

Factors affecting the choice of type of delivery with breast feeding in Iranian mothersFarangis Sharifi¹, Soheila Nouraei², Nader Sharifi³¹ Department of Midwifery, Kazerun Branch, Islamic Azad University, Kazerun, Iran² Department of Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran³ Ph.D. Candidate of Health Education & Promotion, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran**Type of article:** Original**Abstract****Objective:** This study assessed the factors affecting the choice of type of delivery with breast feeding in Iranian mothers.**Methods:** This Cross section descriptive analytic study was performed using a random sampling technique, using data from 400 pregnant women who attended the maternity centers in Borazjan and Kazerun in Iran in 2014. A questionnaire covering demographic characteristics, mode of delivery and postpartum conditions was completed for each mother. Descriptive analysis and Chi square test were used along with SPSS 23 software to statistically analyze the data and p-value less than 0.05 was considered for statistical significance.**Results:** In this study, the rate of normal delivery and cesarean operation are considered equal. In the main factors influencing the choice of delivery, mothers' education level ($p=0.028$) and pregnancy status ($p=0.041$) showed a significant relationship. Although no significant association between child nutrition with the type of delivery was found, duration of breastfeeding with the type of delivery showed significant association ($p=0.046$).**Conclusion:** Although cesarean delivery in many cases is life-saving for mother and fetus; in addition to medical indications, parents with higher education and pregnancy status are also important factors in increasing the rate of cesarean section compared to vaginal delivery. Babies of mothers with normal delivery had a longer time of breastfeeding. Further studies in Iran are necessary, regarding the reasons for high cesarean section and their outcomes.**Keywords:** Breast-feeding, Factor, Iran, Delivery**1. Introduction**

The cesarean operation is one of the most common abdominal surgeries, and the rate of its mortality and side effects is higher than normal delivery (1). Despite the lack of increase of emergencies in obstetrics and gynecology, the rate of cesarean operations has increased in many parts of the world (2). Indeed it has reached more than 50% in some countries (3-9), and in Iran, half of the babies born are born by cesarean operation (10). This is despite the fact that, based on World Health Organization statistics, according to the side effects and problems of cesarean operation, it can be acceptable up to a maximum 15%, and only when delivery through the normal channel is not possible, or is accompanied with serious risks for mother and her baby, it is suggested (11). The results of some studies have shown that the main reason of increase of cesarean operation is the demand by the mother's themselves (12). Perhaps some individual factors such as job, education, age, and pregnancy status are important in selecting the type of delivery of pregnant mothers. As conditions after delivery are different in cesarean operation and normal delivery, it will be effective in the nutritional and growth trend of the child, and even in breast feeding. In cesarean operations, there is a serious delay of lactation, the baby is poorer in sucking, the possibility of successful breast feeding is less and at first is delayed, and the breast feeding period is shorter (13).

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2. Material and Methods

This cross sectional descriptive analytic study was performed by a two-step simple random sampling technique, after consulting a statistician, taking 10% probability sample attrition, about 95% and 0.5% error using statistical formulas, 400 people were selected, using data from 400 pregnant women who attended health centers in Kazerun and Borazjan in Iran in 2014. First, a list of all maternity centers in Kazerun and Borazjan was prepared and the mean number of deliveries in each health center was noted. Then, five centers with suitable delivery rates were randomly selected and eighty cases were randomly enrolled from each center. We considered gestational pregnant women after childbirth, and established absence of anxiety and depression as inclusion criteria. Cases which failed to fill the questionnaire were excluded. The method of data collection in our study was by reviewing medical record files and filling questionnaires which were completed by trained persons who interviewed the mothers. After identifying the participants and obtaining written consent, a 20-item questionnaire was developed to review the terms and conditions of delivery, and 2, 6, 12, and 12 months after delivery, in-person follow-up on conditions of child and mother such as kind of nutrition, type of delivery, education level, age, living area, weaning time, etc., was carried out. Study conditions were similar in all centers. Data were then entered into a computer and analyzed using IBM© SPSS© Statistics version 23 (IBM© Corp., Armonk, NY, USA) and descriptive analysis and Chi square test were used to statistically analyze the data. P-value less than 0.05 was considered for statistical significance. The study was approved by the medical ethics committee of KAUM according to the Helsinki declaration, and an informed written consent was also given by each participant.

