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ORIGINAL ARTICLE

Infant Feeding Practices Among Mothers During the First Six Months of Life

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Abstract

Background: ***On a global scale, it is widely advocated that all women who experience childbirth should engage in breastfeeding (BF).***

Aim and objectives: ***To elucidate the babies' feeding patterns seen during the first six months of life, as well as to identify the factors that influence exclusive breastfeeding over the entire duration of the First six months of life.***

Patients and methods: ***Cross-sectional exploratory Study was conducted at the general outpatient clinics of Cairo University Children Hospital (Abo-Elrich hospital) on a sample of 415 mothers in the period between 12th of December 2011 to 10thof April 2012. Their babies were categorized into five groups to show feeding practices before 6-months of age.***

Results: ***Only (12.8%) of babies were exclusively BF for six months, and the majority of babies (87.2%) received complementary feeds before the age of six months due to different causes. The main sources of nutritional advice for mothers were pediatricians (50.8%), grandmothers (31.1%) and obstetricians (18.1%).***

Conclusion: ***Although the initiation rates of breastfeeding (BF) are high, the rates of exclusive BF for a duration of 6 months are low, and the total duration of BF is very short. In order to enhance the duration and exclusivity of breastfeeding, it is imperative to establish robust social and medical support networks.***

Keywords: Infant feeding practices; First six months of life; Exclusive breastfeeding

1. Introduction

For the first six months of a baby's life, the American Academy of Pediatrics suggests only breast milk. After that, it's recommended that BF continue for at least two years and then for as long as both parents like.[1]

When it comes to promoting BF and acquiring and maintaining information and skills relevant to BF management, the American Academy of Pediatrics recognizes pediatricians as crucial champions.[2]

Many sources provide mothers with information and guidance on how to feed their infants. Mothers listen carefully to medical experts' recommendations, but they rarely seek their assistance when they are stuck.[2]

Modifiable elements such as BF intention and social support were identified as influential in shaping women's decisions regarding breastfeeding practices.[3]

Chronic illnesses transcend the early stages of life and exert a profound impact on the holistic well-being of a population. This would indicate that the prevention of obesity commences with breastfeeding. It is important to acknowledge that within Middle Eastern nations, particularly in Islamic civilizations, the concept of BF is deeply rooted in religious beliefs. It is customary for mothers to engage in breastfeeding for a minimum duration of two years. The traditional practices of breastfeeding have been impacted by the implementation of assertive promotional and marketing strategies for infant formula and other baby food products. Consequently, there was a rise in the utilization of bottle-feeding technology.[4]

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Suboptimal feeding practices have been found to be associated with heightened susceptibility to disease and mortality in children. Although breastfeeding begins at an early stage for most children, pre-lacteal feeding is a prevalent practice. Prelacteal feeding refers to the act of administering alternatives to breast milk to a newborn infant in the postpartum phase prior to the commencement of lactation. The practice is deemed contraindicated due to its potential to restrict the infant's suckling frequency and increase the likelihood of infection.[5]

The feeding patterns of infants exert a significant impact on the overall health outcomes of children. The selection of feeding techniques has a crucial role in determining the nutritional health of young children. Research has demonstrated that inadequate nutritional status is associated with an elevated susceptibility to sickness and mortality in youngsters. Behaviours related to BF also exert an influence on the fertility of the mother. An extended duration of frequent breastfeeding has been found to be correlated with prolonged periods of postpartum amenorrhea, resulting in extended birth intervals and reduced fertility.[6]

The objective of this Study was to elucidate the babies' feeding patterns seen during the first six months of life, as well as to identify the factors that influence exclusive breastfeeding over the entire duration of First six months of life.

