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Factors Affecting Mother's Choices and Decisions Related to Breast Feeding Practices and Weaning Habits

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Abstract: Infant feeding practices were observed and weaning habits were examined for 1791 Saudi mothers whom been admitted for delivery at maternity hospitals in Riyadh. Pre-lactical feeding was practiced by 10.5% of mothers, 74.4% of mothers performed exclusive Breast feeding, 42% of them initiate it within the first hour of delivery. Even though not significant, percentage of mothers who breast-fed was higher among older, child-bearing, nonworking, of lower family income and less educated mothers than their contrast. Retrospectively, Breast feeding duration mean was 11.10 ± 8.37 months and weaning was initiated by 11.3%, 40.8% at the first month and before the six month of the infant life respectively. Of mothers, 62% said they are influenced by health providers in their decision for feeding their babies and in selecting specific brand of milk or supplementary foods products. However, only 34.7% say they discuss the feeding practices with health providers and only 21.2% say they think the role of health providers in supporting mother decision is adequate. Insufficient breast milk was the main reason for diverting to mixed feeding while advices by others and mother's own experience were the most source of information. Further studies of factors affecting mother's determination and practice of Breast feeding are recommended. Policies and educational efforts to promote exclusive Breast feeding and to prevent further changes also needed. A real change in health provider's attitudes and practices is also emphasized.

Key words: Breast feeding, infant's feeding practices, weaning habits, mothers, Saudi Arabia

Introduction

Breast-feeding is one of the oldest practices recommended by all religions and it is the universally endorsed solution in the prevention of early malnutrition (Dana, 1979). In light of the extensively studied benefits of Breast feeding to the society, mother and infant (Heining and Dewey, 1996; Moreland and Coombs, 2000), it is been estimated that the lives of 1 million infants a year can be saved in the developing world by promoting Breast feeding. Different factors affecting such promotion need further studies including mother awareness, socio-economical factors and more importantly the health professional's training and attitude (Al-Nassaj *et al.*, 2004).

World Health Organization and The American Academy of Pediatrics recommends that an infant be breast-fed without supplemental foods or liquids for the first 6 months of age, known as exclusive Breast feeding (World Health Organization, 2002). Feeding practices including lack of Breast feeding and early introduction of solid foods have been reported as health risks (Uauy and Solomons, 2005). Data from different countries revealed that there are very large differences in breast-feeding practice between countries and between population groups within counties. A downward trend in breast-feeding has been noted in widely differing countries of the Middle East, especially in urban areas (World Health Quarterly, 1982; Balo *et al.*, 1997;

Harfouche, 1982). Furthermore there is a growing concern in recent years about the changing pattern of breast-feeding, particularly in societies in rapid transition (Patwardhan and Darby, 1972; World Health Quarterly, 1982; Sebai, 1982).

Saudi Arabia has experienced a rapid general development and socio-economic changes which are expected to have profound implications particularly in lifestyle and nutritional habits. Preliminary observations and screening studies have been conducted in the past few years which looked into the impact and dimensions of such socioeconomic and cultural transformations on the nutritional status of the Saudi population in general and on infant nutrition in particular (Sebai, 1982). This study aim to investigate the actual practice of mothers in respect to infant feeding and weaning practices and to examine areas and factors involved which could affect mother's choices and decisions in those aspects.

Materials and Methods

The data for this study were obtained from mothers and through direct observation of their related practices. A sample of 1791 Saudi women was randomly selected among women admitted for delivery in the major four maternity hospitals in Riyadh, Saudi Arabia. The data includes background socio-demographic and maternal information, present infant feeding practices and retrospective experiences and child feeding habits. A

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Table 1: Sample distribution based on socio-economic parameters and feeding sources

