

The Contributing Factors Associated with Breastfeeding duration in Iranian Mothers, 2012

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Abstract: Background and objective: Breast milk is an ideal nutrient for newborn babies not only during infancy to ensure health, but also in adulthood to reduce the risk of many chronic diseases. Since there are different breastfeeding patterns in every society, the present research was conducted to find out the contributing factors associated with breastfeeding duration in Iranian mothers, 2012. **Methodology:** In this analytical-descriptive cross-sectional study, a total of 1400 mothers with children of one to three years old (700 girls and 700 boys), who had visited the medical and healthcare centers in Zanjan for their 1-3 year medical care, were randomly selected through cluster random sampling. The data was collected by a questionnaire including individual characteristics and information about the mothers, their children, and feeding with breast milk. Data analysis was done using descriptive-inferential statistics and SPSS. At the first stage, Chi-Square Test, Fischer's Exact Test and ANOVA were used for unvaried analysis. At the next stage, the multiple logistic regression analysis was employed. **Findings:** According to the results, the mean of lactation period was 14±1.8 months and 58% of the mothers had begun breastfeeding their children at the first half-hour after childbirth. Moreover, 34% of the mothers had continued exclusive breastfeeding for 6 months. At 1, 3, 6, 12 and 24 months after childbirth, the breastfeeding rates were 90, 60, 45, 34 and 5 percent respectively. In this study, the lactation period had a significant relationship with mother's knowledge ($p<0.0001$), attitude ($p<0.001$), age ($p<0.001$) and the time supplementary feeding was started ($p<0.001$). **Conclusion:** According to the results, various factors contribute to the lactation period, which could be extended by planning and taking great measures for improvement.

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1. Introduction:

The main issue of children's health would ensure the future of health in every country all over the world. Proper and clean nutrition is essential in creating and maintaining such vital issue [Riva et al, 2009]. As an ideal nutrient for newborn babies, breast milk not only would safeguards the human health during infancy, but also ensures health and well-being throughout adolescence, young adulthood, adulthood and even old age [Scott et al., 2010]. Breast milk never loses its nutritional value over time and has a vital role as food source even for two-year-old infants, providing up to one-third of all their energy demand. Breastfeeding could make emotional relationship between mothers and their children. It can also prevent several infections and allergies, helping mothers to lose the extra weight gained during pregnancy, reducing the risk of several cancers and preventing osteoporosis and hip fractures [Yang et al, 2004]. In their study conducted on 15 to 18-year-old teenagers, New Zealand researchers intended to find out the effect of breast milk on psychosocial adjustment of adolescents. The obtained results suggested that children who were used breastfed for a longer time, built closer relationship and attachment with their parents [Kaneko et al.,

2006]. Even though great efforts have been made in Iran for encouraging young mothers to feed their children with breast milk, it is critical to annually examine the outcome of such efforts in different parts of the country to measure the breastfeeding rates and the contributing factors [Rostamnejad et al., 2004]. The number of mothers refraining from breastfeeding their babies for various reasons is much [Batal et al., 2006]. According to several studies, around 100% of mothers initially set to breastfeed their child. Within one month, however, this figure drops to 70%. After about 6 months, 20% of mothers continue breastfeeding, and by the end of one year, only 5% of them persist on this important issue [Chandrashekar et al., 2007]. The breastfeeding trend varies in mothers depending on cultural, social and economic conditions [Scott et al., 1999]. The role of culture and habits of maternal nutrition, feeding and child care is vital and could not be ignored, since it ultimately leads to physical, mental and emotional health [Batal et al., 2006]. The investigation in Zanjan demonstrated that exclusive breastfeeding with mother's milk decreased from 60% in the first month to 26% within 4 months and then down to 12% by the end of 6 months after childbirth [Koosha et al., 2008]. Therefore, the present research was carried out to find

out the contributing factors to lactation period in mothers visiting the medical and healthcare centers in Zanjan during 2012.

