

Original Article

Factors Underlying Bottle-feeding Practice in Kuwait (2001)

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ABSTRACT

Objective: To explore the factors underlying the practice of bottle-feeding among mothers with children less than two years old in Ahmadi region, Kuwait in the year 2001.

Method: A descriptive study was carried out in Ahmadi governorate. Data was collected from 361 mothers whose babies were less than two years old and bottle fed. The interviewed mothers were selected from labor rooms and the post-natal ward in Adan hospital and from preventive health centers in Ahmadi governorate.

Results: The rate of bottle-feeding practices in Ahmadi region was found to be high among Kuwaiti mothers and those with high family income. The rate of bottle-feeding

practice increases among mothers with infants older than four months due to early weaning. The main reasons for bottle-feeding practice were insufficient breast milk, the need to go back to work and using contraceptive pills. Also pediatricians (child health doctor) were found to be the main persons prescribing infant formula for mothers. **Conclusion:** The rate of bottle-feeding practice in Ahmadi region increases among Kuwaiti mothers who have high family income and who reported that they have insufficient milk. Health education programs to promote breast-feeding are necessary for mothers and health care providers.

KEYWORDS: bottle-feeding, infant feeding, maternal factors

INTRODUCTION

Breast-feeding is the natural, physiological way of feeding infants and young children^[1]. Human milk is the natural milk made especially for human infants, while most formulas made from cow's milk or soya beans are only superficially similar. Advertising which states otherwise is misleading. Breast milk is the only food the baby needs until at least four months of age and most babies do very well on breast milk alone for six months or more^[2,3]. There is no advantage of adding other sorts of foods or milk to breast milk before 4-6 months, except under unusual or extraordinary circumstances^[3,4]. Despite increasing medical research showing the benefits of breast feeding for both mothers and babies^[5-9], many women opt to bottle-feed their infants occasionally or routinely. Bottle-feeding is associated with many medical risks: cow-milk allergy and intolerance^[10], increased risk of respiratory and gastro intestinal diseases^[11-14], high incidence of otitis media^[15] and oral malocclusion and dental caries^[16,17].

Many studies were carried out in different parts of the world to investigate factors influencing the infant feeding practice^[18-21]. Maternal factors associated with bottle-feeding practice were:

younger age^[19,22], employment and using estrogen containing oral contraceptive pills^[18,20]. Other reported factors were embarrassment^[23], availability of supplementary formula^[19], early introduction of food and water^[24] and negative attitudes of doctors and nurses^[25]. Most studies were conducted to identify feeding practices of young children in Kuwait^[21,26-30]. In 2001, the rate of breast-feeding in Ahmadi governorate was 60.8% among infants below four months of age. 22.6% of them had mixed feeding (breast fed and bottle fed)^[30]. This study was conducted to explore the factors underlying bottle feeding practice in Kuwait among mothers with children less than two years old in Ahmadi region in the year of 2001.

MATERIAL AND METHODS

Study Population:

Data was collected from 361 mothers with infants less than two years old and bottle-fed at Adan hospital and the Primary Health Care Center. This study is part of a larger study with 1200 mothers in Ahmadi Governorate concerning breast and bottle feeding conducted between September 2000 and February 2001. The interviewed mothers were selected from labor rooms and the post-natal ward in Adan hospital. Others were those attending

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Table 1: Distribution of infant bottle feeding according to background characteristic, in Ahmadi region, Kuwait

	Total Sample N=1200		Bottle-fed N=361		Significance
	n	%	n	%	
Mother's age (years)					
< 20	90	7.5	25	27.78	$\chi^2=1.519$
20 to < 30	626	52.2	198	31.63	
30 to < 40	443	36.9	126	28.44	
40	41	3.4	12	29.27	p=0.678
Mother's education					
Not educated	57	4.8	11	19.30	$\chi^2=3.870$
Primary and intermediate school	387	32.3	124	32.04	
Secondary and university	756	63	226	29.89	p=0.144
Family income (KD)					
< 400	361	30.1	75	20.78	$\chi^2=28.927$
> 400 to 600	444	37.0	133	29.95	
> 600	395	32.9	153	38.73	
Birth order					
1	241	20.1	60	24.90	$\chi^2=4.520$
2 - 3	476	39.7	144	30.25	
4 - 5	315	26.3	101	32.06	
6+	168	14.0	56	33.33	
Nationality					
K	848	70.7	286	33.73	$\chi^2=18.242$
NK	352	29.3	75	21.31	
Sex of the baby					
Male	640	53.3	199	31.09	$\chi^2=0.666$
Female	560	46.7	162	28.93	
Age of the baby					
< 4 months	602	50.2	100	16.61	$\chi^2=104.240$
> 4 - 2 Y	598	49.8	261	43.65	
Total	1200		361	30.08	p=0.000*

* Significant

Preventive Health Centers for vaccinating their children. Selection of subjects was done systematically by interviewing every third mother. A consent for participation was obtained verbally. The interviews were carried out by a well-trained group of nurses. Only 1% of the mothers refused to be interviewed.

The Study Tools:

The World Health Organization (WHO) indicators for assessing infant feeding practice were used^[31]. A bottle-fed child is one who receives fluids or semisolid food from a bottle with a teat. The questionnaire included questions on socio-economic characteristics of infants (age, sex, mother's age, education and family income). The method of feeding practice (breast fed or bottle fed) and some characteristics of bottle feeding practice (first feed, type of feed, who prescribed the feed and, lastly, answers to open questions about the reason for choosing bottle feeding practice) were also recorded. A one-month pilot study on 50 subjects preceded the actual work. During the pilot study, questionnaire and interviewing teams were assessed and modified accordingly.

