Knowledge, Attitude and Practices (KAP) of Mothers toward Infant and Young Child Feeding in Primary Health Care (PHC) Centers, Erbil City

Norhan Zeki Shaker * Dr. Kareema Ahmad Hussein ** Dr. Sawsan I.I. AL-Azzawi ***

Abstract

Background and objectives: Improving infant and young child feeding practices in children birth–23 months of age is therefore critical to improved nutrition, health, development of children and, ultimately and impact child survival. **The main objective is to:** Assess knowledge, attitude and practices of mothers concerning infant and young child feeding, and to use the results as baseline for nutritional intervention programs in the future.

Subjects and methods: A survey study was carried out in (13) Primary Health Care centers in Erbil city to assess knowledge, attitude and practices of mothers concerning infant and young child feeding, and to use the results as a baseline for nutritional intervention programs in the future in a period from 2nd of January 2008 to 30th of September 2009. Purposive (non probability) sample of 1000 (mother-child pairs) were selected .

Results: The results of present study shows that the mothers have efficient practices and attitudes toward breast , formula and complementary feeding. Infant and young child feeding indicators concerning early initiation and exclusive breastfeeding were poor , among mothers attending PHC centers in Erbil.

Conclusion and Recommendation: Majority of surveyed infant and young child's feeding pattern was mixture feeding, or mixture and complementary feeding . And the feeding indicators were low among mothers in Erbil city, the investigators decided to construct an educational health program to be implemented by nurses in Primary Health Care centers in Erbil city for improving mothers knowledge, attitudes and practices of infant and young child feeding. The study recommended to revitalizing and expanding the Baby-friendly Hospital Initiative and Establishing of breastfeeding intervention programs for protection, promotion, and support of breastfeeding.

Keywords: breast feeding , formula feeding , complementary feeding, Knowledge, Attitude ,Practices.

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*MSc Pediatric Nursing .Assistant lectural .College of Nursing . Hawler Medical University
**PH.D Pediatric Nursing .Assistant Professor .College of Nursing . Hawler Medical University
***PH.D Pediatric Medican . Professor .College of Medican. Hawler Medical University

Introduction: Adequate nutrition is critical to child health and development. Growth during the first year of life is greater than at any other time after birth[1]. Breast milk provides immunologic protection against death from infectious diseases, such as diarrhea, respiratory infections, otitis media, pneumonia and meningitis [2]. Good nutrition during this period of rapid growth is vital to ensure that the infant develops both physically and mentally to the fullest potential [3]. Malnutrition has been responsible, directly or indirectly, for 60% of the 10.9 million deaths annually among children under five. [4]. In Iraq, infant mortality rate in the five years preceding 2006 was 35 per 1,000 live births and under-five mortality was 41 deaths per 1,000 live births for the same period, indicating that the majority of under-five deaths (85%) are infant deaths. In 2004 neonatal mortality rate was 63 deaths per 1,000 live births, while infant mortality rate in 2007 was 36 deaths per 1,000 live births [5,6]. In Erbil infant mortality rate was 42 deaths per 1,000 live births. Over one-fifth (21%) of children are severely or moderately stunted [5]. Nutrition interventions have been acknowledged as being among the most effective preventive actions for reducing mortality among children under the age of five years. Of these actions, exclusive breastfeeding ranks first; being estimated as having the potential to prevent 13% of all deaths in this age group while complementary feeding, water sanitation and hygiene would reduce 6% and 3% respectively [7,8].

Knowledge, attitudes and practices associated with infant and young child feeding forms an essential first step for any 'need-felt' for an intervention program designed to bring about positive behavioral change in infant health [8]. Infant feeding practices are constantly changing in Erbil city in addition, little is known about breastfeeding and their is no previous researches in Erbil concerning infant feeding and this specific information about the attitudes and practices that influence this outcome is useful to revise ongoing health program and to devise new strategies to promote optimal infant feeding and improve children health. For above mentioned reasons this study was conducted.

The aims of the study are to:

1- Assess mother's knowledge attitude, and practices concerning infant and young child feeding (breast, formula and complementary feeding) using special indicators recommended by WHO in 2008 for assessment of feeding practices.

