Short Communication

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The Relationship between Mothers' Empowerment in Breastfeeding with Exclusive Breast Feeding in Infants

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ABSTRACT

BACKGROUND AND OBJECTIVE: Exclusive breastfeeding until 6 months has a positive effect on the maternal and the child health. In the Qur'an had also been mentioned to the nutrition of infant with breastfeeding. Knowing the effective factors on it has significant role in promoting exclusive breastfeeding policy. This study aimed to investigate relationship between the mothers' empowerment in breastfeeding with exclusive breastfeeding and identification of related demographic-reproductive factors.

METHODS: The cross-sectional study was done on 370 mothers with a six-month-old child admitted to the primary health care centers in Noor Township. Mothers were categorized according to type of breastfeeding to two the exclusive breastfeeding and the non-exclusive breastfeeding groups. The mothers' empowerment in breastfeeding was assessed by breastfeeding empowerment questionnaire. The questionnaire includes seven domains of knowledge, attitude, skills of proper breastfeeding technique, skills of preventing and solving breastfeeding problems, breastfeeding sufficiency, receiving family support and Breastfeeding self-efficacy with probability total score in range of 45 to 225.

FINDINGS: The mean total score of the mothers' empowerment domains in breastfeeding in the exclusive breastfeeding group (202.70±13.12) is significantly higher than the non-exclusive breastfeeding group (160.59±27.82) (p=0.015). In the final analysis after entering variables in the logistic regression model, the breastfeeding empowerment's domains including; attitude (OR=1.688, CI-95%=1.137-2.506, p=0.009), skills of proper breastfeeding technique (OR=1.471, CI-95%=1.078-2.007, p=0.015), skills of preventing and solving breastfeeding problems (OR=1.521, CI-95%=1.099-2.106, p=0.011), breastfeeding sufficiency (OR=5.150, CI-95%=2.707-9.795, p=0.001), receiving family support (OR=1.636, CI-95%=1.184-2.260, p=0.003) and Breastfeeding self-efficacy (OR=1.113, CI-95%=1.088-1.139, p=0.001) were found as significant related factors.

CONCLUSION: The findings of the study showed that knowledge alone cannot increase the prevalence of breastfeeding, but should also focus on other domains of mothers' empowerment, especially the belief to breastfeeding sufficiency in mothers.

KEY WORDS: *Exclusive Breast Feeding, Empowerment, Infant.*

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Introduction

An appropriate nutrition program for breastfeeding is one of the topics mentioned in the complete and perfect book of Quran (1). Scientific evidence over the years has proven the benefits of breast milk, including antibacterial properties and immunological protection, which have long-term positive effects on maternal and child health (2–5). Family, community, environment, and economic development also benefit from the advantages of breastfeeding (6,7). Exclusive breastfeeding is giving only breast milk to the infant until the end of six months of age without giving any solid food or other liquid, even water, with the exception of vitamin drops or syrups, mineral supplements and medications prescribed by the doctor (8).

In 2011, the overall rate of exclusive breastfeeding was less than 40% worldwide, decreasing to 37% in 2012. At the sixty-fifth session of the World Health Assembly in the same year, it was stipulated that this rate should reach 50% by 2025 (9). This figure has been reported 39% in developing countries (5), and 13% to 77% in Iran (10). In the study of Zahedpasha et al., the rate of exclusive breastfeeding in infants who started breastfeeding during the first 60 minutes was 89.5% (11). Knowing the factors affecting the onset and the length of the breastfeeding period has a significant role in promoting the exclusive breastfeeding policy (12). Although studies across the world have shown that factors such as mother's knowledge about the benefits of breastfeeding, mothers' breastfeeding attitudes, age of marriage, higher education, family income, family support, decision making during pregnancy about infant breastfeeding, early breastfeeding experience and breastfeeding self-efficacy are effective in breastfeeding (13, 14), few studies have been dedicated to mothers' breastfeeding empowerment and the associated factors on a large scale.

In addition to factors such as mother's knowledge and attitude about breastfeeding and its adequacy, mothers' breastfeeding empowerment also covers other domains such as proper breastfeeding techniques, skills for prevention and management of breastfeeding problems, and perceived family support (15). Considering the importance of exclusive breastfeeding and the necessity of conducting a study to provide basic information on the status of the empowerment of lactating women and its relationship with exclusive breastfeeding, the present study was conducted to determine the relationship between mothers' breastfeeding empowerment and exclusive breastfeeding, and to identify the associated factors. These findings can be used to design evidence-based interventions to promote exclusive breastfeeding.

