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The frequency and factors affecting exclusive breastfeeding: A cross-sectional study in southern Iran

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ABSTRACT

Background and Objective: Although awareness of the importance of breast milk and breastfeeding has increased, the prevalence of exclusive breastfeeding during the first six months of an infant's life is not optimal. The aim of this study was to determine the frequency of exclusive breastfeeding and factors affecting it among infants under 6 months of age in Bushehr, Iran.

Methods: This cross-sectional study was conducted in 2018 on 403 mothers whose children were under one year of age and referred to health centers in Bushehr Iran. Ten health centers were randomly selected as a sample. Participants completed a questionnaire providing demographic information, information on exclusive breastfeeding and reasons for discontinuation of breastfeeding. Data were analyzed using SPSS software at a significance level of 0.05.

Findings: The frequency of exclusive breastfeeding in this study was 33.7%. Maternal literacy level (P<0.001), father's employment (P=0.018) and the interval between pregnancies (P=0.041) were significantly related to exclusive breastfeeding. The most common reasons for discontinuing exclusive breastfeeding were advice from others (31.9%), infant crying (19%) and mother's perception that her milk was not enough (14.1%).

Conclusion: The results of this study showed that the frequency of exclusive breastfeeding was low in Bushehr. The main reasons for discontinuing exclusive breastfeeding were the advice of others and the mother's mistaken belief that her milk was insufficient. Educational programs to promote breastfeeding should involve not only mothers, but also other caregivers of infants.

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Introduction

Exclusive breastfeeding for the first six months of life is the most beneficial and complete nutritional intervention, often providing infants with adequate vitamins, nutrients and minerals [1-3]. According to the recommendations of the World Health Organization (WHO), breastfeeding should begin in the first hours of life, continue exclusively for up to six months, and continue until the second year of life. Exclusive breastfeeding, according to WHO, is absolute breastfeeding, so the infant receives nothing but breast milk (except for multivitamin drops, iron and ORS) for the first six months of life [4].

Despite the undeniable benefits of breastfeeding, the prevalence of exclusive breastfeeding is low worldwide. According to reports, breastfeeding rates in some developing countries such as India and Turkey are 34% [5] and 38.9% [6], respectively. According to estimates from WHO, only 38% of infants are exclusively breastfed for six months, and this low figure has not changed in the last 20 years. However, one of the goals of WHO is to increase this number to at least 50% by 2025 [7].

Throughout the world, the importance of promoting breastfeeding is emphasized. Despite the growing importance of exclusive breastfeeding, breastfeeding rates worldwide are still unsatisfactory [8]. Several factors affect exclusive breastfeeding and its continuation up to one year. These factors include insufficient breast milk, maternal occupation, lack of support, separation of mother and child, parental awareness, cultural background, illness between mother and child and another pregnancy [9]. The most common reason for cessation of breastfeeding or use of formula other than breast milk is the lack of breast milk, recognized by the mother herself [10-12]. Another reason is the lack of awareness of breastfeeding by the mother and those around her [13-15]. Moreover, health authorities provide no information on the adequacy of breast milk, which, together with the mother's low level of education, may affect breastfeeding [14, 15].

Exclusive breastfeeding for the first six months of life guarantees the health of the infant and is one of the most valuable and easiest ways to contribute to the normal growth of the baby. Moreover, breastfeeding is considered one of the most important factors in reducing mortality rates and contributes to the proper development of infants and maternal health [16]. Despite the above benefits, many mothers discontinue breastfeeding prematurely for various reasons or give the baby unnecessary fluids and extra food [17].

According to the studies, the percentage of exclusive breastfeeding was 37.6% in Bushehr [18]. However, two other studies indicated that exclusive breastfeeding in Iran was 53% [1] and 61% [19]. Since then, no study has been conducted to investigate the frequency of exclusive breastfeeding in Bushehr. Therefore, given the socioeconomic and health status of Bushehr province, this study was conducted to determine the reasons for discontinuing exclusive breastfeeding in this province.

Methods

The type of study and samples

This descriptive cross-sectional study was conducted on 403 parents with under one-year-old children in Bushehr, Iran, in 2018. Inclusion criteria were the women who had 6-12-month-old infants and lived in Bushehr, minimum literacy level, no medical condition and no medication prohibiting breastfeeding. Exclusion criteria included incomplete information in the medical record and unwillingness to cooperate.

Sampling method and sample size:

Sampling followed a two-stage procedure. First, out of the 15 health centers in Bushehr, 10 centers were randomly selected. Then, the proportion of each center was determined based on the number of infants under one year of age covered by Bushehr Health Centers (10 centers). Next, the participating mothers were identified from the mothers of each center using the random number table and the patient information and registration system (SIB) and enrolled in the study based on the inclusion criteria. Before the start of the study, the general

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objectives of the current study were explained to the mothers, and informed consent was obtained from them. All participants were assured that their details would be kept confidential.

