Original Paper

Patterns of Infant Feeding and Factors Associated with Them among Sample of Mothers in Kerbala City.

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Abstract

Background: Breastfeeding improves the health, development, and survival of all children. As well as, saving life and improving the health of mothers. Further, it reduces economic burden on families and the community.
Objectives: To identify patterns of infant feeding including breastfeeding. To assess the initiation of breastfeeding. And to recognize factors associated with these patterns.
Subjects and methods: A cross-sectional study was conducted in Kerbala city. A random sample of mothers of infants aged 1 to 12 months was selected and interviewed. Mothers attended two primary health care centers and outpatient clinics of Kerbala Teaching Hospital for Children in Kerbala city for caring of their infants were considered eligible for the study. Interviews were carried out during period January 2 – June 30, 2015.
Results: Total of 317 mothers was enrolled in the study, (59%) of their babies were males. Mothers age range from (15-42) years with a mean and standard deviation age of 25 ± 5.98 years. Breastfeeding was the predominant feeding type (62%). Breastfeeding was significantly associated with younger maternal age, being vaginally delivered, being multipara and encouraging husband role. The initiation of breastfeeding was in the first hour in 73% of the mothers. And breastfeeding initiation within the first hour was negatively associated with being delivered by Caesarean section. While the main source of mother information regarding feeding was the family.
Conclusion: Breastfeeding was the predominant type of feeding. Choosing and continuation of breastfeeding was positively associated with younger maternal age, normal vaginal delivery, multiparty and husband support.

Keywords: *Breastfeeding; Initiation of breastfeeding; Infant nutrition; Bottle feeding, complementary feeding.*

Introduction

Breastfeeding is the natural way of providing infants with the nutrients required for growth and development. Benefits of breastfeeding for infant and mother as well as the community are well recognized. Further, it's of increasing importance in low-income and middle-income countries. These benefits extend to adulthood and could be nutritional, developmental, emotional, immunological, social, economic, and environmental benefits [(1-4)].

World Health Organization (WHO), and United Nations Children's Fund (UNICEF) recommends early initiation of breastfeeding within the first hour of birth. This early initiation has important consequences on the biological and

emotional health of the newborn; It reduces neonatal mortality as well as improving mother health by the release of oxytocin which causes uterine contraction so reduces maternal blood loss. As well as psychological benefits for both neonates and mothers [5-7].

According to WHO and UNICEF "Exclusive breastfeeding" is explained as "the infant receives only breast milk, no other liquids or solids are given – not even water – with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines". Exclusive breastfeeding is recommended for the first 6 months of life, and then complementary feeding should be started. Whereas, breastfeeding should continue for 2 years age or beyond [1,5,8].

Non breastfed children are at increased risk for several ill health, and being at lower chances for survival in comparison to breastfed children [1,9,10]. Unfortunately, less than 40% of infants younger than 6 months worldwide are exclusively breastfed [3,5].

Breastfeeding selection as well as various attitudes related to feeding practices including initiation of breastfeeding, duration of feeding, exclusive breastfeeding, adding formula milk, starting complementary feeding, and others can vary greatly within and between communities. Different familial factors appear to be associated with these choices including the mother's age, parity, education, economic status, and occupation. Further, some studies reported the association with the father's characteristics. Social awareness and beliefs as well as, the health system and policy for supporting breastfeeding at home and workplaces can greatly affect mothers' choices in regards to feeding [3,4,11-13].

This study aims to identify patterns of infant feeding including breastfeeding and bottle feeding. To assess the initiation of breastfeeding. And to recognize factors associated with these patterns and the source for mother information regarding feeding.

Subjects and methods

A cross-sectional study was conducted in Kerbala city. A random sample of 317 mothers of infants aged one month to 12 months was selected and interviewed. Mothers who attended Al-Mulhak primary health care (PHCC), Al-Iskan PHCC and outpatient or consultation clinics of Kerbala Teaching hospital for children in Kerbala city for caring of their infants were considered eligible for study. Mothers were selected on a systematic random sampling approach by selecting every fourth mother from them. Data collection was carried out during period from 2nd of January to 30th of June 2015.

Severely ill baby and infants who genetically not fit for breast milk as phenylketonuria were excluded from the study.