2. Patients and methods

A cross-sectional exploratory Study was conducted at the general outpatient clinics of Cairo University Children Hospital (Abo-Elrich Hospital) on a sample of 415 mothers in the period between the 12th of December 2011 and the 10th of April 2012. Their babies were categorized into five groups to show feeding practices before six months of age. Exclusive breastfeeding refers to the practice of a newborn consuming solely breast milk without any other food or beverages. Breastfeeding without infant formula refers to the consumption of breast milk in addition to other foods or liquids without the use of infant formula. Breastfeeding with infant formula refers to the consumption of breast milk, infant formula and sometimes other foods or beverages by the infant. Initial breastfeeding shifted to formula or other foods refers to the initial breastfeeding but subsequently transitioned to infant formula or alternative food sources after a certain duration). Non-breastfeeding refers to the infant that did not receive breast milk at all but instead consumed infant formula or other solid foods and liquids).

Inclusion criteria:

Neither the mother nor the infant had a medical condition at birth that affected BF, the infant was a full-term baby i.e. born after 37 weeks of gestation, with birth weight of at least 2500grams, singleton and the baby age at time of the Study is 6-12 months.

Exclusion criteria:

Either the mother or the infant had a medical condition at birth that affected breastfeeding, the infant was preterm, or birth weight was less than 2500grams or not a singleton and the baby age at time of the Study is less than six months or more than one year (to avoid errors of recall).

Sample size Calculation:

With a significance level of 0.05 and a precision of 0.95, and assuming a null hypothesis of 5% for the prevalence of non-breastfed newborns and 15.7% for exclusively breastfed infants under six months of age, the sample size was determined using the Epicalc 2000 program version 1.02.5 A total of 415 people were included in the Study, which was determined to be an adequate sample size based on these inputs.

Study Tools:

In this Study we used 2 questionnaires: questionnaire for inclusion criteria of the study sample, and questionnaire for socio-demographic data and infant feeding practices. Questionnaires were completed by face-to-face interviews with the mothers. Questions involved infant feeding practices including; BF, formula feeding, complementary feeding, breast-pumps use, sources of information regarding infant feeding, parents' employment and education.

Data management and analysis:

All collected questionnaires were revised for completeness and logical consistency. A database designed for data entry in Microsoft Office Excel 2007 for Windows was used to input pre-coded data into the computer. At the conclusion of each working day, data entry was carried out. The next step is conducting quantitative data analysis after importing the data into SPSS, version 11. Simple frequencies were employed to verify the data. Frequency distribution tables display the results. We looked for correlations between our study groups and our variables using the Chi-square test. The 0.05 level of significance was established.

Ethical considerations:

In April 2009, the council meeting of Cairo University's Faculty of Medicine's Pediatrics Department reviewed and approved the study protocol. In order to ensure that the Study was ethically compliant, an internal review board consisting of selected personnel from this department was established. Before recruiting any mothers for the Study, we made sure to explain the goals of the work and get their verbal agreement.

Everyone who took part in the Study did so voluntarily. The surveys that were collected did not include any personally identifiable information (personal names, addresses, etc.). In accordance with the updated Declaration of Helsinki on Biomedical Ethics, confidentiality was ensured when working with the questionnaires and databases.

3. Results

Table 1. Percent distribution of infants according to demographic characteristic.

INFANTS' VARIABLES*		FREQUENCY (N=415)	PERCENT (%)
SEX	Male	247	59.5
	Female	168	40.5
ORDER AMONG SIBLINGS	1st	117	28.2
	2nd	162	39.0
	3rd	70	16.9
	4th +	66	15.9
AGE	Mean age of babies included in this study was 8.85 ± 2.04 months with minimum=6 months and maximum=12 months.		

Table 1 shows that, of the total studied babies, 59.5% were males and 40.5% were females. It also shows that regardless sex, 28.2% were 1st baby in the family, 39% were 2nd baby, 16.9% were 3rd baby and 15.9% were 4th baby or more.

Table 2. Percent distribution of mothers according to demographic characteristic.

Maternal variables		Frequency (N=415)	Percent (%)
Mothers' Age† (in Years)	<20	9	2.2
	20-25	188	45.3
	26-30	139	33.5
	>30	79	19.0
Mothers'work	Housewife	385	92.8
	Worker (Industrial, Agricultural or Skilled worker)	16	3.9
	Professional or Semi-professional	14	3.3
Mothers' education	Not educated	136	32.8
	Primary	21	5.1
	Preparatory	65	15.7
	Secondary	170	41.0
	University	23	5.5

†Mean maternal age=26.6±4.7 years with a minimum of 18 and maximum of 43 years.