2- Find out the relationships between mother's socio-demographic characteristics (mother age, education, occupation, place of delivery, type of delivery, family type, number of family member, number of rooms in the home, monthly income, parity) and mother's knowledge, attitude and practices of infant and young child feeding.

3- Find out the causes of breastfeeding cessation before 24 months.

4- Identify the relationship between mother's knowledge, attitude and practices of infant and young child feeding.

5- Developing health education program concerning infant and young child feeding based on mothers needs according to the study findings to be implemented in PHC centers.

Subjects and Methods: A survey study was carried out in (13) Primary Health Care centers in Erbil city to assess knowledge, attitude and practices of mothers concerning infant and young

child feeding, and to use the results as a baseline for nutritional intervention programs in the future in a period from 2nd of January 2008 to 30th of September 2009. Official permission were obtained from the Ministry of Health –Directorate of Health- Erbil. Purposive (non probability) sample of 1000 (mother-child pairs) were selected and the criteria of the sample are:

1. Mother lives in Erbil city and attends Primary Health Centers (PHC) for routine follow up of their infant and young child.
2. Infant age (birth -<2years), full term normal healthy (free from diseases and congenital malformation), non twins with birth weight of 2500 gm or greater and youngest child in the family. A questionnaire format with (85) items structured after studies and review of literatures, used in data collection consist of **four parts**. ***Part 1*** A list of (18) items covered Socio-demographic variables that included:- ***Phase 1:*** child's age, gender; ***Phase 2:*** mother's {age, education, occupation, income, obstetrical history (Para, gravid, abortion, and dead children),information of mother previous children (type of delivery, place of delivery, type of feeding during the 1st 6 months)}; ***Phase 3***: father's (education, occupation, income), number of family members and number of rooms in the house and type of child feeding . ***Part 2*** A list of (14) items testing mothers knowledge regarding infant and young child feeding (Breastfeeding, Formula feeding, Complementary feeds) . ***Part 3*** A list of (14) close ends questions that evaluated mother's attitude toward infant feeding (Breastfeeding, Formula feeding, Complementary feeds) . ***Part 4***A list of (39) close end question covered mother's practices concerning infant and young child feeding (Breastfeeding, Formula feeding, Complementary feeds), and mother's source of information. After obtaining the questionnaire's validity and reliability, data were collected by interviewing the mothers' face to face by investigator and a team from 4 interviewers (who have Bachelor in nursing science and work as clinical instructors in pediatric and fundamental nursing units of Nursing College) at child growth monitoring unit in primary health .The KAP of mother's toward IYCF questionnaire items were rated and scored according to the following patterns:
a) Two point type scale is used for rating the knowledge and practices.
b) The three point type Likert scale is used for rating the mothers attitudes .
Data of the study were ordinal according to two level scale for mothers knowledge and practices which were scored as (1, 0) for true ,false respectively ,and three levels scale for mothers attitudes as(1, 2, 3) for agree , neutral ,disagree levels respectively. The cut off point was: 50 for the both mother's knowledge and practices, and 66.66 for mother's attitudes. The Statistical Package for Social Sciences software (SPSS, version 15) was used for data processing and statistical analysis. **Resluts:**

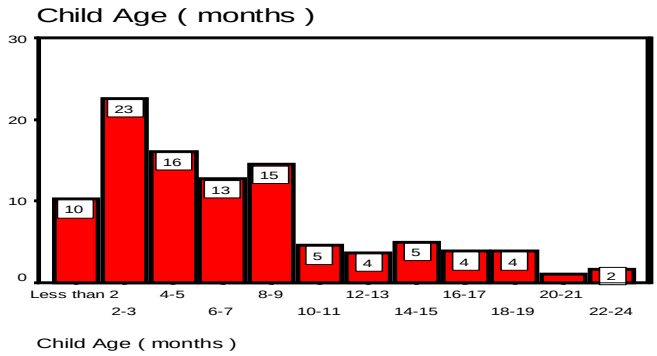

Figure 1. Distribution of age for children attending PHC centers

This figure shows that (23%) of children who attended PHC centers were (2-3) months old, (16%) were (4-5) months old and (15%) were (8-9) months old.

