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Research Article

The relationship of socio-demographic and reproductive factors with preferred type of birth

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ABSTRACT

Background: Caesarean section is increasingly prevalent and in most developing countries it rates over 50 percent. This study aimed to examine the relationship between, socio-demographic, economic and reproductive factors with birth method selection.

Methods: In this cross-sectional study 510 pregnant women or women had undergone an elective caesarean section in the absence of any medical indication were selected from individuals referring to health centers or postpartum wards of hospitals in Ahvaz, Iran, from February 2015 to June 2015. A questionnaire consisted of 26 questions, was used to collect data. The validity and reliability of the questionnaire was confirmed. In order to analyze the data statistical software SPSS 22 was used to perform chi-square and independent t-tests.

Results: The findings revealed the mean age of mothers was 26.97 ± 4.5 years and the majority of them (14.3%) had a diploma level. They were mostly housewives (87.3%). There was a significant difference between two groups regarding socio-demographic and economic characteristics ($p < 0.000$), but reproductive factors such as parity, trimester of pregnancy, history of infertility, abortion, fetal abnormality, neonatal death, IUFD, unwanted pregnancy and baby sex were not related to this selection. Midwife and prenatal classes were the main sources of their acquired information ($p < 0.000$).

Conclusions: Socio-demographic and economic characteristics are contribute to birth method selection and midwives and prenatal classes are the main resource for giving information about the advantages of vaginal delivery and disadvantages of Cesarean section. Well-designed Studies in this area is very few and further studies are recommended.

Keywords: Cesarean section, Vaginal delivery, Socio-demographic, Economic

INTRODUCTION

Childbearing is a natural process and occurs without medication or obstetric intervention. Vaginal delivery may need to any number of medical interventions such as cesarean section.¹ As early as 1980, the national cesarean section rate hovered around 15%, but the rates of this procedure have risen dramatically during the past decade, reaching more than 50% in some countries.^{2,3} Reported that in 2007 in U.S. (2007) nearly 32% (1.4 millions) of all births have been the result of cesarean deliveries 4 .In

Iran, the increasing rate of caesarean deliveries is higher than the (10-15%) recommended rate by WHO.⁵⁻⁷ In capital city, Tehran, in 2002, the total rate of caesarean section was reported to be 66.5%, rising to as high as 84% in private centers.⁸ In Ahvaz, another large city of Iran, the rate of caesarean deliveries in 2010 was 41.3% in teaching hospitals.⁹

Caesarean deliveries increase the risk of maternal and neonatal mortality and morbidity, compared to vaginal delivery.³ Several studies have assessed the possible

reasons for the increasing caesarean delivery rates and some of them reported that maternal request is a significant factor in the rising caesarean section rates.¹⁰ Some known factors associated to preferring a cesarean section without medical indication by women, is maternal age over 35 years, a previous negative birth, childbirth fear, perceptions about safety of mother and baby, previous negative birth experiences, poor care and perceived inequalities in care.^{11,12}

Also the relationship between socio-economic factors such as smoking, unemployment and ethnic background has proven.^{11,13-15} Also it has been reported that women planning a cesarean section differ to some extent in their personality from women to choose a vaginal delivery.¹¹ Types of information provided by health professionals and information assessed through public and private discourses of family, friends and acquaintances have reported as influencing factors on women's preferred type of delivery.^{16,17}

However, many women prefer to do vaginal birth.¹⁶ Fenwick et al in their study identified that women who preferred a vaginal birth after Caesarean (VBAC) believed that birth was a significant and important event. Also attitudes of family, friends and the woman's reflections of the previous caesarean experience influenced the women choice to have a VBAC 18. Although reasons for women's birth selection have investigated in many studies, few studies have examined characteristics of women who prefer normal vaginal deliver or cesarean section. Understanding of women characteristics and factors contributing to the increasing rate of caesarean delivery is important to planning and implementation of safe and successful strategies to reduce unnecessary interventions in child birthing process.¹⁹ This cross-sectional study aims to examine the relationship between, socio-demographic, economic and reproductive factors with birth method selection in Iranian women.