Table 2 demonstrates that most of the mothers were in the age group of 20-25 years with mean age=26.6±4.7 years and that 92.8% of mothers were housewives. As regard maternal education, the highest proportion only completed secondary school education (41%), and only 5.5% finished university education.

Table 3. Percent distribution of fathers according to demographic characteristic.

Paternal variables		Frequency (N=415)	Percent (%)
Father's work	Indust/Agricult worker	63	15.2
	Skilled Worker	323	77.8
	Semi-professional	19	4.6
	Professional	10	2.4
Father's education	Illiterate	106	25.5
	Primary	17	4.1
	Preparatory	43	10.4
	Secondary	228	54.9
	University	21	5.1

Table 3 illustrates that, most of fathers were skilled workers (77.8%). As regard father's education, around half of them (54.9%) completed secondary school education and only (5.1%) completed university education.

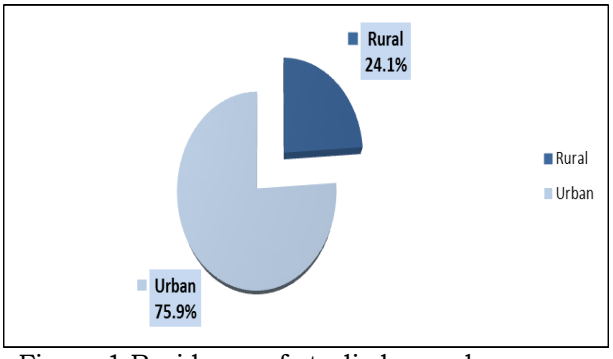

Figure 1.Residence of studied sample.

This figure shows that most of the studied sample (75.9%) was from urban areas.

Table 4. Delivery history

		Frequency (N=415)	Percent (%)
Mode of delivery	Normal	205	49.4
	C.S.	210	50.6
Place of delivery	Public health facility	174	41.9
	Private health facility	214	51.6
	Home	27	6.5

As regard mode of delivery C.S represented (50.6 %) versus 49.4 % for normal delivery and most of them were in private health facility (51.6%) followed by (41.9%) in public health facility and only (6.5%) delivered at home.

Table 5. Postnatal feeding history.

POSTNATAL FEEDING VARIABLES		FREQUENCY (N=415)	PERCENT (%)
ONSET OF FIRST BREASTFEED (WITHIN HOURS AFTER DELIVERY)	Within 1st hour	50	12.0
	1-6	215	51.8
	7-24	43	10.4
	>24 hours	101	24.3
	Didn't Breastfeed	6	1.4
INTRODUCTION OF PRELACTEALS	Yes	327	78.8
	No	88	21.2

Table 5 shows that most of the mothers (51.8%) started BF after1-6 hours after delivery, followed by (24.3%) breastfed after 1st day of delivery, (12%) fed their babies in 1st hour and only 6 mothers (1.4%) didn't breastfeed at all. So, according to our results (63.8%) breastfed their babies within the first 6 hours of life. Majority of babies received prelacteals (78.8%).

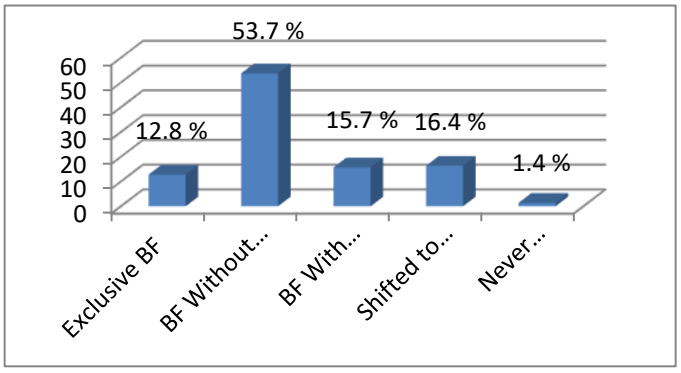

Figure 2. Type of feeding before 6 months.

