

## Factors influencing the practice of exclusive breastfeeding among the mothers

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### Abstract

**Introduction:** Exclusive breastfeeding (EBF) is an essential part of early infant feeding. Promotion of EBF is the single most cost-effective intervention for reducing infant mortality in developing countries. Understanding the factors influencing EBF is crucial to promote this essential feeding policy during infancy.

**Objective:** This study was carried out to identify factors influencing the practice of EBF among mothers.

**Method:** A cross-sectional study was conducted at the National Guard Comprehensive Specialized Clinic in Riyadh, Saudi Arabia. The study population consisted of 500 mother–infant pairs attending the pediatrics clinic. Data were collected by direct interviews using a predesigned questionnaire. The collected data were tabulated and statistically analyzed.

**Results:** Out of 500 infants enrolled in the study, 54 (10.8%) were EBF. The prevalence of exclusive formula feeding and mixed (breast and formula) feeding was 57% and 32.2%, respectively. Statistically significant factors promoting EBF were age of mother, parity, mother's work status, and antenatal advice. The most common reason for nonexclusive breastfeeding was inadequate breast milk production followed by maternal work.

**Conclusions:** The majority of mothers presented suboptimal breastfeeding practices. Programs promoting exclusive breastfeeding should therefore vigorously pursue public awareness on EBF practice during the first six months of the life of an infant.

**Keywords:** exclusive breast feeding, formula feeding, factors, mothers

### Introduction

Breastfeeding is the universally accepted means of infant feeding. Breast milk contains the complete range of nutrients required by infants for healthy growth and development during their first six months of life [1-3]. In addition to these nutrients, breast milk also protects against infections, boosts infant neurodevelopment, and reduces the likelihood of infants with non-communicable diseases, such as cardiovascular diseases, diabetes, obesity, and hypertension later in their life [4,5]. Because of these benefits, the current recommendation of the World Health Organization (WHO) is that all mothers should feed their infants solely with breast milk, exclusive of any other nutritional sources (including plain water and juices), for the first six months of the infant's life [6]. Globally, just 38% of infants less than six months are exclusively breastfed [7]. In Saudi Arabia, an exclusive breastfeeding (EBF) rate of 24.4% at six months [8], which is below the optimal EBF rate of 90% in infants < 6 months set by the WHO/UNICEF for developing countries [9], has been reported. There are a number of factors, such as undesirable socio-cultural beliefs, poor knowledge of EBF, education, occupation, maternal and infant sicknesses, and many other variables that are intrinsically related to breast feeding practices of the mother [10]. This fact justifies the need for a regional study that could suggest necessary interventional steps based on the knowledge of local realities.

### Objective

The present study was undertaken to understand the prevalence of EBF and to study various factors and reasons responsible for the failure of EBF during the first six months of life.

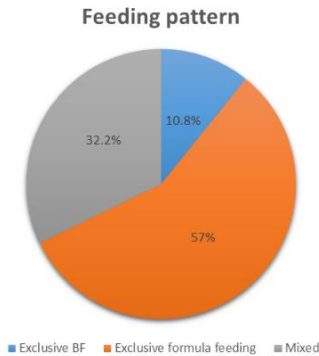
### Methods

This cross-sectional study was conducted at the National Guard Comprehensive Specialized Clinic in Riyadh, Saudi Arabia. The study targeted infants between two and six months of age and their mothers, who attended the pediatrics clinic of the Institute. The study period was from May 1, 2018 until November 30, 2019. Five-hundred mother–infant pairs were enrolled in the study. A purpose-designed, structured questionnaire was used as a tool for data collection. Informed oral consent was obtained from the mothers. The response rate was 100%. The study variables were related to the mothers and infants. Variables related to the mother were the age of the mother, parity, education, occupation, presence of chronic illnesses, complications during pregnancy or post-birth, mode of delivery, details on antenatal advice about breastfeeding practices, and breastfeeding initiation time. Variables related to infants were gestational age, gender, pacifier use, and weight of the baby at birth. EBF is defined as the situation in which the infant has received only breast milk from his/her mother or a wet nurse or exclusively breast milk and no other liquids or solids with the exception of drops or syrups consisting of vitamins, minerals supplements, or medicines for the first six months [10]. Different reasons for failure of EBF were included in the questionnaire, and the mother was asked to choose one reason: (1) inadequate breast milk production; (2) bottle feed more nutritious than breast milk; (3) work; (4) easy to feed; (5) maternal illness; (6) temporary separation from mother; (7) mother has breast-related problem; (8) maintain shape; (9) advice by others; (10) feeding difficulties; (11) poor weight gain of the infant; (12) maternal psychosis; and (13) surgery. Categorical data were analyzed using percentage and chi-

Squared tests. The data were analyzed using software SPSS version 20. The p-value was considered significant if < 0.05.