Table (1) Demographical characteristics of the family

Some Demographical & related variables		Frequency	Percent
Age of Mother	15 – 19	59	5.9
	20 – 24	356	35.6
	25 – 29	293	29.3
	30 – 34	170	17
	35 – 39	111	11.1
	40 – 45	11	1.1
Mother education	Illiterate	280	28
	Can read and write	172	17.2
	Primary school graduate	249	24.9
	Intermediate school graduate	122	12.2
	Secondary school graduate	36	3.6
	Institute graduate	85	8.5
	College graduate	54	5.4
	higher education	2	0.2
Mother occupation	employed	154	15.4
	Housewife	846	84.6
mother monthly income B	Insufficient	144	14.4
	Sufficient	9	0.9
	Sufficient with Exceeds	1	0.1
Mother obstetrical history dead children	0	904	90.4
	1	87	8.7
	2	9	0.9
Place of delivery	home	229	22.9
	Hospital	771	77.1
Type of delivery	normal	802	80.2
	cesarean	198	19.8
Father education	Illiterate	200	20
	Can read and write	115	11.5
	Primary school graduate	268	26.8
	Intermediate school graduate	136	13.6
	Secondary school graduate	104	10.4
	Institute graduate	75	7.5
	College graduate	98	9.8

	higher education	4	0.4
Father occupation	High professional jobs	50	5
	Lower professionals jobs	631	63.1
	Unskilled workers	319	31.9
Father monthly income B	Sufficient	313	31.3
	Insufficient	664	66.4
	Sufficient with Exceeds	23	2.3
Property	Owns a house	290	29
	House is rented	329	32.9
	House is shared with another family	381	38.1
	Total	1000	100
Family type	nuclear family	566	56.6
	extended family	428	42.8
	other type	6	0.6
Number of family member	< 4	189	18.9
	4 – 5	306	30.6
	6 – 8	279	27.9
	≥9	226	22.6
	9	9	0.9
	Total	1000	100

Table (1) shows the socio-demographic information related to mother, father and their family's property, most of mother were from age groups (20-24), (25-29) and (30-34) years old. Highest percentage of mothers were illiterate (28%), (17%) of them can read and write and (25%) were primary school graduates. Distribution of mother with respect to their Work most of mothers (84.6%) were not working (housewives).Concerning mothers obstetrical history the highest percent (46.4%) of mothers who attended PHC centers had only one child. The highest percentage of fathers (26.8%) were primary school graduates group, concerning father occupational statuses most of them (63.1%) were working in low professional jobs, and (66.4%) of employed mothers think that they had insufficient incomes. Distribution of families with respect to property indicates that the (38.1%) of the families live in houses shared with aonther family, (32.9%) live in rented house and (29%) owns houses. Regarding their family type clarifies that (56.6%) of the families were nuclear family, (43%) were extended families and (6%) were other type of families. (18.9%) of families consisted of < 4 members, (30.6%) of families consisted from 4 -5 members, 279 (27.9%) of families consisted from 6-8 family member and (22.6%) of families consisted from > 9 family members .

Table (2) Causes of Breastfeeding Stopping

Nursing problem	Frequenc n= 222	Percent
Nipple or breast problem	**16**	**7.2**
Insufficient milk	**78**	**35.1**
Child refused	**66**	**29.7**
Child's health problem	**12**	**5.4**
Mother's health problem	**20**	**9.0**
Mother's dislike	**18**	**8.1**
Pregnancy	**12**	**5.4**

This Table shows that of mothers 222 (23.4%) of breastfed mothers stopped breast feeding before 24months of child age from them:- (7.2%) were stopped for having nipple or breast problem, (35.1%) were stopped for having insufficient milk, (29.7%) for child refusal, (9 %) for mother's health problem, (8.1%) of mother's dislike breastfeeding and (5.4%) of them for having pregnancy.