Figure 2 illustrates that Only (12.8%) were exclusively breastfed, (53.7%) of babies received breastfeeding in addition to other foods not including formulas, while (16.4%) consumed breast milk initially but after a period of time shifted to infant formula or other foods on the other hand (15.7%) received both formula and breastfeeding, while (1.4%) were not breastfed at all.

Table 6. BF characteristics

BF VARIABLES*		FREQUENCY (N=415)	PERCENT (%)
BF FREQUENCY	On Demand	381	91.8
	Scheduled	28	6.7
	Non-BF	6	1.4
EXCLUSIVE BF DURATION	6 months	53	12.8
	4-5 months	96	23.1
	1-3 months	206	49.6
	<1 month	54	13
	Non-BF	6	1.4

*Around (79.8%) of mothers intend to stop BF at 12-24 months of baby age (mean=19.14± 2.92 months), While (18.8%) actually stopped BF at Age of 1-11 months (mean=2.7±2.1 months). (1.4% did not breastfeed at all).

Table 6 demonstrates that most babies (91.8%) were breastfed on demand while (6.7%) were fed according to schedule. As regard duration of exclusive BF, (49.6%) were exclusively breastfed from 1 to 3 months of age, (23.1%) were exclusively breastfed till 4th to 5th month of age, only (12.8%) were exclusively breastfed for 6 months, (13%) were exclusively breastfed for less than 1 month.

Table 7. Use of bottles, pacifiers and pumps and Sedatives to the baby.

VARIABLES		FREQUENCY (N=415)	PERCENT (%)
SEDATIVES TO THE BABY	Yes	23	5.5
	No	392	94.5
BOTTLES	Yes	301	73.5
	No	110	26.5
PACIFIERS	Yes	260	62.7
	No	155	37.3
PUMPS	Yes	78	18.8
	No	337	81.2

Table 7 shows that (5.5%) of mothers used Sedatives to their babies, (73.5%) used bottles, (62.7%) used pacifiers while only (18.8%) used breast pumps.

4. Discussion

he results of our Study showed that exclusive BF for six months is still marginal (12.8%), which is consistent with previous studies carried out by El-Zanaty and Way[5] in Egypt, where 15.7% were exclusively breastfed for the first six months of life.

This low percentage may be due to factors that may affect exclusive BF, like caesarean delivery, strong promotions by formula companies for mothers and pediatricians, short maternity leave for working mothers, delayed onset of first breastfeeding, the introduction of pre-lacteals, scheduled BF, use of pacifiers, use of bottles and wrong knowledge of some pediatrician and obstetrician leading to wrong practices and advice to mothers. Many mothers in our Study, especially those who delivered in private clinics or hospitals, reported that after delivery, they were given a printed prescription including eye drops, alcohol for umbilicus and sugary herbal drinks to be given by bottle for their babies 2-3 times per day. These drinks may affect BF by giving the baby drinks with better taste than breast milk making the baby refuse BF later on; these drinks are given by bottle, which will cause nipple confusion; these drinks will not lead to weight gain as they will occupy baby's stomach leaving no space for the nutritious breast milk which will cause loss of weight and may cause formula use to correct loss of weight.

In our Study, 63.8% of mothers started BF within 6 hours after delivery; this is consistent with a study done by El-Zanaty and Way[6] in Egypt, which found that 55.9% of mothers started BF within the 1st hour after delivery.

This contradicts with results of a study done by Deeb, 1997 who found in his Study done in Lebanon that most mothers delayed BF for more than 6 hours after delivery. Delayed onset of first breastfeeding may be due to relatives' advice to mothers to rest after delivery: "You are exhausted, and we will take care of the baby and will give him herbal drinks".

In our Study, exclusive breastfeeding was higher among mothers who didn't give their babies prelacteals and there was high percentage of Prelacteal use (78.8%) Which is consistent with a study done by El-Zanaty and Way,[6] who stated that 47% of children received prelacteal feeds (47.7% versus 3.4%).

