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# Breast-feeding Continuation in South-Eastern of Iran: the Associated Factors

Fatemeh Roostaei<sup>1</sup>, Seyed Mehdi Tabatabaei<sup>1</sup>, Maryam Zaboli<sup>1</sup>, Razieh Keykhaie<sup>2</sup>, Javad Sharifi-Rad<sup>3,4</sup>, Paridokht Shahrak<sup>1</sup>, Fatemeh Soroush<sup>1</sup>

Department of Health Deputy, Zahedan University of Medical Science, Zahedan, Iran<sup>1</sup>

Department of Health Education, Zahedan University of Medical Science, Zahedan, Iran<sup>2</sup>

Department of Zabol Medicinal Plants Research Center, Zabol University of Medical Sciences, Zabol, Iran<sup>3</sup>

Department of Pharmacognosy, Zabol University of Medical Sciences, Zabol, Iran<sup>4</sup>

**Corresponding author:** Javad Sharifi-Rad, Department of Pharmacognosy, Zabol University of Medical Sciences, Zabol, Iran; Email: javad.sharifirad@gmail.com

## ABSTRACT

**Background:** Breast-feeding not only promotes health in an infancy period, but also leads to human vigor and safety at varied life periods viz. adolescence, youth, middle-age, or even adulthood. Aim: The present study was aimed to determine the factors affecting the breast-feeding continuation effectively for a selected region of Iran. **Methods:** This cross-sectional study was performed on 523 women having less than two year old babies from the selected counties covered by the Zahedan University of Medical Sciences (Khash, Saravan, Sarbaz, Chabahar, Zahedan, Nikshahr, Iranshahr, and Konark) using the stratified sampling method. The Data was completed for the target group by using the check-list which included 3 parts: demographic data, case history of pregnancy, childbirth and mother's statue, and previous records of the newborn up to two years. The obtained data were fed into SPSS software, and all parametric and non-parametric statistical methods were used to analyze the data, especially appropriate to the data type. **Results:** The results showed that the most important factors associated with breast-feeding discontinuation were infant's illness (only up to six months), mother's consciousness, parental support, practical breastfeeding training to the mother, mother's educational level, child's gender, place of birth, pregnancies' interval, mother's ethnicity and residence and the statue of taking (using) narcotics. The data also indicated that on maternal reasons the main factor which impelled most of the mothers to discontinue their breast-feeding up to six months or even before two years was milk shortage in mother's breasts. Moreover, the main child- related factor that compelled most of the mothers for non-continuance of their breast-feeding up to six months or even before two years was child's crying and discomfort. **Conclusions:** It can be safely concluded that promotion of parental education, neglecting child's gender as far as cultural context and preference of a son is considered, observance of pregnancy interval for more than three years, non-smoking in nursing mothers, practical training of breast-feeding to mothers besides conductance of educative programs *via* maternity hospitals and health centers to educate parents about the importance of breast-feeding and benefits of spouse's support can be considered as the influential factors in continuation of breast-feeding.

**Key words:** Breast-feeding continuation, Relevant factors.

## 1. INTRODUCTION

Mother's milk is undoubtedly a great and unique blessing of the God; our almighty, powerful, and alert creator, that has nourished the entire needs of a disabled infant at his/her birth and is regarded as the healthiest, the safest, the freshest, the most accessible and an ideal nourishment for a child during the first 2 years of his/her life. Mother's milk, an exceptional compound with unique characteristics, guarantees to nurture and maintains a child's physical and mental health. In addition, it has innumerable benefits for a nursing mother in terms of health and vitality. In other words, the matchless positive effect of this miraculous milk on maternal and child health is undeniable. Hu-

man milk provides immunological, nutritional, and evolutionary benefits to an infant which cannot be provided by artificial (powder) milk. Till date, extensive studies using advanced epidemiological methods and modern laboratory techniques have successfully proved various and significant advantages of breast-feeding for infants besides its positive influences on mothers, families, and communities (1). Since long, the slogan "there is no substitution for the mother's milk", is popular among masses and most mothers believe that mother's milk (breast-feeding) is the best food for an infant. However, availing exclusive nutrition through mother's milk and its continuum is still negligible in many parts of the world. Effectiveness of these

programs and people's indulgence has been influenced by different factors such as geographical location, social class, economical status, knowledge, attitudes and beliefs of society. Each individual's attitude and function is different with respect to the differences in levels of education, individual or family characteristics, social status and support (2). Breast-feeding not only can be used to promote health in an infancy period, but also leads to human vitality and safety at varied life periods *viz.* adolescence, youth, middle-age, or even adulthood (3). A group of researchers in New Zealand studied the influence of breast-feeding on social-psychological adjustment of adolescents aged 15-18 with their community and reported that longer breast-fed babies had more attachments with their parents and even had a closer contact with them(4).