The prevalence formula was used to calculate the required sample size with a confidence level of 95% and an error of 0.05. In a national study, the frequency of exclusive breastfeeding was estimated to be approximately 50%. Thus, the required sample size was calculated to be 400 individuals.

Data collection

Data were collected using a questionnaire based on the file registered in the system SIB by a midwife who had been trained regarding the study and data collection. In cases where incomplete information was recorded, additional information was obtained or corrected by visiting to the participant's home. If the selected mother did not wish to participate in the study, another participant was randomly selected. The checklist prepared for data collection included demographic information, obstetric information, information about the infant and mode of feeding, and reasons for failure to exclusively breastfeed. Demographic information included parents' age (year), educational attainment (less than a diploma, degree and college, bachelor's and higher degrees), mother's occupation (household, employed), father's occupation (blue-collar, white-collar, self-employed, unemployed), and family economic status (low, medium, high) reported by self-report. Obstetric information included number of deliveries, gestational age at birth, number of live births, time between marriage and first pregnancy, interval between pregnancies, and mode of delivery. Infant information included infant's gender, birth weight, feeding type for the first 6 months after birth (breast milk only, breast milk–cow's milk, breast milk–formula, breast milk-sugar water, formula-cow's milk) and history of training for exclusive breastfeeding during pregnancy or after birth, which were compiled with the opinions of the research team. Reasons for the failure of exclusive breastfeeding included advice from others, crying infant, mother's perception that the milk was insufficient, mother's occupation, problems with the breast and illnesses of the infant.

Statistical analysis

Data were analyzed using SPSS 22 through descriptive statistics and Chi-square tests at the significance level of 0.05.

Results

A total of 500 women were recruited for the study, of whom 403 completed and returned their questionnaires (response rate: 80.6%). The mean age of fathers and mothers participating in the study was 34.3±6.50 and 30.77±5.74 years, respectively. The other demographic characteristics are shown in table 1. Moreover, 89.3% of the mothers had a wanted pregnancy. The mean interval between marriage and first pregnancy and also between the pregnancy of the infant in the study and previous pregnancy was 15.45±19.34 and 47.97±3.80 months, respectively. Most of the mothers reported to have delivered by cesarean section (54.1%). Most of the babies (51.4%) were male and the birth weight of the infants was 3.19±0.48 kg.

Of the 403 infants who participated in the study, 136 (33.7%) were exclusively breastfed for the first 6 months of their lives. Among maternal demographic factors, education level and interval between pregnancies were significantly related to exclusive breastfeeding (P<0.001). This means that the tendency towards exclusive breastfeeding was higher among mothers with a high level of education and a longer interval between pregnancies. Besides, exclusive breastfeeding was significantly related to the father's employment status, such that the desire for exclusive breastfeeding was stronger among unemployed fathers than among those who were employed (p=0.018).

The most common reason (31.9%) for starting complementary feeding was advice from others to give complementary food or formula. After that, infant crying (19%) and mother's perception that her breast milk (14.4%) was not enough were the most common reasons (table 2).

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In addition, 50.9% of the participating mothers reported that they had breastfed during pregnancy, and 75.2% of them had undergone postpartum breastfeeding training. However, statistical analysis revealed no significant association between breastfeeding training during pregnancy and postpartum breastfeeding training and exclusive breastfeeding (P=0.744 and p=0.067, respectively).

Table 1: Demographic characteristics of the study's participants

Variables		N(%)
Mother's education	Lower than diploma	78(19.3)
	Diploma & college	158(40.2)
	Bachelor's degree & higher	167(41.5)
Father's education	Lower than diploma	118(39.2)
	Diploma & college	128(31.8)
	Bachelor's degree & higher	157(39)
Mother's occupation	Housewife	264(65.5)
	Employed	139(34.5)
Father's occupation	Manual worker	78(19.4)
	Employee	181(44.9)
	Self-employed	135(33.5)
	Unemployed	7(1.7)
Economic status satisfaction	Low	66(16.4)
	Moderate	237(58.8)
	High	100(24.8)
Number of pregnancies	1	133(33)
	>=2	270(67)
Type of delivery	NVD	185(45.9)
	C/S	218(54.1)

Table 2. Frequency of reason for the failure of exclusive breastfeeding

Reasons for breastfeeding discontinuation	N (%)
The advice of others	84 (31.9)
Infant's crying	50 (19)
Mother's perception that her breast milk is insufficient	37 (14.4)
Mother's occupation	34 (14.1)
No weight gain in the infant	26 (9.9)
Infant reluctance to breast milk	12 (4.6)
Breast problem	9 (3.4)
Infant's illness	6 (2.3)
Other reasons (twins, re-pregnancy, desire for having a rotund baby)	3 (1.2)