Pre-lacteal feeds are given because it is believed that they act as laxatives or as a means of clearing the meconium. Unfortunately, mothers are not aware that the pre-lacteal feeds could be a source of contamination Deshpande et al.[7] Many mothers in our Study, specially who delivered in private clinics or hospitals reported that after delivery they were given printed prescription including eye drops, alcohol for umbilicus and sugary herbal drinks to be given by bottle for their babies 2-3 times per day.

In the current Study, more than 80% gave their children herbal drinks sweetened with honey before 6 months which is not a good sign and necessitates continuous support for lactating mothers to avoid this malpractice. This may be due to wrong beliefs by some pediatricians and obstetricians that breast-milk is not enough alone and need to be supported with some sort of herbal products.

With respect to the mode of delivery and its relation to the type of feeding, we found that exclusive breastfeeding was higher among mothers who delivered normally (16.6% versus 9% for those who delivered by CS). This agrees with the results of a study done by Prior et al.[8] who found that breastfeeding was significantly lower after cesarean section compared with vaginal delivery. This may be due to pain, complications, or separation following CD. Some obstetricians and grandmothers advise mothers to avoid BF following CD to have enough rest and give the baby herbal drinks instead.

Maternal work affects BF significantly as according to our Study exclusive breastfeeding was higher among housewives (13.2%) and none of the professional mothers could breastfeed her baby exclusively for the 1st6-months of life which is consistent with a study done by Fida and Al-Aama,[9] who found that over one-fifth of the moms in western Saudi Arabia stopped breastfeeding because they had to work. The usage of baby formula or additional foods while moms are at work can be to blame.

Most of babies in our Study were fed on demand (91.8%) and none of babies fed on scheduled were exclusively breastfed for 6 months. This contradicts with a study conducted in Philippines by Martin,[10] who found that most of the selected mothers breastfeed their babies according to a schedule. It is not logic that mothers see their babies crying and leave them as the 2 hours schedule is not yet reached. Mothers should feed their babies once they show hunger cues.

As regards the source of nutritional advice, most of the selected mothers have acquired information from physicians (68.9%), and the highest percentage of advice came through pediatricians (50.8%), which goes with the results of a study conducted by Batal & Boulghaurjian,[11] a large number of moms cited their doctors as having a significant impact on their decision to breastfeed (42.8%). This is encouraging, but there should be more of an emphasis on educating doctors and obstetricians on the importance of breastfeeding, BF policies, and baby-friendly hospitals.

As regard maternal age, our results showed that exclusive BF was higher among mothers older than 30 years (16.5%). Our findings go with the result found by Batal & Boulghaurjian,[11] were somewhat older (around 32 years) than women who exclusively breastfed during the first six months of their infant's life.

As regards maternal education, we found that exclusive BF was higher (19.0%) among mothers who only finished primary school education. This is consistent with results of similar Study done by El-Zanaty and Way,[6] who stated that children born to mothers who never attended school are breastfed two months longer than children born to mothers who completed secondary school or higher. This suggests that interventions should target women with higher education.

The use of pacifiers affects BF significantly as in our Study, exclusive BF was higher among mothers who didn't give their babies pacifiers (32.9% versus 0.8% for those who were given pacifiers). This is consistent with a study done by Karabulut et al.,[12] who found that the use of pacifiers was associated with shortened duration of exclusive and of any BF. This may be due to nipple confusion caused by pacifiers causing refusal of the maternal nipple, and so affecting BF.

The use of sedatives for the baby also affects the type of feeding as our Study showed that only (5.5%) of mothers used sedatives for their babies, and none of them could complete exclusive BF for six months, which is similar to the results of a study done by Batal & Boulghaurjian,[11] where most of the mothers not using sedatives breast-feeding for 6-months and beyond. Mothers who used to give sedatives like potassium bromide

and phenobarbitone to their babies reported that they wanted to calm the baby to stop crying.

4. Conclusion

Although the initiation rates of breastfeeding (BF) are high, the rates of exclusive BF for a duration of 6 months are low, and the total duration of BF is very short. In order to enhance the duration and exclusivity of breastfeeding, it is imperative to establish robust social and medical support networks.

Disclosure

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Authorship

All authors have a substantial contribution to the article

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There are no conflicts of interest.

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