A special questionnaire developed for the purpose of study after a thorough review of the literature, and it was reviewed by two experts in community medicine and was tested by a pilot study that includes 18 mothers. Based on pilot results minor modifications needed. The questionnaire covers socio-demographic question about mother and father, mode of delivery whether normal vaginal delivery (NVD) or caesarian section (C/S), type of feeding, time of initiation of breastfeeding, any fluid other than breast milk or food given to the infant. The source of her information, husband role in breastfeeding. It includes both quantitative and qualitative data.

Ethical and administrative approval on study obtained from Arab Board for Health Specialization in Iraq and from the research ethics committee in Kerbala Health Directorate. Further, a verbal consent was taken from each mother prior to interview, after a brief explanation on the objectives of study.

Data were entered and analyzed, using statistical package for social science program (SPSS software version 22). Mean ± standard deviation (SD) were used for quantitative variables, numbers (N) and percentage (%) were used for qualitative

variables. Chi-square ($\chi 2$) test was used to test the associations between the variables. The association was considered to be statistically significant when the p-value was found to be less than 0.05.

Results

Total of the 317 mothers enrolled in the study, 187 (59%) of their infant were males. Mothers age ranged from (15-42) years with mean and SD of 25 ± 5.98 years. Breastfeeding was the predominant type of feeding as 195 (62%) were breastfed as shown in Figure 1.

Table (1) shows the relation of some maternal characteristic with the type of feeding where a significant statistical association appeared between breastfeeding and younger maternal age, NVD, higher parity and positive husband role. While there was no association with infant gender, level of education and work status for both parents.

Mothers who initiate breast feeding within the first hour forms 73% of the sample as shown in Fig. (2).

Moreover the early initiation of breastfeeding was inversely related with delivery by C/S as shown in table 2.

Total number of mothers gave prelacteal fluid were 111(35%) and the most common solution was water and sugar 70(63%) followed by mudhga (a traditional solution) 28 (25%) and some few other fluids.

The main source of mother's information on the different types of infant feeding comes from the family members as shown in figure 3.

Among those who had started complementary food 99 (71%) had started at age of 4-6 months while 22% had started complementary feeding at earlier age as shown in Figure 4.

Discussion

Iraq had joined the International Code of Marketing of Breast-milk Substitutes and it was approved by the Iraqi Parliament in 2015 [14]. Unfortunately, on ground the implementation of its items and instructions is still weak and some advertisement for breast milk substitutes is present in streets or markets. Moreover, some physician and pediatricians still unnecessarily recommend formula milk for infants for a reason or another. However, the success of breastfeeding depends on multiple factors, which could be related to mother, infant and supportive environment.

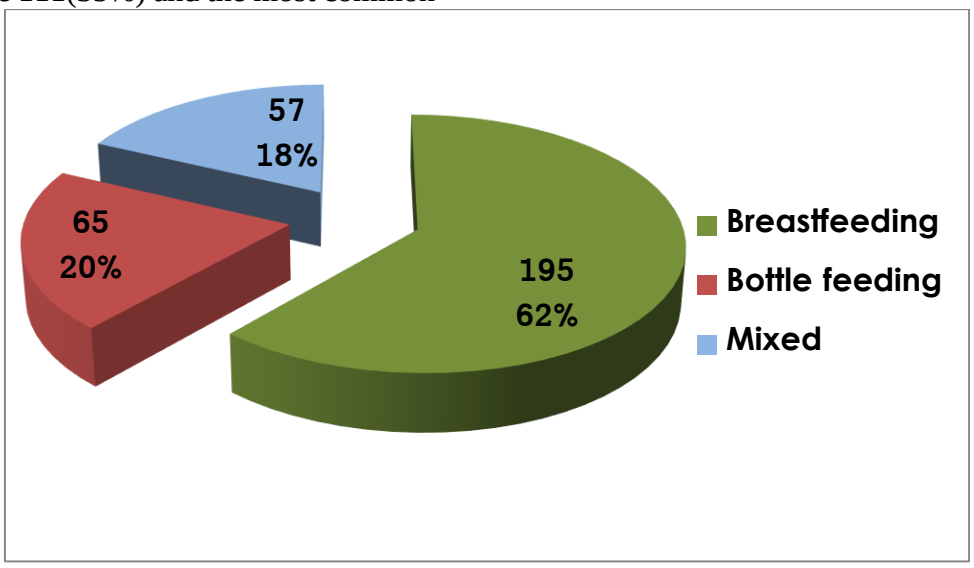

Figure 1. Types of feeding prevalence among mothers' sample

Table 1. Relation of some characteristics of the mothers with the type of feeding