Methods

This cross-sectional study was approved by the ethics committee of Babol University of Medical Sciences with the code MUBABOL.HRI.REC.1396.118, and carried out among 370 mothers of six–month – old infants who had been referred to health centers in Nur county, northern Iran, for the six – month vaccination. There are 17 health centers in Nur (10 rural centers, 3 urban centers and 4 urban-rural centers), and these centers cover a total of 77 health houses (25 up-country health houses, 52 health houses on the fields) and 8 medical bases (7 medical bases on the fields and one up-country medical base).

Mothers with informed consent, having a six – month – old infant at the time of entering the study, and the ability to understand and complete the questionnaire were included. After obtaining informed consent, the qualified mothers completed the breastfeeding empowerment and demography–fertility questionnaires. To determine the sample size, the results of a similar study by Olang et al. (16) with a test power of 90% and type 1 error of 0.05 were used, and 307 patients were selected (considering the exclusive breastfeeding as dependent variable), while the researcher considered a larger sampling size. Convenience sampling with a continuous method was used through completing the questionnaires from December 22, 2017 until April 4, 2018. The demography–fertility variables questionnaire was designed by the research team, which included age, education, occupation, family status, number of live births, intended or unintended pregnancy, gestational age, type of delivery, attending physiological delivery training courses, incentives for breastfeeding, and the current type of breastfeeding. The mothers' breastfeeding empowerment questionnaire was used in this study, which was designed by Heidari et al. in 2015 to evaluate the variable of breastfeeding empowerment and its validity and reliability has been determined in Iranian society (15).

The questionnaire consisted of 45 items in 7 domains of knowledge (5 questions), attitude (6 questions), proper breastfeeding skills (11 questions), skills for prevention and management of breastfeeding problems (6 questions), adequacy of breastfeeding (4 questions) perceived family support (6 questions) and self-efficacy of breastfeeding (7 questions) based on the five-point Likert Scale. Scores were in the range of 1

(totally disagree) to 5 (totally agree). The total likelihood score was 45 to 225. The higher scores in each domain reflected the greater empowerment of the mother. In this study, mothers was categorized into two groups of exclusive breastfeeding (only giving breast milk to the infant until six months without giving any solid food or other liquid, even water, with the exception of vitamin drops or syrup, mineral supplements, and medications prescribed by the physician), and non-exclusive breastfeeding (relative breastfeeding or feeding with powdered milk) based on the type of infant feeding. After receiving verbal consent, study objectives were explained to participants and they were reassured that they are free to leave whenever they wish to leave the study and their information will be kept confidential during data collection and analysis. After completing the questionnaire, data were analyzed using SPSS version 16 and statistical tests of Chi-square, T-test, and logistic regression, while $p<0.05$ was considered significant.

Results

Overall, 370 mothers of six – month – old infants with a mean age of 28.96±5.41 years were studied. Most of them had academic education (35.9%), were housewives (90.5%), and had intended pregnancy (86.9%), and 66.8% of them had exclusive breastfeeding. Although demographic and fertility differences were observed between the two groups of exclusive breastfeeding and non-exclusive breastfeeding, these differences were only significant in terms of unintended pregnancy (p=0.047) and type of incentive for breastfeeding (p=0.0001), while it was close to significance level in terms of the gestational age of the infant (p=0.056) (Table 1).

Table 1. Comparison of demographic – fertility characteristics of mothers of the two groups of exclusive breastfeeding and non–exclusive breastfeeding

