Practice related to complementary feeding initiation, 16% (32) mothers introduced complementary food before 6 months of child age, 72% (143) at the age of 6 months while 13% (25) at the age of 1 year. Evaluating the mother practices

about type of complementary foods, 34% (68) introduced commercially available complementary foods (cerlac), 41% (82) prefer tea with biscuits, 3% (6) teas with bread, 3% (5) boil mashed potato, 1% (2) banana, 10% (19) boil rice and 9% (18) introduced custard and kheer as a complementary foods. Majority of the mothers believed on food taboos in which 26% (52) mothers don't not banana, 26% (51) yogurt and 16% (31) rice that cause chest infection of their children. The frequency of complementary feeding practices, the majority of the mothers feed their children 54% (108) two times a day followed by those who feed three time a day 35% (69) while 12% (23) mothers fed their children one time day.

**Table 4.** Mother's hygiene practices.

<b>Mother's hygiene practices:</b>	<b>n</b>	<b>%</b>
Practice as usual	52	26%
Washing hands before cooking	89	45%
Washing hands with Soap	45	23%
Boil drinking water	14	7%
<b>Initiation of Complementary food:</b>		
before 6 months	32	16%
at 6 months	143	72%
at the age of 1 year	25	13%
<b>Types of complementary foods:</b>		
Commercial foods as CF (cerlac)	68	34%
Tea and Biscuits	82	41%
Tea and Bread	6	3%
Boil mashed Potato	5	3%
Banana	2	1%
Boil rice	19	10%
Custard and Kheer	18	9%
<b>Food taboos:</b>		
Banana causes chest infection	52	26%
Yogurt causes chest infection	51	26%
Rice causes chest infection	31	16%
<b>Frequency of Complementary Feeding (CF):</b>		
Three times a day	69	35%
Two time a day	108	54%
one time a day	23	12%



**Figure 7.** Mother's hygiene Practices.

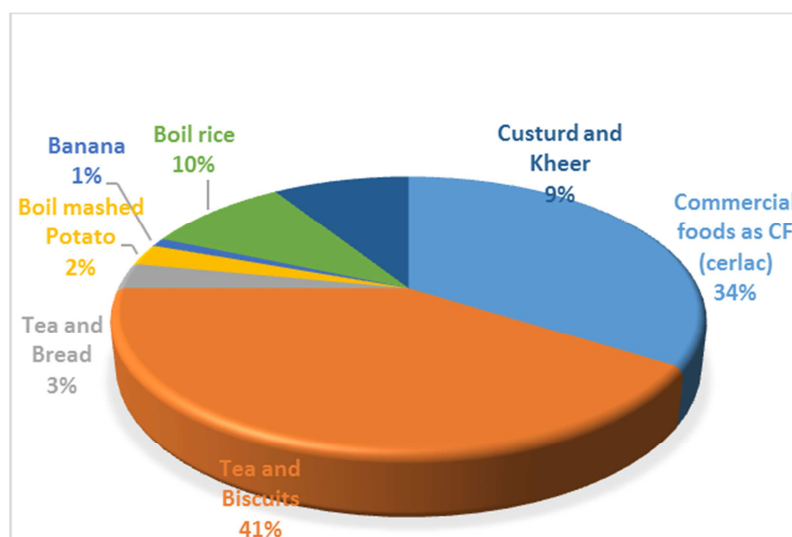


Figure 8. Types of cf.

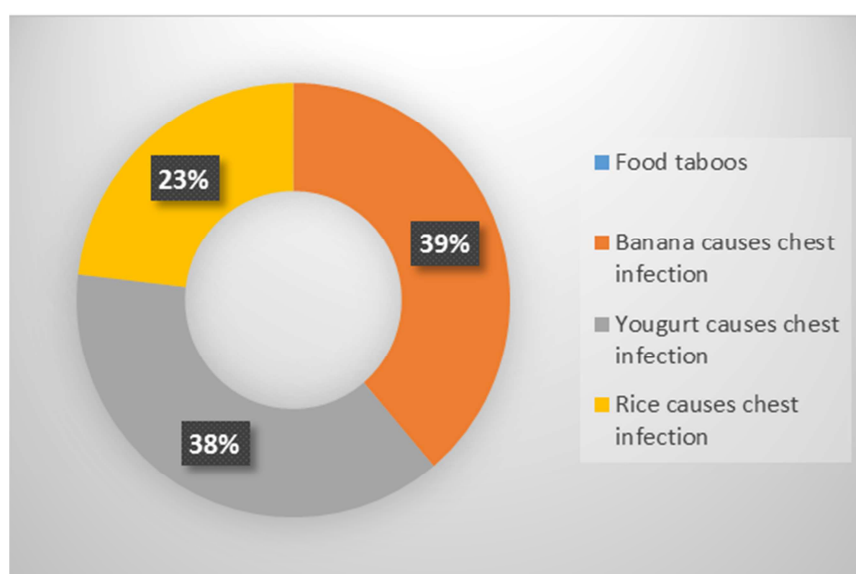


Figure 9. Food Taboos.