Variable		Breast-feeding N (%) 195 (62%)	Bottle feeding N (%) 65 (20%)	Mixed feeding N (%) 57 (18%)	Total N (%) 317	P value
Age of mother/ years	< 20	38(75%)	10(19%)	3(6%)	51(16%)	0.002
	20-29	114(63%)	35(19%)	33(18%)	182(57%)	
	≥ 30	43(51%)	20(24%)	21(25%)	84(27%)	
Gender of infants	Male	116(62%)	36(19%)	35(19%)	187(59%)	0.776
	Female	79(61%)	29(22%)	22(17%)	130(41%)	
Type of delivery	NVD	151(66%)	45(20%)	32(14%)	228(72%)	0.006
	C/S	44(49%)	20(22%)	25(29%)	89(28%)	
Maternal parity	Primi	46(51%)	30(34%)	13(15%)	89(28%)	0.001
	Multi	149(65%)	35(15%)	44(20%)	228(72%)	
Husband Education	< 6 years	58(52%)	31(28%)	23(20%)	112(35%)	0.168
	6-8 years	75(70%)	18(16%)	15(14%)	108(34%)	
	9-12 years	43(65%)	11(16%)	12(19%)	66(21%)	
	> 12 years	19(61%)	5(16%)	7(23%)	31(9%)	
Mother education	< 6 years	83(59%)	31(22%)	26(19%)	140(44%)	0.375
	6-8 years	73(67%)	16(15%)	19(18%)	108(34%)	
	9-12 years	29(62%)	12(26%)	6(12%)	47(14%)	
	> 12 years	10(46%)	6(27%)	6(27%)	22(28%)	
Husband work	Jobless	11(64%)	2(12%)	4(24%)	17(5%)	0.404
	Employee	52(55%)	19(20%)	23(25%)	94(29%)	
	Free work	132(64%)	44(21%)	30(15%)	206(66%)	
Mother work	Housewife	179(61%)	62(21%)	52(18%)	293(92%)	0.868
	Employee	13(67%)	2(11%)	4(22%)	19(6%)	
	Student	3(60%)	1(20%)	1(20%)	5(2%)	
Husband role	No role	69(48%)	45(31%)	29(21%)	143(45%)	< 0.001
	Encourage	126(74%)	20(11%)	28(15%)	174(55%)	

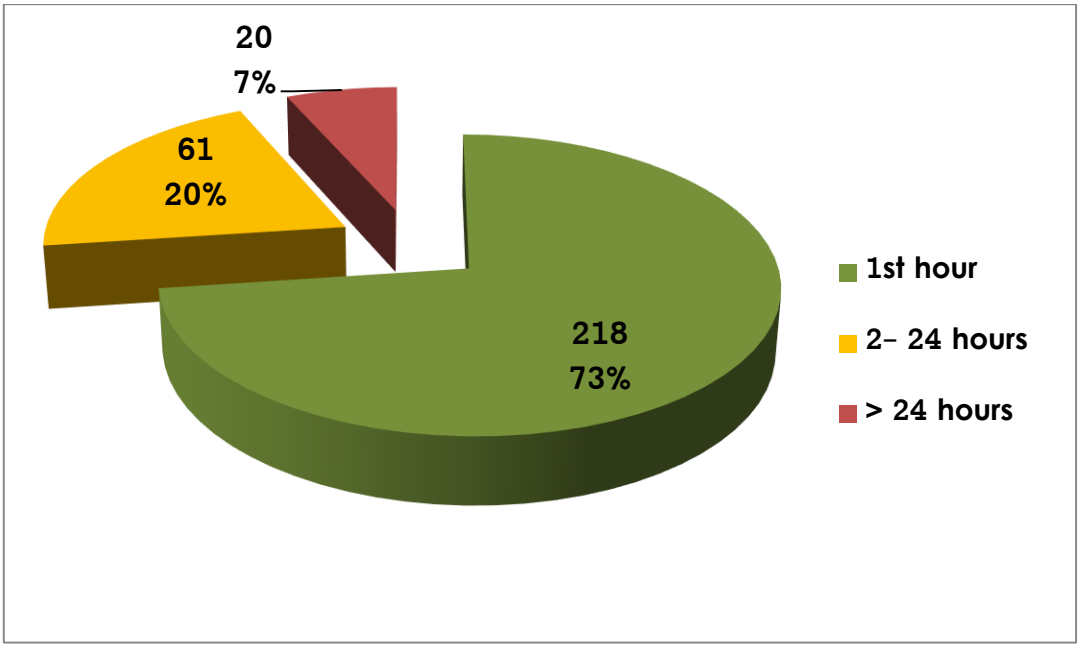

Figure 2. Distribution of infants according to time of initiation of breastfeeding