3. Results

Table 1 shows distribution of demographic variables and their relationship with the type of delivery. From 400 females who underwent analysis about 55% (113 people in CS (cesarean section) group and 108 people in NVD (normal vaginal delivery) group) were 26-34 years. In review of mother's job, the highest percentage (81%, 324 person) were housewives and in total about 62% (246 person) of mothers had diploma or higher education and the cesarean rate in this group was higher (136 person) than NVD group (110 person). Also, results showed that unwanted pregnancies were much less than wanted ones, and there were a significant relationship in this case, such that normal delivery was more in unwanted pregnancies than cesarean operation ($p=0.041$). According to Table 2, mother's job, education level and age were not related with breast feeding period ($p>0.05$). According to our findings (Table 3), there were no significant relationship between type of delivery and type of child nutrition ($p=0.299$) but other results showed that there was a significant relationship between type of delivery and the time of discontinuing breast-feeding ($p=0.046$).

Table 1. Demographic variables and their relationship with the type of delivery

Variable		Type of delivery			p-value
		Total; n (%)	CS; n (%)	NVD; n (%)	
		400 (100)	200 (50)	200 (50)	
Mother age (year)	<25	101 (25.25)	55 (27.5)	46 (23)	0.522
	26-34	221 (55.25)	113 (56.5)	108 (54)	
	>35	78 (19.5)	32 (16)	46 (23)	
Mother's job	Housewife	324 (81.0)	156 (78.0)	168 (84.0)	0.463
	Employee	58 (14.5)	34 (17.0)	24 (12.0)	
	Self-employed	3 (0.8)	2 (1.0)	1 (0.5)	
	Student	15 (3.8)	8 (4.0)	7 (3.5)	
Mother's Education level	Primary	7 (1.75)	2 (1)	5 (2.5)	0.028
	Under Diploma	147 (36.75)	62 (31)	85 (42.5)	
	Diploma	170 (42.5)	88 (44)	82 (41)	
	Bachelor	75 (18.75)	47 (23.5)	28 (14)	
	Master	1 (0.25)	1 (0.5)	-	
Living area	Town	397 (99.25)	198 (99)	199 (99.5)	0.562
	Village	3 (0.75)	2 (1)	1 (0.5)	
Pregnancy status	Unwanted	46 (11.5)	16 (8)	30 (15)	0.041
	Wanted	354 (88.5)	184 (92)	170 (85)	

n: number, CS: cesarean section, NVD: normal vaginal delivery, $p<0.05$ (significant)

Table 2. The relationship between breast feeding period with Mother's job, Education level and age

Variables		Stop time; n (%)					Total	p-value
		<15day	15-30 days	2-6 Months	6 Months-1year	>1 year		
		19 (6.5)	19 (6.5)	11 (3.8)		20 (6.8)	223 (76.4)	
Mother's job	Employee	4 (9.7)	0 (0)	2 (4.9)	5 (12.2)	30 (73.2)	41 (100)	0.292
	Housewife	13 (5.4)	17 (7)	9 (3.7)	14 (5.8)	189 (78.1)	242 (100)	
	Self-employed	1 (33.3)	0 (0)	0 (0)	0 (0)	2 (66.7)	3 (100)	
	Student	1 (16.7)	2 (33.3)	0 (0)	1 (16.7)	2 (33.3)	6 (100)	
Mother's Education	Primary	0 (0)	1 (20)	0 (0)	0 (0)	4 (80)	5 (100)	0.592
	Under Diploma	5 (4.5)	7 (6.2)	3 (2.7)	4 (3.6)	93 (83)	112 (100)	
	Diploma	8 (6.5)	8 (6.5)	6 (4.8)	11 (8.9)	91 (73.4)	124 (100)	
	Bachelor	6 (11.8)	3 (5.9)	2 (3.9)	5 (9.8)	35 (68.6)	51 (100)	
Mother's age (year)	<25	6 (10)	8 (13.3)	1 (1.7)	3 (5)	42 (70)	60 (100)	0.188
	26-34	12 (7.1)	7 (4.15)	7 (4.15)	13 (7.7)	130 (76.9)	169 (100)	
	>35	1 (1.6)	4 (6.3)	3 (4.8)	4 (6.3)	51 (81)	63 (100)	

p<0.05 (significant)