Breast-feeding is a part of the reproductive process providing maternal health as well as optimal growth for an infant (5). The World Health Organization and the Association of American pediatric stressed on exclusive nutrition of an infant through breast-feeding; at least, up to six months and its continuance with complementary foods up to two years or more (6, 7). Breast-feeding (mother's milk), as the best food for babies and children, has been emphasized in Islamic culture. The Holy Prophet (PBUH) intoned: no milk is better than the mother's milk.

The breakthrough to breast-feed babies in recent years, has been influenced not only by the growing expansion of human knowledge and the vital role of breast-feeding as a prime vaccine for an infant, but also through its effectiveness to reduce diseases such as diarrhea, and acute respiratory infections (8). The onset of lactation has a remarkable impact on the breast-feeding process. Moreover, the onset of breastfeeding within initial half an hour of baby's birth and continuation of its exclusive feeding are considered as the major factors in reducing the morbidity and the scope(or number) of infants' mortality.

Breast-feeding is very important in terms of physical, mental, psychological, and emotional growth of an infant, aside from preventing occurrence of common diseases in him (diarrhea, acute respiratory infections, the infection of middle ear, etc.) Moreover, its endless advantage to the lactating mother is amazing. Hence, the success of breast-feeding is in favor of mothers and kids or better said a large section of society (10).

Globally including Iran, the hospitals supporting infants are trying to promote and teach breast-feeding to mothers. Although these policies and programs have been profoundly implemented in many countries including Iran, and the awareness of breast-feeding and related studies were highly accomplished in most of the countries (11), but unfortunately the rate of exclusive breast-feeding was as low as 21% in Japan (12), 6% in Canada (13), however this rate was relatively higher in different provinces of Iran *viz.* 44% in Zanjan (14), 41.5% in Arak (15) and 33.1% in Kashan (16).

## 2. PATIENTS AND METHODS

The present research was a descriptive-analytic study conducted in Zahedan in 2013-2014. The sample comprised of all the mothers having less than two year old babies, who referred to the Zahedan University health cen-

ters at the time of the study, especially those included as a census except the mothers who were exempted through the exclusion norm of the study. The exclusion norm of the study was: a) Referring mothers whose husbands were imprisoned during the breast-feeding. b) Control method: elimination of the above cases; c) Experiencing anxiety during response to the questionnaire. Control method: calming the mother and eliminating her anxiety

This cross-sectional study was carried out on 523 women having less than two year old babies in the counties covered by the Zahedan University of Medical Sciences *viz.* Khash (42 individuals), Saravan (94 individuals), Sarbaz (38 individuals), Chabahar (50 individuals), Zahedan (145 individuals), Nikshahr (66 individuals), Iranshahr (71 individuals), and Konark (17 individuals). Urban and rural health centers were listed in alphabetical order and among them, the name of the centers were determined based on random numbers. 550 samples were chosen: 284 urban and 266 rural samples. The norm of their inclusion was having less than two years old baby.

Data were collected using a check-list containing 3 parts *viz.* demographic data (7 questions: child's age, mother's age, child's gender, the number of children in the family, mother's education, occupation, and ethnicity), pregnancy care history, childbirth and mother's status (17 questions: the interval between the last child and the previous child of the mother, having health records during pregnancy, training breast-feeding, place of birth, agent of pregnancy, the last method of mother's childbirth, twain of the mother's last pregnancy, practical training after the childbirth, training was conducted by whom, learning data site on the basis of breast-feeding, hospitalization of an infant at birth date, in case of hospitalization, was the baby a NPO? Whether a NPO or not, what was his feed? , the scope of mother's knowledge, level of parental support, smoking) babies' care history up to two years (12 questions: how many months the exclusive feeding of a child was *via* breast-feeding his date of birth? The total duration of breast-feeding (if the child was breast-feeding) from birth according to the month, if a child was breastfed during the first six months of his/her life, and were there other nutrients along with it. What kind of food, a mother used from dummies for her suckling? Does she fed anything else to her suckling (even water) during the first 6 months of his/her life? Which of the following concepts were assumed as the main maternal reasons for discontinuation of breast-feeding? (In case of discontinuing breast-feeding up to 6 months), which of the following concepts were assumed as the main reasons for discontinuation of breast-feeding? (In case of discontinuing breast-feeding up to 6 months),

Which of the following concepts were assumed as the main maternal reasons for discontinuation of breast-feeding? (In case of discontinuing breast-feeding up to 2 years), which of the following concepts were assumed as the main reasons of breast-feeding discontinuation for a baby? (In case of discontinuing breast-feeding up to 2 years), which of the following concepts were assumed as the main other reasons for discontinuation of breast-feeding? (In case of discontinuing breast-feeding up to 2 years), How long did

a mother breastfed her previous child (in case of having previous child, how long did it take).