Table 2. Relation of some characteristics of mothers with timing of breastfeeding initiation

Variable	Time of initiation of 1st feeding (hours)			Total	P value
	1st	2-24	>24		
Mother age (years)					
< 20	36 (74%)	10 (20%)	3 (6%)	49	
20 – 29	128 (74%)	32 (19%)	12 (7%)	172	0.631
≥ 30	54 (69%)	19 (24%)	5 (7%)	78	
Type of delivery					
NVD	175 (80%)	28 (13%)	14 (7%)	217	< 0.001
C/S	43 (53%)	33 (40%)	6 (7%)	82	
Maternal parity					
Primi	60 (76%)	12 (15%)	7 (9%)	79	0.313
Multi	158 (72%)	49 (22%)	13 (6%)	220	

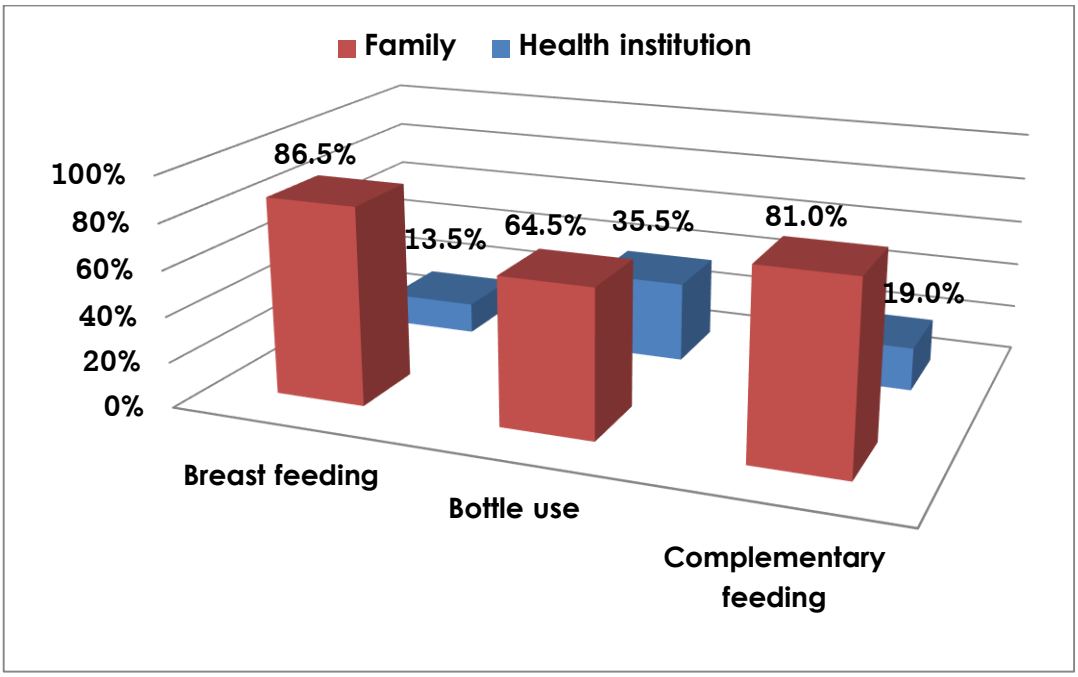

Figure 3. Source of mother information in infant feeding

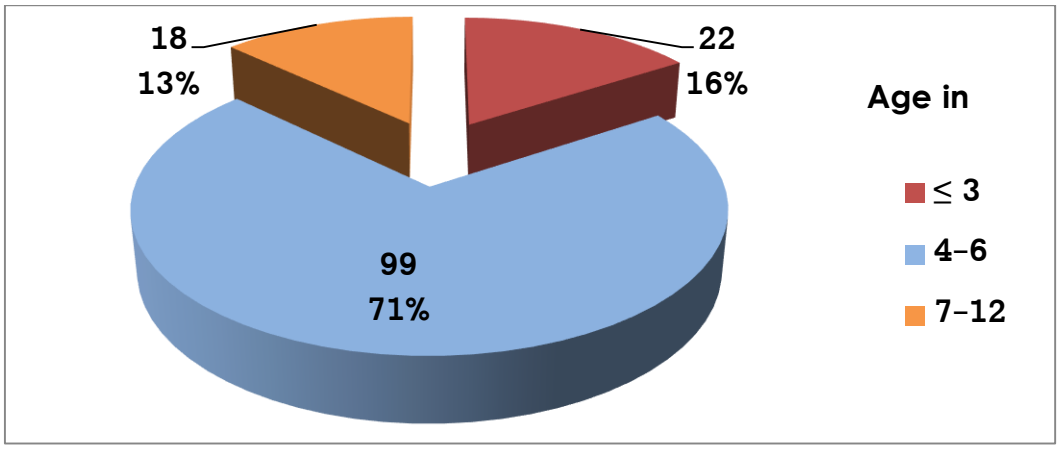

Figure 4. The distribution of infants according to the age of starting complementary feeding. * (N= 121)

This study showed that breastfeeding was the predominant type of feeding with 62% that is higher than the study of Fawzy and AbdulRazzak 2006 conducted in the same hospital in Kerbala [15]. The increase in rate may be related to the establishment of the Baby Friendly Hospital Policy in Kerbala Teaching Hospital for Children in 2009 and the success of educational programs followed since. Further, it's higher than a study conducted in Baghdad, while it was slightly lower than other study conducted in Diwaniya city in Iraq [16,17].

Breastfeeding was significantly associated with younger age group. This disagreed with other studies [18-20]. The mode of delivery was significantly associated with the type of feeding and timing of initiation of breastfeeding. As mothers who delivered by NVD appeared more likely to breastfeed their babies than those who delivered by caesarean section(C/S) and also to initiate breast feeding earlier within the 1st hour after delivery. These results are agreed with other studies [21-23]. This could be related to that C/S was associated with more complication to mothers' and taking time to recover from anesthesia that leads to the delay in breastfeeding initiation or even the child might be given formula milk. And this highlights that further efforts and educational program to target those give birth by C/S, whereas C/S represents more than 30% of total births in Iraq [24].

Breastfeeding was also associated with maternal parity as multiparous women showed higher rate of breastfeeding than primi mothers. This could be attributed to that multiparous mothers had more experience in nursing baby compared to new mothers. Similar results were reported by other researchers [21,25].

