

Complementary Feeding Types, Timing and Practices by Mothers in Al-Kut City

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ABSTRACT:

BACKGROUND:

Complementary feeding is a process starting when breast/formula milk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast/formula milk.

AIM OF THE STUDY:

To determine the type and time of initial complementary feeding practiced by mothers in Kut City and its relation with some associated factors.

METHODS:

A descriptive primary health center-based study conducted on 500 mothers attending 29 primary health care centers in Al-Kut City for the period of 4 months extended between 1st of April to 31st of July 2017. Data were collected using a structured questionnaire by direct interview.

RESULTS:

The majority of children received food made from carbohydrates (Rice & Rice water, Porridge, Potato's, Broths, and Biscuits) and Cerelac in percentage of 33.8 and 33.6 respectively. The majority of the complementary feeding was started at 6th month (49.6%).

CONCLUSION:

The majority of infants who attend primary health centers in Al-Kut city received cereal-based food and Cerelac as their first complementary food.

KEYWORDS: Complementary Feeding, Cerelac, Breast Feeding, Weaning.

INTRODUCTION:

It is elementary to the infant and child to take adequate nutrition and it is well known that first year of life is the "critical window" for encouragement of normal growth, health and behavioral development⁽¹⁻²⁾.

The term "weaning" is progressively replaced by the term "complementary feeding" on international level. This is to focus an attention on the recommendation that mothers should continue breast-feeding their babies after the initiation of appropriate solid foods for at least the first year of life. While the original World Health Organization (WHO) definition of complementary feeding included infant formula as a complementary food⁽³⁾. The term now indicates all solid foods and liquids other than breast milk or infant formula and follow-on formula⁽⁴⁾.

The transition from exclusive breastfeeding to family foods-referred to as complementary

feeding-optimally extends from 6th to 24th months of age, in spite of breastfeeding may continue up to the end of 2nd years and beyond. This is a critical stage of growth in which nutrient deficiencies and illnesses accountable globally to higher rates of malnutrition in children below the age of five⁽⁵⁾.

Recommended practices include the convenient initiation of complementary foods at 6 months of age, adequate meal frequency and portions sizes, diversity of diet, appropriate food texture, safe food preparation, storage and hygiene behaviors, and responsiveness to feeding cues⁽⁶⁾.

Chronic childhood malnutrition is remaining one of the most troublesome public health problems in the developing countries⁽⁷⁾. There are several determinants of under-nutrition, including wrong dietary practices. Appropriate complementary feeding and caring practices by caregivers however, still a challenge for most households, especially in low-income countries⁽⁸⁾.

Feeding practices is reset of complex personal, social cultural and economic influences, which is one of the determinants of the nutritional status of the children⁽⁹⁾. Traditional foods may have

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a fundamental role of providing important micronutrients and macronutrients⁽¹⁰⁾.

Human breast milk is optimal for stimulating growth and development of infants⁽¹¹⁾. The WHO recommends mothers to exclusively breastfeed their child during the first 6 months of life⁽¹²⁾. The WHO is recommending 6 months of exclusive breastfeeding and to continue breastfeeding up to 2 years of age or beyond in addition to complementary feeding⁽¹³⁻¹⁴⁾.

Inappropriate feeding practices in addition to other causes such as infection and food shortage may be accountable for one-third of malnutrition, depending on population, place, time and season⁽¹⁵⁾. Initiation and duration of breastfeeding and age of introduction to complementary foods have important effects on growth and development as well as current and long-term health⁽¹⁶⁾.

The current study was conducted aiming to determine; type and time of introduction of complementary feeding practiced by mothers in Kut City.

SUBJECTS AND METHOD:

The current study is a descriptive cross-sectional study conducted in the whole 29 PHCs in Kut city (15 PHC in Kut First Sector and 14 PHC in Kut Second Sector) in Kut city during the period from 1st of April to 31st of July 2017. Kut City is a large city represent the center of Wasit Governorate, about 17012 km² area and 853618 populations, located 180 km south-east to the capital Baghdad City⁽¹⁷⁾.