The check-list was collected by asking the questions from the mothers who had less than 2 year old kids, and was covered by health centers. Furthermore, interviewers chose a list of children; and two year old babies were referred to the health centers in rural and urban areas, designated based on the notebook under continuous care of children. Later, they were restored to the back of the notebook, to complete the number of required samples and after choosing them, the mothers of these children were interviewed.

Descriptive statistics tables were used to analyze data. And to analyze data, parametric and non-parametric statistical methods were used, depending on the data type. Tests such as Pearson and Spearman correlation coefficients, odds ratios calculation, and regression methods formed a part of the tests and used methods, appropriate to the data type. In presentation of the results, 95% of the calculated statistics was presented. The obtained data were entered into SPSS software. Parametric and non-parametric statistical methods were used to analyze data, appropriate to the data type of data.

### 3. RESULTS

The present study was carried out to determine the factors associated with the continuance of breast-feeding up to six months or even up to two years in the coverage area of the Zahedan University of Medical Sciences. 523 mothers having two year old babies were examined. The mean age of the subjects was  $6.6 \pm 1.29$  years old, where the youngest mother was 15 years old and the oldest 53 years old. The results showed that, 71.1% of these mothers breastfed their babies up to six months and 48% breastfed their children up to two years. The mean duration of breast-feeding was  $9.6 \pm 5.19$  months and the mean duration of exclusive breast-feeding was assumed as  $9.1 \pm 4.5$  months. 48.6% of these babies were girls and 4.51% were boys. 36.3% were the first child of the family, 21.4% the second child, 17.4% the third child and the remaining babies were the fourth child of the family or more. Addressing the subject of an interval between the mother's pregnancies, 36.3% of the babies were the first child. 27.2% of them had a lower interval, less than three years. 27% of these children had intervals between 3 to 5 years and the rest had more than 5 years interval. 53.2% of these mothers lived in cities and 46.8% of them lived in rural areas. 90.8% of the mothers were housewives and 9.2% of them were employed.

Moreover, the data showed that on maternal reasons, the main factor that most of the mothers noted for non-continuance of their breast-feeding up to six months or even up to two years was shortage of milk in mother's breasts. And as far as baby related reasons were concerned, the main factor that most of the mothers noted for non-continuance of their breast-feeding up to six months or even up to two years was baby's crying and discomfort. Other results are shown in Tables 1 to 3.

Chi-square test statistically showed that there was a meaningful relationship between the mother's awareness and breast-feeding continuation up to six months ( $P=0.000$ ), in other words, breast-feeding continuation was much longer for those babies whose mothers had more awareness in relation to their infant's feeding. However, it also depicted that there was significant statistical correlation between mother's awareness and breast-feeding con-

Continuance of breast-feeding		Six months				Chi-square test
Dependant variable		Yes		No		
		Frequency	Percent	Frequency	Percent	
Mother's awareness	Low awareness	91	57.6	67	42.4	P=0.000
	High awareness	276	77.1	82	22.9	
Continuance of breast-feeding		Two years old				Chi-square test
Dependant variable		Yes		No		
		Frequency	Percent	Frequency	Percent	
Mother's awareness	Low awareness	72	45.6	86	54.4	P=0.505
	High awareness	175	48.9	183	51.1	

**Table 1. The frequency distribution of the breast-feeding continuance in mothers having two year old babies, those covered by the Zahedan University of Medical Sciences up to six months or even up to two years based on mother's awareness.**

Continuance of breast-feeding		Six months				Chi-square test
Dependant variable		Yes		No		
		Frequency	Percent	Frequency	Percent	
Husband's support	Non-supported	148	64.6	81	35.4	P=0.005
	Supported	224	76.2	70	23.8	
Continuance of breast-feeding		Two years old				Chi-square test
Dependant variable		Yes		No		
		Frequency	Percent	Frequency	Percent	
Husband's support	Non-supported	94	41	135	59	P=0.006
	Supported	157	53.4	137	46.6	

**Table 2. The frequency distribution of the breast-feeding continuance in mothers having two year old kids, those covered by the Zahedan University of Medical Sciences up to six months or even up to two years based on their husbands support.**