Majority of mothers (72%) initiate their newborn feeding within the first hour after delivery. This percentage was much higher than that reported in a study in Baghdad [26]. Anyhow still there are a lot of neonates who started feeding lately that need to be targeted also with special concern for those delivers by C/S as they appear inversely related with both breastfeeding and the early initiation of breast feeding. However, the prevalence of breastfeeding initiation within the first hour of life varies widely worldwide [27].

On the other hand, 35% of neonates were given a prelacteal fluid and the most common type was water and sugar. Similar figures were reported by Fawzi and Abdul-Razak 2008 [15]. The causes of giving such fluid may be related to a common false belief in Iraq hold by the mothers and mostly advised by elder women such as the grandmothers; they may think that it reduces the risk of jaundice or it helps to sooth the newborn while his mother gets some rest after labor.

Majority of husbands were encouraging for their wives to breastfeeding and that was positively associated with breastfeeding rates for their infants. This result is agreed with other studies [28,29]. And this raises the importance of the fathers and family members' role in supporting and encouraging mothers on breastfeeding. This is so important in our community as it appeared that 86.5% of mother's got their information's from the family especially those accompanying the mother post labor. While the health institution role was minor as only (13.5%). and this may reflects a defect in health education and counseling of the mothers during antenatal visits. Similar results were reported by other researchers [26,30].

Though majority (71%) of infants in this survey had started receiving complementary food at an appropriate age, but there was 16% who started at an earlier age as early as within the first month for some that need to be considered also.

Conclusion

Breastfeeding was the predominant type of feeding among the sample, breastfeeding was more among young, multiparous, those underwent NVD and among those with encouraging husband role. Majority of mothers had initiated of breastfeeding

within the first hour, and the early initiation was negatively associated with C/S delivery. Still, there is a percentage that cannot be underestimated of the mothers who started complementary feeding early and those who give water and sugar solutions to their babies. This was perhaps related to the traditional false information and believes as majority of mothers information about feeding comes from the family and community not from the health sector.

These results highlights the need for more efforts and health education programs on child nutrition and lactation targeting pregnant women throughout antenatal care visits and continue after labour. Further, special efforts needed to those underwent caesarian section at maternity hospitals.

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