**Results**

Out of 500 infants taken up for study, 54 (10.8%) were exclusively breastfed. The prevalence of exclusive formula feeding and mixed (breast and formula) feeding was 57% and 32.2%, respectively (Figure-1).



**Fig 1:** Prevalence of exclusive breast feeding (EBF), exclusive formula feeding, and mixed feeding

Regarding gender distribution, 222 (44.3%) were male, and 278 (55.7%) were female. The age range of the majority of the mothers was 20–30 years (52.5%). Regarding the parity

of the mothers, 206 (41.2%) had 2–3 children, 176 (35.2%) had one child, and 118 (23.6%) had three or more children. Most mothers (70.5%) had a bachelor’s degree, 24.6% finished secondary school or less, and 4.9% had studied at a higher education level. Most (70%) mothers were housewives, and 30% were workers. Thirteen percent of the mothers had chronic diseases. Maternal complications during pregnancy and post-birth were 20.2% and 6.8%, respectively. Antenatal advice was given to 87.6% of the mothers. Almost half of the mothers (48.2%) used contraception. Many mothers (89.6%) delivered vaginally, while only 10.4% delivered by Caesarean. Regarding gestational age, 81.8% of the babies were born at term. Eighty-seven percent of the babies had normal birth weight. Regarding breastfeeding initiation time, 51.1% had started in first hour of the delivery, 26% from one to six hours after delivery, and 22.4% started after six hours of the delivery. Pacifiers were used by 48% of the babies (Table 1).

Among the 446 study subjects who were nonexclusively breast fed, the most common reason was inadequate breast milk production (66%) followed by maternal work (7.8%), and misconceptions that bottle feeding was more nutritious than breast milk was the third reason (7%). Other reasons were maternal illness, easy to use formula feeding, temporary separation of the baby from mother, advice by others, mother had breast-related problems, and mother wanted to maintain breast shape (Table 2).

**Table 1:** Various factors affecting exclusive breastfeeding (EBF) rate

Factor	EBF Number (%)	Non EBF Number (%)	Total Number (%)	p value
Overall	54 (10.8%)	446 (89.2%)	500 (100%)	
Sex of Infant				
Male	18(4.5%)	204 (39.8%)	222 (44.3%)	.083
Female	36(6.3%)	242(49.9%)	278 (55.7%)	
Mother age				
<20 years	1 (4.2%)	23 (95.8%)	24 (4.8%)	0.018
20–30	21 (8%)	242 (92%)	263 (52.5%)	
>30	33 (15.5%)	180 (84.5%)	213 (42.7%)	
Parity				
1	11 (6.3%)	165 (93.7%)	176 (35.2%)	0.024
2–3	23 (11.2%)	183 (88.8%)	206 (41.2)	
> 3	20 (16.9%)	98 (83.1%)	118 (23.6%)	
Level of education				
Secondary school or less	22 (17.9%)	101 (82.1%)	123 (24.6%)	0.014
Bachelor’s degree	30 (8.5%)	324 (91.5%)	354 (70.5%)	
Higher study	2 (8.7%)	21 (91.3%)	23 (4.9%)	
Working mother				
Yes	7(4.7%)	143 (95.3%)	150 (30%)	0.003
No	47(13.4%)	303 (86.6%)	350 (70%)	
Mother's Chronic Illness				
Yes	10 (15.4%)	55 (84.6%)	65 (13%)	0.201
No	44(10.1%)	391 (89.9%)	435 (87%)	
Maternal complication during pregnancy				
Yes	14 (13.9%)	87 (86.1%)	101 (20.2%)	0.267
No	40 (10%)	359 (90%)	399 (79.8%)	
Maternal complication after baby birth				
Yes	3 (8.8%)	31 (91.2%)	34 (6.8%)	0.700
No	51 (10.9%)	415 (89.1%)	466 (93.2%)	
Antenatal advice Given				
Yes	42 (9.6%)	21(90.4%)	438 (87.6)	0.020
No	12 (19.4%)	50 (80.6%)	62 (12.4%)	
Use of Contraception				
Yes	27 (11.2%)	214 (88.8%)	241 (48.2%)	0.779
No	27 (10.4%)	232 (89.6%)	259 (51.8%)	
Mode of delivery	50 (11.2%)	398 (88.8%)	448 (89.6%)	0.445