The study population is consisting of 500 mothers who attend the selected primary health care centers for any reason related to their children health or vaccination. The age of children who were enrolled is from 6 months to 12 months.

A convenient sampling technique was used to select participants, this method was chosen because it provides easy access to the subjects, and it was simple, practical and quick, but highly biased and cannot be generalized.

The study was conducted by direct interview using structured questionnaire form on mothers who agree to participate. The time spent for each

interview ranged between 10 to 20 minutes for each mother.

The questionnaire form includes; complementary feeding data, mothers' sociodemographic data (age, type of residence, occupation, employment and educational level, and children data: sex, age, weight (measured by digital scale), exclusive breast or bottle feeding, the time to start complementary feeding.

The socioeconomic state was classified according to modified score mainly from Al-Mashhadani 1989 as four parameters and includes low (0-4), middle (5-8) and high (9-12). In this score the crowding index is defined by total number of co-residents per household, excluding the newborn infants, divided by total number of rooms, excluding the kitchen and bathrooms⁽¹⁸⁾.

Analysis of data was carried out using the available statistical package of SPSS-24 (Statistical Packages for Social Sciences- version 24). Data were presented in simple measures of frequency, percentage, mean, standard deviation, and range (minimum-maximum values).

RESULTS:

The current study was conducted on a sample of 500 mothers with their socio-demographic data shown in table 1, were thirty-six mothers (7.2%) below 20 years old, 125 mothers (25.0%) 20-24 years old, 144 mothers (28.8%) 25-29 years old, 111 mothers (22.2%) 30-34 years old while the rest 84 mothers (16.8%) were above 35 years old. Ninety-seven percent of mothers were from urban area and only 15 mother (3.0%) were living in rural area with majority of mothers (71.6%) came from extended families.

Regarding the number of infants there were 43.0% of mothers having one infant, 27.8% having two infants, 13.6% having three infants, 10.2% having 4 infants, 2.8% having 5 infants and the rest 2.6% have 6 infants and more.

Concerning mothers' occupation, majority of them were housewives, literate and middle-class socioeconomic status (Table 1).

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Table 1: Distribution of the mother sample according to the socio-demographic characteristics, Kut 2017(n=500).

		No	%
Mother age (years)	<20	36	7.2
	20---24	125	25.0
	25---29	144	28.8
	30---34	111	22.2
	=>35	84	16.8
	Mean± SD(Range)	27.6±5.9 (16-43)	
Type of residency	Urban	485	97.0
	Rural	15	3.0
Type of family	Nuclear	142	28.4
	Extended	358	71.6
Number of children	1	215	43.0
	2	139	27.8
	3	68	13.6
	4	51	10.2
	5	14	2.8
	=>6	13	2.6
	Mothers employment	Governmental employee	96
Private employee		11	2.2
Housewife(non-employed)		393	78.6
Educational level	Illiterate	82	16.4
	Primary	180	36.0
	Intermediate	39	7.8
	Secondary	53	10.6
	College & Higher	146	29.2
Socio-economic status	Low	211	42.2
	Middle	255	51.0
	High	34	6.8

Table 2 demonstrates infants' characteristic.

Most of infants in the data were of male sex (58.8%) while females represent 41.2%.

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Table 2: Distribution of infants' sample according to The socio-demographic characteristics, Kut 2017(n=500).