2. Methodology

This analytical-descriptive cross-sectional study was conducted on a total of 1400 mothers with children of 1 to 3 years old (700 girls and 700 boys) who had visited medical and healthcare centers in Zanjan. The multistage cluster sampling was used in a way that Zanjan city was divided into four regions including North, South, East and west. Then, two medical centers were selected from each region. Finally, the study samples were randomly selected according to the contribution of each center, considering the sample size and the population covered by the centers. The information was collected by inquiring mothers through a questionnaire containing three sections about mothers' individual characteristics, information about children, and feeding them with breast milk. Validity of the questionnaire was determined through content validity and reliability using test-retest of 95%. Having been collected, the data were statistically analyzed through SPSS, in which the p-value was less than the significant level at 0.05.

First, Chi-Square Test, Fischer's Exact Test and ANOVA were used for unvaried analysis. Having been identified to be separately effective on the lactation period, the variables were next examined together through the multiple logistic regression analysis to observe their collective effect.

3. Findings

According to the results, the average age of the studied children was 12.8 months and standard deviation of sample society was 8 months, and also 64.8% of the mothers ranged from 20 to 30 years old (28.06 on average with standard deviation of 5.56 years). Moreover, 27.5% of them had primary education and 84% were housewife. As for their husbands, 41.8% ranged from 20 to 30 years old (32.63 on average with standard deviation of 6.43 years). 26.7% of had secondary education and 46% were self-employed. Furthermore, 56.8% of the families had one child and 63.5% of them fell under the middle-income class.

According to the results, the median duration of lactation was 14 ± 1.8 months and 58% of the mothers had begun feeding their children with breast milk at the first half-hour after childbirth. Moreover, 34% of the mothers had continued feeding their children exclusively with breast milk. 84.4% of them, breastfed their children (while the children were sick) to sleep at night. 98.8% of them breastfed their children when they were sick. The obtained results indicated that the lactation period dropped from 90% in one month after childbirth to 5% within 24 months. [Diagram 1]

The preliminary analysis of mothers' individual characteristics and their link to lactation period showed there was a significant relationship between the mother's age, education level, mother's knowledge and attitude, child's birth order, and the household size. (Table 1)

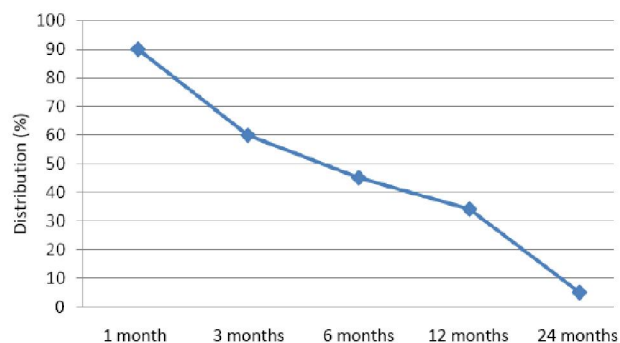


Diagram 1: the distribution of lactation period in mothers visiting the medical and healthcare centers in Zanjan

According to the results obtained from preliminary analysis, the lactation period had a significant relationship with the time that supplementary feeding was started ($p=0.01$), knowledge of correct breastfeeding techniques ($p=0.02$), benefits of breast milk ($p=0.01$), how to set the intervals to breastfeeding ($p=0.04$), the frequency

of breastfeeding in 24 hours ($p=0.000$). Similarly, there was a significant relationship between lactation period and the tool used for feeding the baby with milk powder ($p=0.01$), the use of pacifier ($p=0.01$), the frequency of breastfeeding in a day ($p=0.01$), breastfeeding children when they are sick ($p=0.01$) and breastfeeding to sleep at night ($p=0.01$).

Table 1: A number of contributing factors to lactation period of mothers visiting the medical and healthcare centers in Zanjan