Table 2: Distribution of bottle-fed children according to the type of milk

Type of Milk	n	%
Fresh milk	13	8.6
Powder milk	52	14.4
Baby formula	214	59.3
Special formula	82	22.7
Total	361	100

Analysis:

Statistical analysis was done using the SPSS program. Descriptive analyses included frequencies and percentages. Associations between categorical variables were tested by the chi-square test. All tests were assessed at the 5% level of significance.

RESULTS

Sample Characteristics:

Table 1 shows the distribution of infant bottle-feeding according to background characteristics. The results showed that half (52%) of the mothers in the sample were in the age group of 20 to less than 30 years. More than two thirds (71%) of the mothers were Kuwaiti and a little more than a third (37%) of the sample reported to have family income ranging from 400 to 600 Kuwaiti Dinars (KD) per month (KD 1 = US \$3.30). Bottle-feeding was found to be significantly associated with the mother's nationality and family income. One third (34%) of Kuwaiti mothers practiced bottle-feeding as compared to one fifth (21%) non-Kuwaitis. Also, over two thirds (68%) of mothers with family income over 400 KD practiced bottle-feeding. In addition, the results showed that 44% of mothers with children older than four months practiced bottle-feeding.

Table 2 shows the distribution of bottle-feeding practice according to the type of milk. Baby formula is the common milk used (59%) followed by special formula, which is mainly prescribed by pediatricians in polyclinics or by pediatricians in the hospital.

Table 3 shows that almost half of the infants (39%) in the study were prescribed bottle-feeding by a pediatrician (child health doctor) in a hospital, and one third (29%) of the infants were bottle-fed by the mother's choice.

Table 4 shows that insufficient milk was the most common reason cited (44%). The second reason was the need to go back to work (24%). Other reasons given for bottle-feeding were maternal disease (10%) and the use of oral contraceptive pills (10%).

DISCUSSION

The study results showed a higher rate of bottle-feeding practice among Kuwaiti mothers than non-

Table 3: Distribution of bottle-fed children according to the person who prescribed the milk

	Bottle-feeding Practice Yes (N=361)	
	n	%
Physician in Polyclinic	64	17.73
Pediatrician in Hospital	140	38.78
Nurse in Polyclinic	1	0.28
Nurse in Hospital	2	0.55
Family member	49	13.57
Herself	105	29.09
Total	361	100

Kuwaiti. These findings support previous research^[32-38] which shows infant feeding choices can differ by ethnicity. Baisch *et al* found that adult white women practiced breast-feeding more than adult black women^[38]. Similar to other studies^[21,30], mothers from high-income families were more likely to practice bottle-feeding. Such results could be explained by the fact that Kuwaiti women have gone through fast westernization in their lifestyle, especially in the ways of using modern technology, due to the oil revenue. However, they did not catch up to recent western civilization in relation to a healthy lifestyle including breast-feeding^[30]. Many studies^[39] showed that women practiced less breast-feeding after the baby reached four months of age for reasons such as early weaning. Similarly the rate of bottle-feeding increased with the increase in child age. The reason is that almost all mothers began solid foods before the infant was four months old and discontinued breast-feeding. These observations highlight ignorance about basic infant feeding practices among the mothers. Health education programs should therefore focus on encouraging mothers to exclusively breast-feed their babies up to the age of six months. The finding of this study showed that physicians were the ones who commonly prescribed infant formula. Health care providers were cited as sources of encouragement of bottle-feeding and discouragement for breast-feeding in other studies^[25,34]. The negative attitude of the pediatricians towards breast-feeding could be explained by the fact that many schools of medicine failed to include breast-feeding in their curricula. Also, many health professionals are exposed to advertisement for infant formula. Pediatricians are required to have an educational program to promote breast-feeding among mothers^[38]. Similar to other studies^[22,26,34,39], the main reasons for bottle-feeding in this study were insufficient milk and the need to go back to work. Many Kuwaiti women believe that they do not have sufficient milk for their babies, especially in the first week after labor. This can be explained by the lack of awareness among these women about the oxytocin reflex

Table 4: Reasons given by mothers regarding the choice of bottle-feeding practice

Causes	Bottle-feeding (N=361)	
	n	%
Insufficient Milk	157	43.49
Going to work	85	23.55
Affect her body image	18	4.97
Body gets fat with bottle feed	7	1.94
Infant's disease	24	6.65
Maternal disease	35	9.70
Oral contraceptive pills	35	9.70
Total	361	100

mechanism that increases milk production due to the infant continuously sucking on the breast^[1]. In addition, working mothers believe that separation from their infants for a long period of time is an obstacle for breast-feeding. Educating mothers about the breast feeding mechanism, milk production and showing them how to squeeze their breast milk should be the main focus for health education programs for pregnant women. This will encourage breast-feeding and reduce bottle-feeding with the support of baby-friendly hospital initiative such as that started in Ahmadi Region in 1992. The need for lactation consultants to advice mothers in the immediate postpartum period to encourage breast-feeding is recommended.

LIMITATION OF STUDY

Limiting the study to Ahmadi Governorate will affect generalization of the study results to all women in Kuwait. Also, recall bias affects the accuracy of the results. The study design (cross-sectional) will not explain a causal relationship between any of the factors involved in the study. Despite the fact that our sample was chosen systematically, a high proportion of the mothers had university education. Thus further research is needed to confirm the findings of this study.

CONCLUSION

The results of this study showed that the mothers in Ahmadi region practiced bottle-feeding due to their lack of experience and lack of awareness on the breast milk production mechanism. At the same time, pediatricians' prescription of infant formula and mothers' misconceptions about breast-feeding was an important reason for bottle-feeding. Therefore, health education programs focusing on promoting breast-feeding are recommended. Such programs should provide accurate information to correct misconception about breast-feeding among young mothers and health care providers.

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