		No	%
child sex	Male	294	58.8
	Female	206	41.2
infants age (months)	6	151	30.2
	7	100	20.0
	8	41	8.2
	9	81	16.2
	10	79	15.8
	11	19	3.8
	12	29	5.8
infants weight (grams)	5000	22	4.4
	6000	94	18.8
	7000	131	26.2
	8000	130	26.0
	9000	73	14.6
	10000	37	7.4
	=>11.0	13	2.6

Table 3 shows the person who feeds the infants at home and feeding type at time of introduction of complementary feeding. The vast majority of infants were fed by their mothers (93.8%) and only 6.2% are fed by

grandmother. Exclusive breast feeding was the most common feeding type and represent 274 baby or 54.8%, while bottle feeding was in 21.0% and mixed feeding was in 24.2% (Table 3).

Table 3: The person who fed infants at home and types of feeding at time of introduction of complementary feeding, Kut 2017,(n=500).

		No	%
Who feed the infants at home	Mother	469	93.8
	Father	-	-
	Grandmother	31	6.2
	Others	-	-
Feeding type	Breast	274	54.8
	Bottle	105	21.0
	Mixed	121	24.2

Table 4 shows that the majority of infants received their 1st complementary feeding at 6th month of age (49.6%). The second common time for initiating complementary feeding was the 5th month (27.6%). Seventy-eight infants (15.6%) received their complementary feeding at 4 months' age while 30 infants (6.0%) received their complementary feeding at 7 months and only 4 infants (0.8%) received their complementary feeding at 8 months and only one infant (0.2%) received his

complementary feeding at 9 months and 10 months.

The most common reason to start complementary feeding was "baby needs extra food"(86.4%) while 68 mothers (13.6%) started complementary feeding because of perceived inadequate breast milk. The source of advice for mothers to start complementary feeding was most commonly from motherly intuition (74.8%), followed by family education (13.6%) and the least from medical advice as the source of knowledge (11.6%).

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Table 4: The distribution of complementary feeding timing, reason and advice source for initiation, Kut 2017, (n=500).

		No	%
When started to give complementary feeding (months)	4 and less	78	15.6
	5	138	27.6
	6	248	49.6
	7	30	6.0
	8	4	0.8
	9	1	0.2
	10	1	0.2
Why started complementary feeding at this time	Child need for extra food	432	86.4
	Perceived inadequate breast milk	68	13.6
Source of advice to initiate complementary feeding	Family education	68	13.6
	Medical advice	58	11.6
	Motherly intuition	374	74.8

Table 5 displays initial complementary food categories and the time to start them. The median age to start cereal-based and fruits was 5 months,

while Cerelac, vegetable, meat and dairy products were introduced in 6th month but the median age for introducing eggs was 7th month.

Table 5: Initial complementary feeding categories and initiating time, Kut 2017, (n=500).

Items of complementary feeding	When started to give complementary feeding (months)		
	No	%	Mean±SD (Range)
Cereal-based (Rice, rice water, porridge. Biscuits etc.)	169	33.8	5.4±0.8 (3-7)
Cerelac (c)	168	33.6	5.5±0.9 (3-8)
Fruit	63	12.6	5.2±1.1 (3-9)
Vegetables	50	10.0	5.7±0.8 (3-8)
Meat soup and others (Shofan, hares, etc)	25	5.0	5.9±1.3 (4-10)
Caster & yogurts	19	3.8	5.6±0.8 (4-7)
Eggs	6	1.2	6.7±0.8 (6-8)

Figure 1 demonstrates items of complementary foods by percentage. Cerelac was starting complementary item in majority of babies (33.6%), rice water was the next common one (13.4%) while other food items and their numbers were as follow respectively: biscuits (10.4%), vegetable soup (10%), fruit (6.8%), broth (6%), fruit juice (5.8%), caster (3.2%),

porridge (2.8%), meat soup (1.4%), egg (1.2%), mashed potato (0.8%), yoghurt (0.6%), rice and broth (0.4%) and others (3.6%) which include Oat Shofan and Harris “common food item mainly from wheat”.