Variable	The lactation period				P	
	Distribution of 6<	Distribution of 6-12	Distribution of 12-18	Distribution of 18-24		
Household size	1330 (95%) <4	911 (68.5%)	224 (16.9%)	106 (8.6%)	103 (7.8%)	0.001
	70 (5%) ≥4	44 (63.8%)	11 (17.3%)	8 (12.4%)	4 (5.5%)	
Child's birth order	896 (64%) 1-2	636 (71.3%)	161 (18.7%)	53 (6.2%)	26 (3.8%)	0.03
	504 (36%) ≥3	372 (74.3%)	60 (12.3%)	32 (7.8%)	20 (4.6%)	
Mother's occupation	Unemployed (5%) 70	50 (72.7%)	13 (18.3%)	4 (6.2%)	3 (2.8%)	0.006
	Employed (95%) 1330	970 (73%)	199 (15%)	93 (7.3%)	46 (4.7%)	
Economic status	Poor (36%) 504	352 (70.3%)	85 (17.5%)	35 (7%)	20 (5.2%)	0.439
	Average (55%) 770	569 (74.1%)	107 (14.7%)	53 (7.7%)	26 (3.5%)	
	Good (9%) 126	100 (80.7%)	12 (10.3%)	9 (6.4%)	3 (2.6%)	
Mother's BMI	Thin (6%) 84	64 (77.5%)	9 (11.9%)	5 (5.8%)	4 (4.8%)	0.231
	Normal (46%) 644	476 (74.5%)	96 (15.7%)	38 (6%)	18 (3.8%)	
	Overweight (32%) 448	331 (74.4%)	71 (16%)	24 (5.3%)	20 (4.3%)	
	Obese (16%) 224	181 (80.7%)	23 (10.5%)	13 (6.5)	4 (2.3%)	
Mother's education level	Uneducated (26%) 364	280 (77.1%)	40 (11.3%)	25 (7.2%)	14 (4.4%)	0.125
	Primary and secondary (6%) 84	71 (85%)	6 (8.7%)	3 (4.6%)	2 (1.7%)	
	High-school (68%) 952	847 (89.2%)	47 (5.6%)	28 (3%)	19 (2.2%)	
	University (6%) 84	59 (71.7%)	18 (22.8%)	3 (3.2%)	2 (1.7%)	
Mother's age	84 (6%) ≤25	57 (68.8%)	9 (18%)	6 (7.2%)	19 (2.2%)	0.0001
	938 (67%) 25-35	712 (76.9%)	121 (13.8%)	56 (5.7%)	2 (2.3%)	
	294 (21%) ≥36	232 (79.8%)	26 (9.8%)	20 (7.3%)	4 (5%)	
Father's age	70 (5%) ≤25	47 (68.8%)	12 (18%)	4 (7.2%)	28 (3.6%)	0.137
	924 (66%) 25-35	674 (73.9%)	101 (11.8%)	73 (8.7%)	10 (3.2%)	
	406 (29%) ≥36	312 (77.8%)	40 (10.8%)	28 (7.3%)	3 (6%)	
Father's education level	Uneducated (21%) 298	223 (75.1%)	38 (13.3%)	20 (7.2%)	46 (5.6%)	0.871
	Primary and secondary (7%) 98	83 (85%)	7 (6.7%)	6(5.6%)	4(2.7%)	
	High-school (70%) 983	874 (89.2%)	74 (7.6%)	58(6%)	24(2.2%)	
	University (23%) 322	228 (71.7%)	64 (20.8%)	16(5.2%)	7(2.3%)	

However, there's no significant relationship between the lactation period and the mother's occupation, BMI (mother's body mass index), education level (Table 1), the family's economic status, the child's gender ($p=0.128$) and whether the child's gender is favorable to parents or not ($p=0.238$). The analysis of variables a long with

using the multiple logistic regression indicate that lactation period had significant relationship with mother's knowledge ($p<0.0001$), attitude ($p<0.001$), age ($p<0.01$) frequency of feeding the child with breast milk ($p<0.01$), and the time supplementary feeding was started ($p<0.001$).

Table 2: the final factors contributing to lactation period of mothers visiting the medical and healthcare centers in Zanjan

Variable	OR	P-value	Confidence interval	
			Low	High
Employed mother	2.12	0.002	1.84	7.64
Unwanted pregnancy	2.34	0.01	2.73	71.8
Household size >5	3.27	0.001	2.34	7.34
Child's birth order ≥3	3.76	0.014	3.31	23.21
Age over 25 years old	14	0.001	10.27	34.67
Satisfactory knowledge of mother	27.3	0.000	34.21	41.2
Positive attitude of mother	56.7	0.001	45.17	50.56
Undernourished children	3.035	0.012	2.32	7.21
Breastfeeding baby to sleep	6.18	0.023	1.78	9.34
Breastfeeding when the baby is sick	5.45	0.012	4.12	7.23
Breastfeeding for more than 7 times a day	6.73	0.021	5.38	9.32
Use of pacifier	3.21	0.011	1.23	12.21
Supplementary feeding within before 6 months	3.23	0.001	2.01	8.71