Table (3): Simple Correlation Coefficients between the main three criteria (Breast , Formula , Complementary) feeding for the Assessment of Mothers (KAP)Toward Infant and Young Child Feeding

Assessment of Mothers (KAP)		KFF	KCF	ABF	AFF	ACF	PBF	PFF	PCF
Correlation	KBF	0.086	0.102	0.246	- 0.128	0.006	0.157	0.184	0.092
	KFF		0.051	0.076	0.105	0.277	0.107	0.173	0.069
	KCF			0.127	0.065	- 0.019	0.147	0.165	0.020
	ABF				0.054	0.134	0.148	0.230	0.033
	AFF					0.181	0.053	- 0.070	0.027
	ACF						- 0.017	0.070	0.001
	PBF							0.089	0.186
	PFF								0.015
Sig. (1-tailed)	KBF	0.090	0.057	0.000	0.023	0.464	0.007	0.002	0.077
	KFF		0.213	0.119	0.052	0.000	0.048	0.003	0.142
	KCF			0.024	0.158	0.384	0.011	0.005	0.377
	ABF				0.200	0.019	0.010	0.000	0.306
	AFF					0.002	0.206	0.137	0.336
	ACF						0.397	0.138	0.495
	PBF							0.083	0.002
	PFF								0.405

Table (3): presents the correlation matrix for testing the relationship among mother's knowledge, attitude and practices through three feeding criteria, and indicates presence of significant relation between KBF and (ABF,AFF,PBF,PFF)

Table(4) : Creating Criteria for Mothers (KAP) toward infant and young child feeding by extraction rotated components

Rotated Component Matrix [a]	Components			
Main's Criteria of the KAP studied	1	2	3	4
Knowledge - Breast Feeding	0.665			
Knowledge - Formula Feeding		0.689		
Knowledge - Complementary Feeding				0.747
Attitudes - Breast Feeding	0.572			
Attitudes - Formula Feeding				0.596
Attitudes - Complementary Feeding		0.798		
Practices - Breast Feeding			0.658	
Practices - Formula Feeding	0.678			
Practices - Complementary Feeding			0.821	
Covariance Explained	19.959	14.785	12.463	11.266
Suggested names	KAP (BBF)	KA (FC)	PP (BC)	KA (CF)

(a) Rotation converged in 9 iterations. Rotation Method: Varimax with Kaiser Normalization. Extraction Method: Principal Component Analysis. Table (4) indicates that the nine factor of child feeding have been created to construct a concepts for the first time for mothers KAP of infant and young child feeding the concepts are (Natural feeding) for knowledge, and practices correlation; (Artificial Feeding) for knowledge and Attitude correlation; (Natural feeding)for practices correlation; and Artificial Feeding Attitudes.

Table (5) Indicators of Infant and Young Child Feeding Practices in PHC Centers in Erbil

	Indicator	N. of target children	Total N. of children in this age	Indicator Rate
1	**Early initiation of breastfeeding**	**229**	**946**	**24.207 %**
2	a. Exclusive breastfeeding at 0-1.9 months of age	**21**	**103**	**20.388 %**
	b. Exclusive breastfeeding at 2-3.9 months of age	**14**	**226**	**6.194 %**
	c. Exclusive breastfeeding at 4-5.9 months of age	**6**	**161**	**3.726 %**
	d. Exclusive breastfeeding under 6 months (0-.9)months	**41**	**490**	**8.367 %**
3	**Predominant breastfeeding under 6 months**	**51**	**490**	**10.408 %**
4	**Continued breastfeeding at 1 year:**	**61**	**87**	**70.115 %**
5	**Continued breastfeeding at 2 year:**	**9**	**27**	**33.333 %**
6	**Children ever breastfed**	**65**	**1000**	**5.4 %**
7	**Introduction of solid, semi-solid or soft foods**	**55**	**180**	**30.556 %**
8	**Minimum meal frequency**	**91**	**510**	**17.843 %**

Table (5) shows that (41.6%) of mothers received information concerning breast feeding or complementary feeding from physician, (41.9%) of mothers received information from physician in the private clinic ,(17.2%) of mothers received information concerning breast feeding or complementary feeding from nurse ,(54.7%) of mothers received information from nurse in the PHC centers and (36.1%) of mothers receive information from their mothers or mothers in law.

Table (6): Correlations between Mothers (Knowledge ,Attitudes and practices) concerning Infant and Young Child Feeding

		Attitudes	Practices
Correlation	Knowledge	0.114	0.238
	Attitudes		0.091
Sig. (1-tailed)	Knowledge	0.000	0.000
	Attitudes		0.002

Information presents in Table (6) depicts the high significant correlation among mothers Knowledge ,Attitudes and practices.