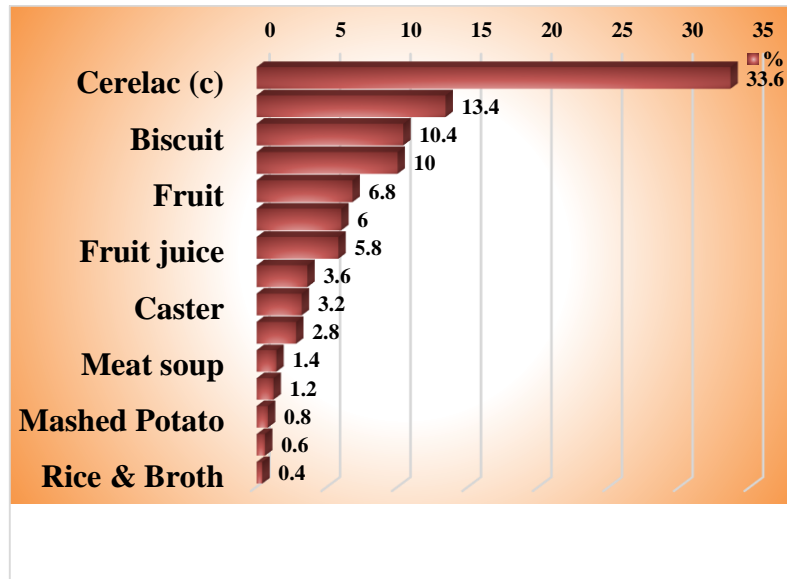


Figure 1: The initial complementary feeding items by percentage, Kut 2017, (n= 500) others: Oat Shofan, Harris: common food item mainly from wheat.

DISCUSSION:

The importance of feeding patterns and practices during first years of life cannot be overlooked, they lay foundation for food consumption, hence the current study on 500 mothers and their infants who attend PHC centers in Al-Kut City was conducted with mean age of mothers was 27.6 years (range 16-43) and 7.2% were less than 20 years, this percentage was agreed with Abdulkareem et al Baghdad 2017 (7.0%) (19) and disagreed with Almarzoki et al Hila 2015(16.5%) (20) which might give an impression about decreasing early marriage and it could be due to influence of wars.

When analyzing type of food groups offered the majority of infants received food made from cereal-based items (Rice & rice water, porridge, Potato's, Broths, Biscuits) and Cerelac in percentage of 33.8 and 33.6 respectively. Cerelac was put in separate group because it has been widely available in recent years and affordable even for low income families. Carbohydrates (Cereals-based and Cerelac) was the most common initial complementary feeding in this study, which was agreed by Batal et al. Lebanon 2010 (21) and Abdulla in Iraq (22) and Wahiba et al in Egypt (23) and K Friel et al in 2010 (24).

According to WHO recommendations, complementary food introduction should be timely (at 6th month of age), when the breastmilk/formula milk is no longer sufficient to cover all the infant's energy and nutrient

requirement (25). In this study most of the initial complementary feeding was started at 6th month (49.6%), this was agreed by Abdulkareem et al 2017 in Baghdad (60.9%) (14) and Das et al in India 2013 (66.6%) (26) and disagree with what published Batal et al Lebanon 2010 (41.6% in 4th month) (21) and Friel et al in Canada 2010 (83% in 3rd months) (24).

The study shows there is a statistically significant relation between type of complementary feeding and age at which complementary feeding was started which was agreed with Salih et al 2007 (27) and Friel et al in Canada 2010 (24). TABLE 5

When analyzing the items of complementary feeding, one can find that the eggs is least used item as initial complementary feeding regardless of other factors, and even in those minority who start with egg, it was started lately at 7th month of child age. This may due to fear of allergy (24-28).

CONCLUSION:

The majority of infants who attend primary health centers in Al-Kut city received cereal-based food (Rice & rice water, porridge, Potato's, Broths, and Biscuits) and Cerelac. Most of the mothers who attend Primary Health Centers in Al-Kut city were started the complementary feeding at 6th month of infant age.

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