Table 3. Kind of nutrition and their relationship with the type of delivery

Variables		Type of delivery			p-value
		Total; n (%)	CS; n (%)	NVD; n (%)	
		400 (100)	200 (50)	200 (50)	
Kind of nutrition	Breast Feeding	334 (83.5)	162 (81)	172 (86)	0.299
	Milk powder	39 (9.75)	24 (12)	15 (7.5)	
	Breast Feeding + Milk powder	27 (6.75)	14 (7)	13 (6.5)	
Breastfeeding Duration	<15 days	19 (6.5)	14 (9.9)	5 (3.3)	0.046
	15-30 days	19 (6.5)	10 (7)	9 (6)	
	2-6 months	11 (3.8)	6 (4.2)	5 (3.3)	
	6 months- 1year	20 (6.8)	13 (9.2)	7 (4.7)	
	>1 year	223 (76.8)	99 (69.7)	124 (82.7)	
	Without answer	108	58	50	

n: number, CS: cesarean section, NVD: normal vaginal delivery, p<0.05 (significant)

4. Discussion

In this study, we have investigated the factors affecting the choice of type of delivery with breast feeding in Iranian mothers. Conducted studies in most other parts of the world, (5, 14, 15), have shown that the rate of cesarean operation is much higher than World Health Organization statistics, which are usually optional and do not have any medical reason for doing it. In this study, in each of the age groups below 25 and 26-34 years old, cesarean operation had been more common than normal delivery, this is despite the fact that in the age group over 25, normal delivery was more common, which could be because of the issue that pelvic structure is better developed at this age. Pregnancy status in terms of wanted (intentional) or unwanted (unintentional) pregnancy is also investigated in our study, and shows that unintentional pregnancies were much less than intentional ones, and there is a significant relationship in this case, such that normal delivery was more in unintentional pregnancies than cesarean operation. In this study, the rates of normal delivery and cesarean operation are considered equal and are investigated in effective factors on selecting the type of delivery of pregnant mothers, education, job of mother, place of living, pregnancy status, and following that, relationship of the type of delivery and discontinuation of breast feeding period and child nutrition. In this conducted research, there was a significant relationship between education level of the mother and the type of delivery, such that the rate of cesarean operation is higher among women with higher education in comparison with those with lower education, which in some other similar studies, such as studies conducted by Garmaroodi, et al. (16-19), it is also found that by increasing education level, more mothers prefer cesarean operation. In investigating the effect of the job of mother on selecting the type of delivery in our study, no significant relationship was found, similar to the study of Zamani et al. (19), but research of Garmaroodi, and Ali Mohammadi et al. were significant in this regard (16, 18), which no investigation is conducted about this statistical

difference. Regarding location in terms of living in the city or village, it was also ineffective in selecting the type of delivery in our study, which its reasons could be the issue that most of our patients were urbanist. But in investigating other factors effective on breast feeding period, such as studies of Hajian in Babol (20), and Branger in France (21), there was significant relationship between breast feeding period and job, age and education level of mother. In contrast to those studies, we did not find any significant relationship between those variables and breast feeding period. Similar to the findings of Hwang's study (22), in our study, cesarean sectioned mothers were less successful in breastfeeding duration than those who had normal delivery. Our findings were also consistent with the findings of Throfilofiannakou et al. in Greece (23), Chandrashekher et al. in Western Nepal (24), Batal et al. in Lebanon (25), Mikiel-Kostyra et al. in Poland (26), and Pechlivoni et al. in Athens-Greece (27). Although, in studies conducted by Escamilla in Mexico (28), Lathauwer (29), and Pattle (30), the type of delivery was effective on breastfeeding period, which can be because of better mother outcome after normal delivery vs. cesarean section. Also, in our study, the rate of using milk powder among infants of cesarean sectioned mothers was more than infants of mothers with normal delivery. Thus, type of delivery can be effective in using milk powder, which has different reasons such as insufficient mothers' milk, that was consistent with the studies of Murray (12) and Azaiza (31).

5. Conclusions

According to studied research findings, regarding factors affecting the choice of type of delivery with breast feeding, it is necessary to cope with the uncontrolled increase of cesarean operations and achieving a desirable and acceptable level of this type of delivery, knowledge and attitude of women are considered, and it is necessary that they become familiar with the advantages of normal delivery and risks of cesarean operation for mother and infant, and through necessary actions, we can see favorable changes in knowledge and attitudes in this regard.

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Conflict of Interest:

There is no conflict of interest to be declared.

Authors' contributions:

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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