Discussion: Majority of the children attending PHC centers were less than 10 months old which is the age when child receive routine vaccinations (figure 1).Female to male ratio in this study was 1.1: 1 .Table (1) Majority of mothers were between (20-34) years old which is expected as the reproductive age in between (25-35) years . Mothers from age group from (30-34) year were more knowledgeable about child feeding, had better attitudes toward infant and young child feeding, while mothers ages had high-significant relation with mothers practices of infant and young child feeding this is in contrast to what found by Baisch *et al* who conducted a

study to assess breastfeeding attitudes, and he founded that there is no differences in attitudes by age[9].

The type of child's feeding might be affected by the socioeconomic status of the family including the education level, occupation and monthly income of mother and father, in this study. The highest percentages of mothers were housewives, and the working mothers were not satisfied with their monthly income ***(Table 1).*** Mothers occupation had high significant relation with mothers knowledge but non significant relation with mothers attitudes and practices .While Earland stated that Maternal employment does influence infant feeding practices and consequently may have repercussions on future health. Mother's low educational level makes them unable to understand the existent educational information in posters and magazines and they need direct health education from health facilities[10].

About quarter of the mothers stopped breastfeeding , more than half of them stopped before 3months of child age which is contrary to the WHO's recommendations of infant feeding in 2003[11]. Al-Jassir *et al* Conducted a study in Saudia Arabia ,they found that 76.1% had introduced bottle-feeding by 3 months (48.3% cited insufficient milk as the reason for introducing the bottle)[12]. Also in current study ***(Table 2)*** showed that the main reason for early weaning which was insufficient mother's milk which is also confirmed by Al-Abdalli and Abdul Ameer *et al* they found that nearly 35% believed that breast milk was not enough for their infants[13,14]. The rotated component matrix consists from 9 factors , according to their eigenvalues. A new concept developed for first time as we know regarding KAP of infant and young child feeding the concepts suggested as (Natural feeding) for knowledge, Attitude and practices correlation; (Artificial Feeding) for knowledge and Attitude correlation and again (Natural feeding) for practices ***(Table 3).*** As majority of mothers were started breastfeeding but for mother's lack of confidence they supplemented breastfeeding with other foods and gradually the breastmilk supply decrease and child stopped breastfeeding and turn to artificial feeding in the same time early starting of complementary food introduction***(Table 4)*** .

The present study finding regarding mothers delay in initiation of breastfeeding ***(Table 5)*** is in agreement with findings of MICS in 2006 [5] which indicated that only (31%) of mothers in Iraq started breastfeeding within one hour of birth, and The same thing concerning continued breastfeeding were found by Khassawneh [15] which revealed that two thirds of Jordanian women were breastfeeding for more than one year. while continued breastfeeding at 1 year was good, minimum meal frequency rate was poor, ever breast feed was good among mothers in Erbil city. We can say that early breastfeeding initiation and exclusive breastfeeding were poor, while continued breastfeeding at 1 year was good, minimum meal frequency rate was poor, ever breast feed was good among mothers in Erbil city ***(Table 6).***

Conclusion : The results of servy study conclued that most of mothers were illiterate or primary school graduate; housewives ; fathers were low professional workers and majority of mothers and fathers were unsatisfied with their monthly income, and don't own houses, more than half of mothers were a member of nuclear family. Majority of surveyed infant and young child's feeding pattern was mixture feeding, or mixture and complementary feeding.

More than half of mothers stopped breastfeeding before three months of child age, for having insufficient milk, for child refusal, mother health problem and mother dislike. As mothers had deficient in KAP's of infant and young child feeding. And the feeding indicators were low among mothers in Erbil city the investigator decided to construct an educational health program to be implemented by nurses in Primary Health Care centers in Erbil city for improving mothers KAP's of infant and young child feeding.

Recommendations : the present study recommended a revitalizing and expanding the Baby-friendly Hospital Initiative and Establishing of breastfeeding intervention programs for protection, promotion, and support of breastfeeding. This can be maintained through the following breastfeeding intervention programs: maternity care practices, support forb in the workplace, peer support, media and social marketing,and public acceptance.

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