Continuance of breast-feeding		Six months				Chi-square test
Dependant variable		Has		Not have		
		Frequency	Percent	Frequency	Percent	
Practical training of breast-feeding	Yes	278	78.4	79	21.6	P=0.000
	No	79	55.2	64	44.8	
	Homebirth	2	20	8	80	
Continuance of breast-feeding		Two years old				Chi-square test
Dependant variable		Has		Not have		
		Frequency	Percent	Frequency	Percent	
Practical training of breast-feeding	Yes	187	62.9	179	48.9	P=0.006
	No	53	37.1	90	62.9	
	Homebirth	2	20	8	80	

**Table 3. The frequency distribution of the breast-feeding continuance in mothers having two year old kids, those covered by the Zahedan University of Medical Sciences up to six months or even up to two years based on the practical training of lactation.**

tinuation up to two years. ( $P=0.505$ ). Mother's awareness: she must obtain 3 scores out of 5, relating to the questions of awareness measurement. (Awareness: the onset of lactation after childbirth- the onset of supplementary feeding- correct option of breast-feeding- influential factors which increased mother's milk- motives or mother's milk sufficiency.)

Chi-square test statistically showed a meaningful relationship between husband's support and breast-feeding continuation up to six months or even up to two years ( $P < 0.01$ ), in other words, the breast-feeding continuation was longer for those kids whose mothers were effectively supported by their husbands. Parental support included: a) Encouraging mother to breast-feed her baby; b) Helping a mother to breast-feed. She must obtain, a least, one score out of two (17). Chi-square test statistically showed, that there was a significant relationship between practical breast-feeding training of the mothers and breast-feeding continuation up to six months or even up to two years ( $P < 0.01$ ), in other words, the breast-feeding continuation was much longer, for those children whose mothers had a practical training of breast-feeding.

#### 4. DISCUSSION

The results showed that the most important factors associated with breast-feeding discontinuation were; infant's illness (only up to six months), mother's consciousness, parental support, practical breastfeeding training to the mother, mother's educational level, child's gender, place of birth, pregnancies' interval, ethnicity and residence of the mother, and the statue of taking (using) narcotics.

The data also demonstrated that based on maternal reasons, the main factor that affected most of the mothers to discontinue their breast-feeding up to six months or even up to two years was milk shortage in mother's breasts. And in baby-related reasons, the main factor that most of the mothers noted for non-continuance of their breast-feeding up to six months or even up to two years was child's crying and discomfort. Findings related to the first specific purpose *viz.* "determining the baby's illness relationship with exclusive nurturing through breast-feeding up to six months or even up to two years", depicted a significant relationship between the child's illness and breast-feeding continuation up to six months ( $P = 0.24$ ), but there was no significant relationship between the child's illness and breast-feeding continuation up to two years ( $P = 1$ ). Likewise, in a study conducted by Ghaed Mohammadi *viz.* "determining the reasons of breast-feeding continuation or discontinuation for under one year old babies pertaining to burghess women of Bushehr in 2000" (18), there was a meaningful relationship between the child's illness and breast-feeding. Findings related to the second specific purpose *viz.* "determining the percentage of the mothers who lactated their children up to six months or even up to two years", showed that 71.1% of these mothers breastfed their babies up to six months and 48% breastfed their kids up to two years. In a similar study carried out by Hosseini *viz.* "influential factors during lactation in Faruj, using survival analysis in 2009"(19), the percentage of the breast-feeding continuation up to two years was reported as high as 46.2%.

Findings, related to the third specific purpose *viz.* "determining the correlation between demographic factors (occupation-education-economic situation-age and...) and breast-feeding continuation up to six months or even up to two years in the mothers", there was generally nil significant relationship between demographic factors and breast-feeding continuation. But in some cases, in the aforementioned states, this correlation was significant up to the period of six months or even up to two years. The Chi-square test statistically showed that, there was nil meaningful relationship between the mother's education and breast-feeding continuation up to six months ( $P = 0.114$ ), but the results showed that there was a meaningful statistical correlation between the mother's education and breast-feeding continuation up to two years ( $P = 0.025$ ), the findings also showed that here was nil significant relationship between the mother's ethnicity and breast-feeding continuation up to six months ( $P = 0.103$ ), but the results showed that there was a meaningful statistical relationship between the mother's ethnicity and breast-feeding continuation up to two years ( $P = 0.010$ ).