Type of feeding for 6–month–old infant Variable	Exclusive N(%)	Non-exclusive N(%)	P-value (T-test or chi-square)
Age (years) (Mean±SD)	29.19±5.31	28.50±5.31	0.235
Educational status			
Elementary	22 (8.9)	11 (8.9)	
Secondary school	54 (21.9)	25 (20.3)	0.989
High school	83 (33.6)	42 (34.2)	
Higher Education	88 (35.6)	45 (36.6)	
Occupation			
Housewife	225 (91.1)	110 (89.4)	0.607
Employed	22 (8.9)	13	
Adequacy of income for expenditures			
Adequate	85 (34.4)	47 (38.2)	0.290
Medium	146 (59.1)	64 (52)	
Inadequate	16 (6.5)	11 (8.8)	
Number of alive children			
One	104 (42.1)	60 (48.8)	0.317
Two	123 (49.8)	51 (41.5)	
Three	20 (8.1)	12 (9.7)	
The type of recent pregnancy			
Intended	219 (89.4)	100 (82)	0.047
Unintended	26 (10.6)	22 (18)	
The type of recent delivery			
Vaginal delivery	78 (31.6)	31 (25.2)	0.205
Cesarean section	169 (68.4)	92 (74.8)	
Gestational age (week)			
Below 38	25 (10.1)	21 (17.1)	0.056
Above 38	222 (89.9)	102 (82.9)	
Participating in physiological delivery classes			
No	185 (75.2)	95 (77.2)	0.886
Yes (4 sessions or less)	30 (12.2)	13 (10.6)	
Yes (5 sessions or more)	31 (12.6)	15 (12.2)	
Incentives of breastfeeding			
Spouse	26 (10.5)	29 (23.6)	
Family and friends	88 (35.6)	52 (42.3)	0.0001
Health-care workers	35 (14.2)	8 (6.5)	
Mother herself	98 (39.7)	34 (27.6)	
Total	247 (66.8)	123 (33.2)	

T-test showed that all domains of mothers' breastfeeding empowerment, including knowledge (p=0.022), attitude (p=0.0001), proper breastfeeding skills (p=0.001), skills for prevention and management of breastfeeding problems (p=0.0001), adequacy of breastfeeding (p=0.001), self-efficacy of breastfeeding (p=0.001) and total score (p=0.001) were correlated with exclusive breastfeeding (Table 2). After entering the demography – fertility variables and the domains of breastfeeding empowerment in the logistic regression model in the final analysis, only the domains of breastfeeding empowerment remained significant as effective variables (Table 3).

The results showed that the overall rate of exclusive breastfeeding was higher in lactating mothers who had higher scores in these domains (except in the domain of knowledge). According to the results, for each one-point increase in the score in these domains, the odds ratio of exclusive breastfeeding increased by at least 47% in the domain of proper breastfeeding skills and by a maximum of five times in the domain of adequacy of breastfeeding.

Table 2. Comparison of breastfeeding empowerment of mothers in the two exclusive breastfeeding and non – exclusive breastfeeding groups

Type of feeding for the 6-month-old infant Breastfeeding empowerment domains	Exclusive Mean±SD	Non-exclusive Mean±SD	P-value T–test
Knowledge	18.59±2.12	18.02±2.49	0.022
Attitude	28.17±2.08	22.57±4.33	0.0001
Proper breastfeeding skills	49.79±4.58	38.53±9.66	0.0001
Skills for prevention and management of breastfeeding problems	26.77±3.16	22.27±5.22	0.0001
Adequacy of breastfeeding	19.43±1.09	11.36±4.23	0.0001
Perceived family support	26.75±3.25	21.371±3.79	0.0001
Self-efficacy of breastfeeding	33.18±2.68	26.68±5.17	0.0001
Total domains	202.70±13.12	160.59±27.82	0.0001

Table 3. The relationship between excusive breastfeeding and the domains of mothers' breastfeeding empowerment in logistic regression model

Predictor variable	Excusive breastfeeding			
	Crude OR* (**CI-95%)	P-value	Adjust OR (CI-95%)	P-value
Knowledge	1.11 (1.03–1.212)	0.007	1.360 (0.967–1.913)	0.077
Attitude	1.66 (1.503–1.848)	0.000	1.688 (1.137–2.506)	0.009
Proper breastfeeding skills	1.264 (1.203–1.328)	0.000	1.471 (1.078–2.007)	0.015
Skills for prevention and management of breastfeeding problems	1.297 (1.216–1.383)	0.000	1.521 (1.099–2.106)	0.011
Adequacy of breastfeeding	2.545 (2.038–3.178)	0.000	5.150 (2.707–9.795)	0.0001
Perceived family support	1.236 (1.143–1.337)	0.000	1.636 (1.184–2.260)	0.003
Self-efficacy of breastfeeding	1.469 (1.360–1.588)	0.000	1.482 (1.3640–1.609)	0.001