Vaginal Delivery				
Caesarean Delivery	4 (7.7%)	48 (92.3%)	52 (10.4%)	
Gestational Age				
Preterm	8 (8.8%)	83 (91.2%)	<b>91(18.2%)</b>	0.245
Term	46 (11.2%)	363 (88.8%)	<b>409(81.8%)</b>	
Weight of the baby				
Normal	46 (10.6%)	389 (89.4%)	435 (87%)	0.674
Abnormal	8 (12.3%)	57(87.7%)	65 (13%)	
BF initiation time				
<1hr	25 (9.8%)	230 (90.2%)	<b>255(51.1%)</b>	0.0185
1-6	22 (16.9%)	108 (83.1%)	<b>130(26%)</b>	
>6	7 (6.1%)	108(93.9%)	115 (22.4%)	
Pacifier Use				
Yes	23 (9.6%)	217 (90.4%)	240 (48%)	0.365
No	31 (11.9%)	229 (88.1%)	260 (52%)	

**Table 2:** Reasons for non-EBF during the first six months post-birth

Feeding difficulties	Number	%
Inadequate breast milk	330	66%
Work	39	7.8%
Bottle feeding more nutritious than breast milk	35	7%
Maternal illness	31	6.2%
Easy to feed	24	4.8%
Temp separation from mother	13	2.6%
Advice by others	12	2.4%
Mother has breast-related problem	10	2%
Maintain breast shape	6	1.2%

## Discussion

The overall prevalence of EBF of mothers for the first six months of their infant's life in this study was 10.8%. This result showed less prevalence of EBF as compared to previous results by El-Gilanyf<sup>[8]</sup> and Alzaheb<sup>[11]</sup> in which they found the prevalence of EBF in Saudi Arabia to be 24.4% and 31.4%, respectively. In the present study, there was no statistically significant difference between the prevalence of EBF in male and female infants (44.3% and 55.7%, respectively). Similar results were reported with no significant difference between male and female infants in the study done by El-Gilanyf<sup>[8]</sup> and Alzaheb<sup>[11]</sup>. EBF prevalence was positively proportional to the age of the mother and number of parities with statistically a significant p value of < 0.05 for both of them. This could be due to better awareness and confidence to breast feed in older and multiparous women. However, many studies showed no relationship of the age of the mother and parity to EBF<sup>[12,13]</sup>. The present study showed that the higher levels of mother's education was significantly associated with non-EBF (p-value = 0.014). The reason for this finding could have been the strong association between the higher level of maternal education and the possibility of being a working mother, which resulted in a busier mother and a lifestyle-related contribution to non-EBF. Compared to non-working mothers, it was shown that working mothers were more likely to be non-EBF with their infants (p-value = 0.003). The negative association between employment and exclusive breastfeeding reported in these studies was also found in Lebanon, Iran, and Malaysia<sup>[14-16]</sup>. This might be universal simply because mothers who could spend sufficient time with their young infants could more easily undertake EBF than those lacking time due to working or other reasons<sup>[17]</sup>. Furthermore, working mothers in Saudi Arabia are only legally entitled to two months of maternity leave on full pay, and breastfeeding facilities in working environments are not generally available. It is therefore easy to understand why working mothers would be discouraged

from exclusive breastfeeding. The presence of chronic maternal illness and/or maternal complications during pregnancy and/or post-birth were not significantly associated with non-EBF (p = 0.201, 0.267, and 0.70, respectively). Antenatal advice for breastfeeding was found to be significant for EBF with p value of 0.020. Earlier breastfeeding initiation time was found to be significantly associated with EBF (p = 0.018). Use of contraceptives, mode of delivery, gestational age, weight of the baby, and pacifier use were not significantly associated with EBF. Previous studies have reported the negative effects of Cesarean section and low birth babies on EBF<sup>[18, 19]</sup>.

## Conclusion

The rate of exclusive breastfeeding in infants less than 6 months of age was 10.8%. This finding showed that maternal EBF practice in this study was lower than the WHO recommendation on appropriate nutrition for infants who are six months or less. It also indicates the need for programs promoting EBF in order to raise public awareness of EBF practices during the first six months of life.

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