4. Discussion

According to the results of this study, the mean period of lactation was 14 ± 1.5 months. The observed duration of breastfeeding was similar to case studies in other countries such as Saudi Arabia (Kordy et al., 2009) and Hawaii (Riva et al., 2009), while it was shorter in comparison with other Iranian cities such as Zahedan (Roudbari et al., 2006) and Mazandaran (Veghari et al., 2011). Furthermore, 58% of the mothers had begun breastfeeding their children at the first half-hour after childbirth, which was less than 98% and 85% previously reported by other researchers (Almasi et al., 2006 / Roudbari et al., 2006). The lactation period will be extended if the first breastfeeding is done within 2 hours after childbirth. In fact, mothers who breastfeed their babies within the first two hours after delivery and make early skin-to-skin contact are more likely to breastfeed longer than mothers who never manage to do so. Therefore, feeding new-born infants with breast milk should be started as soon after the birth as possible, since delay in the postnatal breastfeeding can contribute to shortening the lactation period. [Kordy et al., 2009] It is essential to properly train the involved personnel at the health centers, inform them of infant nutrition and offer prenatal educational courses in order to prepare mothers and newborn babies for early feeding with breast milk [Venancio et al., 2009].

According to the results, only 24% of the mothers spent 6 months feeding their children exclusively with breast milk, which is in contrast with what was reported in other studies done by Ayatollahi and colleagues (Almasi et al., 2006) as well as Roudbari et al., 2006. They had calculated the duration of 6-month exclusive breastfeeding to be 69% and 78% respectively. According to the results obtained from the present study, there was no significant relationship between individual characteristics such as the family's economic status, the mother's BMI, education level and the fetal gender. The above results were consistent with the reports given by Almasi et al, 2006 as well as Roudbari et al, 2006. It seems that factors such as the family's knowledge and attitude towards breastfeeding are more effective on lactation period as compared to economic issues. In this study, the duration of breastfeeding in young mothers under 25 years old was shorter than rest of the samples. Experts believe that young mothers tend to breastfeed their babies for a short period because of insufficient information about benefits of breast milk and correct methods of breastfeeding, which altogether leads to shortened lactation period [Camurdan et al, 2008].

Based on results obtained from the present study, housewife mothers are more likely to

breastfeed their babies as compared with employed mothers. Moreover, some researches have shown that lactation period is shorter in employed mothers than housewives [Camurdan et al., 2004]. One of the most common reasons why mothers stop breastfeeding is that they return to work [Chezem et al., 2009]. In this study, the lactation period had a significant relationship with the mother's knowledge about benefits of breast milk, physiology and techniques of breastfeeding. Studies indicate that mothers who are trained how to breastfeed during the prenatal care tend to breastfeed their babies for a longer time [Hoyer et al., 2010]. As researchers have declared, the postnatal breastfeeding education is highly essential for mothers who ought to be informed of several facts including the physiology of lactation, how breastfeeding period is lengthened, how to prevent and control common problems during pregnancy (including breast and nipple), how to treat the adverse events after discharge from hospital, frequency of breastfeeding as well as the law of supply and demand [Cropley et al., 2008]. The results showed a significant relationship between lactation period and proper attitude of mothers. It seems that improvement in attitude of mothers have corrected their attitude.

In this study, the increased frequency of breastfeeding led to extended lactation period, which was longer in children who drank breast milk for over 8 times a day as compared to other children. Furthermore, mothers who breastfed their babies for 10-15 minutes each time tended to have longer lactation period.

According to the results, the supplementary feeding within 6 month after childbirth would shorten the lactation period. As states, early supplementary feeding of infants can decrease the maternal milk production. Leung et al., (2008) believes the sooner supplementary nutrients are given to a child, the shorter lactation period becomes.

5. Conclusion

According to the results, the lactation period of mothers living in Zanzan is relatively short. In this study, various factors were contributing to the maternal lactation period. There are several measures to be taken including an emphasis on correcting the mentioned problematic factors through training mothers and their husbands so as to encourage the parents to feed their newborn babies with breast milk. Since the key to success in breastfeeding requires that we support the mother for acquiring useful knowledge and skills, the physicians, from the first place, ought to learn and trust their experience and then transfer it to others particularly mothers.

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