Parameters	Whole sample		Breast feeding		Mixed and bottle feeding	
	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency
Age of mother						
<= 20	271	15.13	200	73.80	71	26.20
21-36	1361	75.99	1008	74.06	353	25.94
>36	159	8.88	125	78.62	34	21.38
Parity						
First time mother	280	15.63	190	67.86	90	32.14
Child bearing mother	1511	84.37	1143	75.65	368	24.35
Education of Mother						
Basic	784	43.77	598	76.28	186	23.72
Med-high	1007	56.23	735	72.99	272	27.01
Employment of Mother						
Working	191	10.66	144	75.39	47	24.61
Non working	1600	89.34	1217	76.06	383	23.94
Income of Family						
Low	1037	57.90	779	75.12	258	24.88
Med-high	754	42.10	554	73.47	200	26.53
Sex of Baby						
Male	901	50.31	646	71.70	255	28.30
Female	890	49.69	687	77.19	203	22.81

structured and pre-tested questionnaire was used by trained female health visitors to record, through asking mothers, research information including age, education, parity, employment of mother and family income. Other information were collected regarding the sex of the newborn, its health, the type of delivery whether it was normal or other procedures were implemented at the delivery time. The mean age for the sample group was 27.2±5.6 years and mother's age were recorded as 20 years or less, 21-36 years and above 36 years. In regard to education, mothers were considered illiterate or having basic education if they have no education or have not finish elementary level. Mother employment was established according to whether she was working at the time of the study or not. For the family income, the categorization was based on the total family monthly income. It was considered as a low-med if it was 3000 SR or less and med-high for those with higher monthly income. As parity was a determinant factor, each mother was asked if she is first time mother and/or have a living child who is more than two years old.

For all mothers, the timing and the method of initial feeding was observed and recorded along with mother's knowledge about the benefits of Breast feeding and their intention about its continuation for the next 24 months of the baby age. Mothers how had previous experience been asked about their past feeding and weaning practices they actually apply with their last child.

All data were stored in the Dbase software package and the SPSS program was implemented in data analysis. Chi-square was computed to test the statistical correlation between Breast feeding practices and factors studied. The correlation was considered significant when the p-value was less than 5%. Kruskal Wallis one way analysis of variance was used in testing the

statistical significance between educational levels and employment status and mean of weaning period and introduction of various baby products.

Results

Table 1 shows the sample distribution based on the feeding source and socio-economic factors studied. Of all 1791 mothers included in this study, 74.4% of mothers exclusively breast-fed their infants while they were still in the hospital and 25.6% used mixed or only bottle feeding. There were 15.1% of mothers at age 20 years or less, 75.9% between 21 and 36 years and 8.9% above 36 years. Mothers whom the present infant was the first child or who have no child of 2 years or older represent 15.6% while those who have a previous child of 2 years or older represents 84.4% of the whole sample. As for education status, 43.7 of mothers have basic or no education and 56.3 having relatively higher education. Those who work outside home represent 10.7% of the sample and 89.3% were working mothers. Mothers from low-med income families represent 57.8% and those from families with better economical status represent 42.2%. Regarding the sex of the newborn, around 50.4% of mothers have boy and 49.6% have girl. Table 2 presents the average age at which mothers initiate weaning and introduce baby milk formula or weaning foods according to education and working statues. The mean duration for Breast feeding was 11.10±8.37 months. Introducing milk formula, ready made and home made supplementary foods started on the average at 3.23±3.71, 4.68±1.53 and 6.12±3.11 months respectively. Those parameters means for mothers of low/high education and working/nonworking, all are explicit on the table.

Table 3 presents the percentages of mothers who

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Table 2: Average age at which mothers initiated weaning and introduced baby milk formula or weaning foods according to education and working statuses

Practices initiated Mean std. (months)	Whole sample	Education		Employment	
		Basic	Higher	Nonworking	Working
Length of BF	11.10±8.37	12.42±8.56**	9.79±7.98	11.25±8.39*	9.42±7.98
Introducing MF	3.23±3.71	3.64±4.20**	2.88±3.18	3.28±3.79**	2.71±2.72
Introducing RBF	4.68±1.53	4.81±1.83**	4.59±1.26	4.71±1.56*	4.41±1.20
Introducing HBF	6.12±3.11	6.53±3.79**	5.72±2.20	6.17±3.20*	5.55±1.89