Additionally, the results revealed that, statistically, there was a meaningful relationship between the mother's residence and breast-feeding continuation up to six months ( $P = 0.007$ ), in other words, breast-feeding continuation up to six months was longer for those children whose mothers lived in cities. But statistical results showed nil significant relationship between the mother's residence and breast-feeding continuation up to two years ( $P = 0.540$ ). In a similar study by Jamshidi Avanaki on "influential factors during breast-feeding" (20), there was a meaningful correlation between demographic factors and breast-feeding duration.

Findings, related to the fourth specific purpose *viz.* "determining the correlation of the mother's awareness with breast-feeding continuation up to six months or even up to two years" statistically depicted a meaningful relationship between mother's awareness and breast-feeding continuation up to six months ( $P = 0.000$ ), in other words, breast-feeding continuation was longer for those mothers who had more awareness toward infant's feeding. But the statistical results showed, a non-significant statistical correlation between mother's awareness and breast-feeding continuation up to two years ( $P = 0.505$ ). In a similar study by Ghaed Mohammadi *viz.* "determining the continuation or discontinuation reasons of breast-feeding for under one year old babies pertaining to burghess women of Bushehr in 2000" (18), there was a meaningful relationship between mother's awareness and breast-feeding.

Findings related to the fifth specific purpose *viz.* "determining the parental support relationship with the breast-feeding continuation up to six months or even up to two years", showed that statistically, there was a significant relationship between parental support and breast-feeding continuation up to six months or even up to two years ( $P < 0.01$ ), in other words, breast-feeding continuation was longer for those children whose mothers had their husbands support. In a similar study by Khayati on "the reasons for breast-feeding cessation and the expectations of nursing mothers from their families and society in Sanandaj" (21); there was a meaningful relation-

ship between parental support and breast-feeding continuation. Findings, related to the sixth specific purpose *viz.* “determining the mother’s illness relationship with the breast-feeding continuation up to six months or even up to two years”, showed that there was no significant relationship between mother’s illness and breast-feeding continuation up to six months ( $P=0.084$ ). In addition, there was no meaningful relationship between mother’s illness and breast-feeding continuation ( $P=0.062$ ). Likewise, in a study carried out by Hamidi *viz.* “examining the reasons of using milk powder for less than one year old suckling in Chahar-Mahal Bakhtiari in 2006” (22), a significant relationship between the mother’s illness and breast-feeding continuation was reported. This probably was due to the fact that in Sistan and Baluchestan, nursing mothers are never conscious of their health and continue breast-feeding even in extreme conditions.

Findings related to the seventh specific purpose *viz.* “determining the mother’s smoking relationship with breast-feeding continuation up to six months or even two years”, statistically showed, a significant relationship between mother’s smoking and breast-feeding continuation up to six months ( $P=0.001$ ), in other words, breast-feeding continuation up to six months was longer for those kids whose mothers never smoked. But this test statistically showed no significant relationship between mother’s smoking and breast-feeding discontinuation up to two years ( $P=0.353$ ). Nevertheless, in a similar study by Ghaed Mohammadi *viz.* “determining the breast-feeding continuation or discontinuation reasons for under one year old kids pertaining to burges women of Bushehr in 2000” (18), a meaningful relationship between smoking and breast-feeding was reported.

Findings related to the eight specific purpose *viz.* “determining the twinning case history relationship with the breast-feeding continuation up to six months or even up to two years” statistically showed non-significant relationship between twinning of the babies and breast-feeding continuation up to six months or even up to two years ( $P>0.05$ ). But in the study of Borhani *viz.* “False beliefs and effective factors related to breast-feeding shortage pertaining to mothers who referred to all health and maternity hospitals, in Rasht especially in the third quarter of 1993” (23) the main factor was breast-feeding shortage for twinning. Maybe, lack of twinning relationship with breast-feeding continuation in our study population was due to the fact that mothers never paid attention to their health and continued breast-feeding.

## 5. CONCLUSION

According to the present findings, several factors affect the duration of breast-feeding and thus must be effectually considered. Training mothers through midwives is quite essential, especially in the course of prenatal care or immediately after delivery. In this context, the need for training and retraining of medical staff in breast-feeding has become more evident. No doubt, husbands support is also very important for breast-feeding. So, conduction of awareness programs about the importance of breast-feeding for spouses is not only effective but also encourages them to assist their wives to have a successful breast-feed-

ing. Finally, the promotion of parental education, negligence of the child’s gender in cultural context and preference of a son, observance of the pregnancy interval for more than three years, non-smoking in nursing mothers, and practical training of breast-feeding are advised to the mothers especially those who approach the maternity hospitals and health centers.

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## CONFLICT OF INTEREST: NONE DECLARED.

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