## 7. Discussion

In this study we sought to establish the age when complementary feed was started, duration of breast feeding, what items were given as complementary feed and various other aspects related to the subject. The knowledge regarding breast feeding was high, the initiation of breastfeeding soon after birth was low and exclusive breastfeeding up to 6 month was high by 69% of mothers. In spite of differences between age and socioeconomic conditions breast feeding was started at the appropriate time and momentum was also maintained. W.H.O recommends exclusive breastfeeding till 6 months of age<sup>2</sup> however in our setting exclusive breast feeding (EBF) till six months is rare. Indeed this study's results indicates that the mother's

knowledge about the optimal breast feeding practices. 61% (121 mothers initiate their breast milk soon after delivery, 27% (53) 1 day after birth, 10% (19) mothers initiate their breast milk 2-3 days after birth while 4% (7) mother had no idea about the initiating of breast feeding practices. The percent of mothers 69% (137), 21% (41), 6% (11), 5% (9) and 1% (2) reported that the exclusive breast feeding should be sufficient up to 6 months, 4-5 months, 2-3 months, up to 1 month and no idea respectively. The initiation of complementary food at the age of 8 months, 6 months and 4-5 months were 27% (54), 57% (114) and 16% (32) respectively. The frequency recorded for complementary food were 32% (63) twice a day and 69% (137) thrice a day. The understanding and basic knowledge about preparation of complementary foods from home made and commercially availability were 43% (86) and 57% (114) respectively. The



main source of knowledge regarding complementary foods items were health professional, family, electronic media and relatives respectively. 28% (55) mothers knew about the use of iron rich food, 62% (123) use of iodized salt and 73% (145) and 39% (77) had no idea respectively.

The study results reveals about the mother's attitude about the complementary feeding practices. 61% (121) mothers reported that the different food groups should be selected for complementary feeding for maintaining dietary diversity and variety of food for balanced food. The mother's attitude about feeding during illness were also recorded. 35% (70) mothers reported the quantity and frequency should be decreased during illness. 16% (16) withheld the quantity and frequency, 38% (76) maintain same quantity and amount and only 11% (22) reported to increase the amount and frequency during child illnesses. In the study the mother's believes about cultural and social food taboos were also inquired. 53% (106) mothers believes on food taboos and are related to children illnesses if included in complementary foods, out of which 36% (72) believes that Banana, yogurt and rice are cold in nature that can cause chest infection or cough if introduced in complementary feeding and 33% (66) reported that meat, pulses, nuts and egg are hot and hard in nature to digest that can cause diarrhea or lose motion in children if included in the complementary feeding of children. Mother's food preferences and preparation were also recorded, 37% (76) and 32% (62) preferred homemade and commercially available complementary foods respectively while 31% (61) preferred both homemade as well as commercially available complementary foods to feed the children. 36% (71) mothers preferred that separate complementary food should be prepared while 65% (129) mothers preferred that the routine food prepared for the rest of the family is fed to children as well as a complementary food and no separate food is prepared.

Evaluating the mother practices related to hygiene and complementary feeding practices, 26% (52) mothers were washing hands as usual with simple water, 45% (89) washing hands before preparation of complementary food preparation, 23% (45) were washing hands with soap while only 7% (14) mothers were using boil water. Practice related to complementary feeding initiation, 16% (32) mothers introduced complementary food before 6 months of child age, 72% (143) at the age of 6 months while 13 (25) at the age of 1 year. Evaluating the mother practices about type of complementary foods, 34% (68) introduced commercially available complementary foods (cerlac), 41% (82) prefer tea with biscuits, 3% (6) teas with bread, 3% (5) boil mashed potato, 1% (2) banana, 10% (19) boil rice and 9% (18) introduced custard and kheer as a complementary foods. Majority of the mothers believed on food taboos in which

26% (52) mothers don't not banana, 26% (51) yogurt and 16% (31) rice that cause chest infection of their children. The frequency of complementary feeding practices, the majority of the mothers feed their children 54% (108) two times a day followed by those who feed three time a day 35% (69) while 12% (23) mothers fed their children one time day.

## 8. Conclusion

For evaluate the mother's knowledge, attitude and practice regarding complementary feeding, the proposed study was conducted. The targeted mothers with average age 24 years interviewed for evaluating their KAP about complementary feeding. The study reveals that maximum mothers have significant and appropriate knowledge and attitude towards the use of optimal breastfeeding, exclusive breastfeeding, initiation of appropriate complementary feeding, continuation of breastfeeding till years, mother's preference about the preparation of home based complementary feeding targeting the minimum dietary diversity and minimum acceptable diets but having inappropriate optimal practices. Inappropriate breastfeeding and optimal complementary feeding practices are the underlying cause of child under-malnutrition which can be reduced through improving and promoting the optimal feeding practices.

## Recommendations

Targeting the window of opportunity/thousand days approach (1000 days) i.e. conception till 2 years of child age after birth, through multi-sectoral and behaviour change communication (BCC) strategy can greatly reduce the rate of wasting and stunting in children under 5 years using behaviour change communication approach.

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