BF = Breast feeding, RBF = Ready made baby food, *p = 0.05, **p = 0.01

Table 3: Percentages of mothers practiced a given weaning parameters at a given month for the first six months of the infant's life

Practices	First six months					
	1	2	3	4	5	6
Percentage of mothers						
Start Weaning	11.3	18.1	25.4	30.7	34.9	40.8
Introduce baby milk formula	9.7	16.3	19.7	19.1	21.3	18.6
Introduce Ready-made baby food	0.0	0.1	4.6	6.2	9.0	16.4
Introducing Home-made baby food	0.0	0.0	0.1	1.8	2.5	5.8

practice certain weaning steps at a period during the first six months of the infant life. 11.3% of mothers studied initiated weaning on the first month of the infant life and 40.8% of them initiated it at the sixth month. Baby milk formula introduced at the first month by 9.7% of mothers and 18.6% of them used it at the sixth month. The percentages of mothers who practiced a given weaning procedures at a given month of infant life are all shown in the table.

Discussion

It is highly desirable that breast-feeding is to be initiated soon after birth, preferably within the first thirty minutes of delivery. However, it is well documented that mothers in the Arabian countries, especially in the gulf countries, start feeding their babies with pre-lacteal feeds and then ghee until the mother lactates (Sawaya *et al.*, 1987). In this study 10.5% of infants were given pre-lacteal in form of water mixed, mostly, with date, honey or sugar. The proportion of pre-lacteal feeds is less than what is reported in other studies (Shembesh *et al.*, 1997) and the result obtained indicate that the practice is fallen with time (Abudejaja *et al.*, 1982).

Earlier studies revealed that Breast feeding is declining due to socio-economic and technological changes in the past decade. Abundances of milk substitutes and availability of many brands of infant formula and baby food supplements in the market were addressed as factors playing a significant role in this direction (Al-Othaimeen *et al.*, 1987; Al-Frayh, 1989). In this study, 74.4% of mothers performed exclusive Breast feeding from the day of delivery and 42% of those mothers initiate it within the first hour of delivery. The mixed and the "only bottle feeding" were used by 25.6% of mothers. However, only bottle feeding was practiced principally as baby or mother was physically unable. These results are compatible with the finding of (Shembesh *et al.*, 1997).

They reported that 65.0% of infants in their study were kept to breast within 12 hrs of birth and 25.5% was delayed by 12 to 120 hrs. Also, Musaiger, 2000 reported that 39.8% of Bahraini mothers initiated Breast feeding at the first hour of delivery (Musaiger, 2000).

In this study, when mothers were asked to compare the benefits of Breast feeding and bottle feeding, 98.3% rated breast milk to be 100% superior to any other substitute. Also, when mothers were asked about their level of determination in regard to the duration intended for Breast feeding their newborn, 87% said they won't wean before 2 years of the child life. These practical and informative results demonstrated that nearly all mothers were knowledgeable of the need to breast-feed and nearly all mothers were determined to prolong its duration.

Older mothers practiced exclusive Breast feeding more than younger mothers. This also applies to those having previous child compared to first time mothers and to nonworking compared to working mothers. Likewise, mothers of girl babies practiced Breast feeding more than mothers of male babies. On the other hand only 72.9% of mothers who were more educated practiced Breast feeding compared to 76.3% of mothers of lower level of education and only 73.4% of the higher family income practice it compared to 75.1% of mothers from families of lower income. The results obtained indicated a positive correlation between maternity age, childbearing and staying home parameters and the tendency for Breast feeding. On other hand, a negative correlation existed between level of education of the mother and her family income with Breast feeding. However, no statistical significant relationship was found between any of the studied parameters and the practice of Breast feeding. This result is in agreement with other studies which indicated that when the mother has a higher level of education, it is more likely that the

mother will not practice exclusive Breast feeding (Al-Frayh, 1989).