Discussion

The aim of this study was to determine the frequency and factors affecting exclusive breastfeeding in Bushehr city. The results of this study indicated a low frequency of exclusive breastfeeding among infants less than 6 months of age in Bushehr. The prevalence of exclusive breastfeeding was 33.7% and the main reason for stopping breastfeeding was the advice of the people around the mother who encouraged her to use formula. In the study conducted by Esmaeili, the failure rate of exclusive breastfeeding in the northern regions of Iran was reported to be 72.2% [20]. In a systematic review in Iran, the rate of exclusive breastfeeding was reported to be 53% [1]. In the study of Saki, the frequency of exclusive breastfeeding was 61% [19]. In the study conducted by Salcan in Turkey, this frequency was reported as 61.2% [6]. It seems that the different socioeconomic status,

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which may affect the level of knowledge and awareness of mothers, is responsible for the differences between the results of these studies. Furthermore, since the results of the studies were collected in the form of self-report, they were not precise because in many cases the mothers used water, sugar water or even a pacifier at least once or more. Therefore, the use of various measurement methods has led to different results.

In the study by Behzadifar et al. (2019), the prevalence of exclusive breastfeeding was reported to be 53% in Iran [1]. In the present study, the most common reason for stopping breastfeeding or adding other nutrients to breast milk was the advice of others. Similarly, in the study of Joel Negin (2016), the most common reason for discontinuing breastfeeding or adding nutrients to breast milk was the advice of others (31.9%). In this study, both maternal and paternal grandmothers play an important role in family health [19]. Grandmothers who had successfully breastfed themselves had a significant impact on increasing the prevalence of exclusive breastfeeding, while highly educated grandmothers played a negative role in this regard. For health issues to have a better impact, education should include all relatives and caregivers of the infant. Most health education programs focus only on the mother and child, while fathers and other adult caregivers are ignored [21-23]. In addition to the mother, other caregivers of the infant should also be trained in infant feeding [24].

In the ongoing study, infant crying (19%) and mother's perception that her breast milk was not enough (14%) were the reasons for not exclusively breastfeeding. In the study conducted by Ghaed Mohammadi in Bushehr, lack of breast milk, working mothers and infant crying and restlessness were the most common reasons for the discontinuation of breastfeeding. According to this study, the overuse of formula was due to the inadequate knowledge of private physicians and prescription of formula to mothers [18]. Additionally, the continuous support of working mothers was mentioned as one of the factors influencing successful exclusive breastfeeding [17].

One of the reasons for the low prevalence of exclusive breastfeeding in the present study was probably the low education of the mothers. In the current study, there was a positive relationship between mother's education level and rate of exclusive breastfeeding. The higher the mother's education level was, the greater the desire for exclusive breastfeeding. It is possible that the more educated mothers are aware of the benefits of breastfeeding for both mother and child as well as are more willing to breastfeed their infants. However, many other studies found that less educated mothers were more inclined to exclusive breastfeeding [1, 25-30]. Despite the willingness of more educated mothers to exclusively breastfeed, the intervention of others may effectively reduce this willingness. Infant care by inadequately educated individuals may be one of the reasons for reduced breastfeeding.

Although there was no relationship between maternal occupation and frequency of exclusive breastfeeding in the present study, some other studies found a relationship between these two variables [1, 31-34]. In the studies conducted by Behzadi (2019) and Ghaed Mohammadi (2001), the highest percentage of exclusive breastfeeding was observed among housewives [1, 18]. Working mothers are usually tired, have less time and have more problems with breastfeeding [35]. Postpartum leave for working mothers [36] and cooperation with employers are effective in increasing the breastfeeding rates [37].

In the current study, 75.2% of mothers were trained in postpartum breastfeeding. Although this percentage is higher than the percentage (53%) obtained in a previous study in Bushehr [21], this higher training was not significantly related to exclusive breastfeeding. In the studies conducted by Jalali Aria [15] and Esmaeili et al. [20], no significant relationship was observed between postpartum education and exclusive breastfeeding. This may be due to the fact that the mother is exclusively trained and people around her do not pay attention to proper training. Another reason is inadequate training content or inadequate training time.

Limitations

One of the limitations of this study was that the data were collected through self-report, retrospectively, and without external observation. It was a cross-sectional study which did not reveal any causal relationship between the variables. Longitudinal and cohort studies are recommended for investigating the relationship between

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exclusive breastfeeding and other variables. In addition, the effects of pacifier sucking as a confounding variable were not considered in this study.

Conclusion

The prevalence of exclusive breastfeeding in Bushehr was lower than its average of the Iranian population. Based on the results of this study, neglecting to educate people around breastfeeding mothers regarding infant feeding may lead to discontinuation of exclusive breastfeeding during the first 6 months of the infant's life. Therefore, it seems necessary to teach mothers and all those who directly or indirectly care for the infant the importance of breast milk and breastfeeding during pregnancy.

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Ethical approval

The present study was approved by the Ethics Committee of Bushehr University of Medical Sciences with ethics code of IR.IAU.BPUMS.REC.1397.04

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Conflict of interest

There was no conflict of interest.

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