*** Odds Ratio, ** Confidence Interval**

Discussion

The results of this study showed that after adjusting and controlling demography – fertility factors and domains of breastfeeding empowerment in statistical analysis, the mothers' breastfeeding empowerment only had a significant relationship with exclusive breastfeeding. In other words, mothers who were more empowered in each domain had more exclusive breastfeeding. However, there was no significant relationship in the domain of knowledge, while the domain of adequacy of breastfeeding showed more

correlation in comparison with other domains. In other words, mothers who believed that their breast milk was sufficient for a child were more inclined to exclusive breastfeeding. According to the findings, for each one-point increase in the score of the adequacy of breastfeeding, the adjusted odds ratio for exclusive breastfeeding would be at least 5 times higher. Olong et al. also reported inadequacy of milk as the second leading cause of discontinuing exclusive breastfeeding until six months of age (16). Uouchendu et al. based on their findings suggested the need to empower women through education and awareness about the benefits of exclusive breastfeeding (17). Liu et al. also referred to the need for the mothers' support and increasing breastfeeding self-efficacy to increase the length of exclusive breastfeeding (18).

The rate of exclusive breastfeeding up to six months is 66.8% in the present study. Similar studies conducted in Iran were the studies of Vafaee et al. in Mashhad (56.4%) (19), Rahmatnejad et al. in Tehran (52.6%) (20), Zahedpasha et al. in Babol (89.5%) (11), and Poorahmad-Garbandi et al. in Bandar Abbas (53%) (12). These differences can be attributed to regional culture, as well as the increase in the trend of exclusive breastfeeding in recent years. In the statistics released by the World Health Organization, the rate of exclusive breastfeeding in Sri Lanka was 76%, in Cambodia was 74%, and in Malawi was 71% (21).

The findings of this study showed that demographic variables such as maternal age, job status, education, and income are not related to the rate of exclusive breastfeeding. This finding is consistent with the findings of Ziaie et al. in Rasht, which is based on individual and fertility characteristics such as the level of education and mother's occupation, family income, type of delivery between mothers with non-exclusive breastfeeding under 4 months and exclusive breastfeeding from 4 to 6 months, which showed no significant difference (22).

Rahmatnejad et al. also found that there was no statistically significant relationship between noncompliance with exclusive breastfeeding and any of the underlying and individual variables such as age, education, economic status, occupation, and type of delivery (20). Laugen et al. also in their study in Canada did not find a statistically significant relationship between maternal age, higher education level and household income, and exclusive breastfeeding (23), but Kehler et al. identified maternal education as an important psycho economic factor for exclusive breastfeeding until six months of age. They observed that mothers with a lower educational level had lower tendency to have exclusive breastfeeding for their infant up to six months (24).

However, in a systematic review in China by Zhao et al., mothers with a higher education level had lower tendency to have exclusive breastfeeding (25). These findings suggest that merely increasing the level of education cannot contribute to the exclusive breastfeeding. In the present study, the rate of exclusive breastfeeding in mothers with intended pregnancy was significantly higher than unintended pregnancy, which can be considered as one of the complications of unintended pregnancy. In the study of Ziaie et al., there was no significant relationship between intended pregnancy and exclusive breastfeeding, under 4 months and 4 – 6 months (22).

Another variable related to exclusive breastfeeding in mothers in this study is the type of incentives for breastfeeding. The findings indicated the role of health-care workers as well as the mother's demand in the exclusive breastfeeding group. According to this finding, health-care workers should pay attention to the importance of increasing the person's desire to breastfeed during the training. According to a study by Kimani-Murage et al., inadequate milk, inadequate knowledge, and lack of support from health-care workers led to poor breastfeeding (26).

In the study of Poorahmad-Garbandi et al., the most important incentives reported by mothers for exclusive breastfeeding were relatives (47%), while doctors and healthcare staff were in the fourth rank (9%) (12). In a systematic review in 2017, Shakya et al. found that support for lactating mothers is associated with an increase in exclusive breastfeeding up to six months of age (27).

According to the findings of the present study, having more knowledge, education and experience of breastfeeding alone cannot increase the rate of exclusive breastfeeding, but one needs to focus on other domains of mothers' empowerment, especially regarding breastfeeding adequacy, attitude, perceived family support, and skills for prevention and management of breastfeeding problems in mothers.

As a result, considering the vital role of exclusive breastfeeding, health policy – makers need to plan strategies for increasing the mothers' breastfeeding empowerment with appropriate and targeted interventions.

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