The purpose of all kinds of supplementary food is to transfer the child from breast milk to regular child diet. Delay in introduction of other foods offers some protection. On the other hand, after 4-6 months, growth cannot be sustained on breast milk alone. According to WHO and the International Pediatric Association, the introduction of supplementary foods should commence at 4-6 months of age (Gartner *et al.*, 2005). In 2001, Sellen compared the infant feeding patterns with current recommendations by reviewing reports published between 1873 and 1998. The major findings of his review were that more than 70% of nonindustrial populations introduced non-milk liquids before 6 months of age and often within a few weeks of birth. Besides, over 50% of these populations fed their children complementary solid foods before the age of 6 months (Sellen, 2001). Another study about infant feeding practices in Papua New Guinea in 1995 revealed that 43.5% of 3 months-old babies were exclusively breast-fed. Introduction of solid food before 4 months of age was observed in over half of the study Population (Friesen *et al.*, 1998). In a more recent study in Bahrain, Naseeb and Farid, 2000 reported that only 34% of infants under four months of age were exclusively or predominantly breast-fed (Naseeb and Farid, 2000).

Retrospectively, Breast feeding duration ranged within 1-43 months with an average of 11.10 ± 8.37 months and significantly prolonged for illiterate ($P = 0.01$) and nonworking ($P = 0.05$) mothers. Ready made and home made baby foods were introduced by an average of 4.68 ± 1.53 and 6.12 ± 3.11 months respectively. All those parameters were significantly higher among illiterate and non working mothers compared to their opposites. The proportion of mothers who continued to exclusively breast-feed was only 40.8% during the first six months of the child's life. In other way, supplementary food was introduced by 59.2% of mothers before the child complete six months of age. The results indicate that even though the duration of Breast feeding is extended on the average to one year, large proportion of mothers end Breast feeding within the first six months or earlier. This finding is similar to those reported earlier from Saudi Arabia and other developing countries (Al-Sekait, 1988; Motzan, 1984; Serenius, 1988).

Physicians and health providers have a significant impact on the initiation and maintenance of breast-feeding, if they have sufficient knowledge of breast-feeding benefits and the necessary clinical management skills or habits. In one study, only 55% of senior residents were recalled even one instance of perceiving related to breast-feeding and less than 20% of them had demonstrated breast-feeding techniques at least five times during their residency. Regarding

preparation for breast-feeding counseling, more than 50% of all practicing physicians rated their residency training as inadequate (Freed *et al.*, 1995). In this study, mothers were asked about factors that have more influence on their choices and decisions for both types of feeding and product's brand they use. 62% of mothers said they are influenced by health providers, however, only 34.7% say they discuss the feeding practices with health providers. As only 21.2% of mothers think the role of health providers is adequate, this could mean that those mothers are only (told) by health providers to do or not to do. The main reasons that influence mothers to change to bottle feeding included insufficient breast milk 53% and other reasons as working outside home. Mother choice for specific brand of formula or product is affected by advices from physicians 46%, mass media 18% and by mothers own experience 36%. This indicates the need for more emphasis on training physicians and health providers on the subject. Also, there is a need for implementing sound hospital practice such as of rooming-in, early and frequent breast-feeding, skilled support and avoidance of artificial nipples, pacifiers and formula etc.

Supplementary food was found to included most of food components served to the family and given to the child besides breast-milk. The type food and the habits of their inclusion in the child meal are similar to previous studies and surveys conducted in most of the Arab countries (Motzan, 1984; Patwardhan and Darby, 1972). The study supports the conclusion that traditional breast-feeding patterns have persisted despite the modernization that the country has undergone. However prolonged exclusive Breast feeding is declining and more mothers chose to wean their infants earlier. Further studies to investigate the factors affecting mother's determination and practice of Breast feeding are recommended along. Polices and educational efforts to promote exclusive Breast feeding and to prevent further changes also needed. Medical school curricula and residency training should be adequately designed for preparing physicians for their role in Breast feeding promotion. For such a promotional campaign to be effective, attitudes and practices of health providers must be changed.

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