METHODS

In this cross-sectional study that carried in Ahvaz-Iran, 510 women who were chosen their birth methods and were referred to two educational hospitals (Imam Khomeini and Razi (and two health centers from February 2015 to June 2015, were participated. The study was approved by the ethics committee of Ahvaz Jundishapur University of Medical Sciences, and written informed consent was obtained from all participants. The inclusion criteria were included: women who could read and wright in Persian, had a normal singleton with an expected normal obstetric outcome. Women who had a medical reason for cesarean section were excluded from study. All participants signed an informed consent prior to the study and completed a socio-demographic, economic and reproductive status questionnaire and types of information gathered through interview.

Statistical analysis

Data were analyzed using SPSS 22.0. The descriptive statistics were utilized to describe the groups. The differences between the characteristics of women in cesarean section and normal vaginal delivery groups were compared using independent t-test and chi-square. The p-value less than 0.05 considered as significant.

RESULTS

The mean age was 26.07 and 27.9 in the vaginal delivery and cesarean section groups, respectively. In vaginal delivery 2.7% and in cesarean section group 10.5% were employed. There was a significant difference between two groups regarding socio-demographic and economic characteristics. Two groups did not have any statistical difference regarding field of study (medical or non-medical) ($p > 0.05$) (Table 1).

Table 1: Demographic and socio-economic characteristics of women in the normal delivery and cesarean Section groups (n = 510).

Characteristic	Chosen birth method			P Value
	ND (n = 264)	CS (n = 246)	Total (n = 510)	
Age, y, mean (SD)	26.07 (4.5)	27.93 (5.3)	26.97 (5.02)	0.000
Marriage age, y, mean (SD)	21.06 (4)	22.56 (4.46)	21.78 (4.30)	0.000
Place of Residency, n (%)				0.000
Urban	224 (43.9%)	239 (46.9%)	463 (90.8%)	
Rular	40 (7.8%)	7 (1.4%)	47 (9.2%)	
Ethnicity, n (%)				0.000
persian	85 (16.7%)	121 (23.7%)	206 (40.4%)	
Arab	148 (29%)	75 (14.7%)	223 (43.7%)	
Lor	20 (3.9%)	42 (8.2%)	62 (12.2%)	
Kurdish	9 (1.8%)	3 (0.6%)	12 (2.4%)	
Turkish	2 (.6%)	5 (1%)	7 (1.4%)	

Educational level, No. (%)				0.000
Primary school	48 (9.4)	14 (2.8)	62 (12.2%)	
Secondary	37 (7.3)	16 (3.1%)	53 (10.4%)	
High school	35 (6.9)	22 (4.3%)	57 (11.2%)	
Diploma	73 (14.3)	97 (19.0%)	170 (33.3%)	
University	71 (13.9)	87 (19.0%)	168 (32.9%)	
Husband Educational level, No. (%)				0.000
Primary school	36 (7.1)	12 (2.4)	48 (9.4%)	
Secondary	47 (9.2)	16 (3.1%)	63 (12.4%)	
High school	23 (4.5)	23 (4.5)	39 (7.6%)	
Diploma	52 (12.2)	73 (14.3%)	125 (24.5%)	
University	106 (20.7)	129 (25.2%)	235 (45.9%)	
Field of study, No. (%)				0.103
Medical	4 (0.8%)	9 (1.8%)	13 (2.6%)	
Non-medical	57 (11.2%)	76 (14.9%)	133 (26.1%)	
Occupation, women, No. (%)				0.000
Housewife	248 (48.6%)	197 (38.6%)	445 (87.3%)	
Employee	14 (2.7%)	49 (10.5%)	63 (12.4%)	
Occupation, men, No. (%)				0.002
Jobless	10 (2%)	147 (28.8%)	12 (2.4%)	
Worker	20 (3.9%)	20 (3.9%)	40 (7.8%)	
Employee	87 (17.1%)	120 (23.5%)	207 (40.6%)	
Self-administered	147 (28.8%)	104 (20.4%)	251 (49.2%)	
Housing Status, No. (%)				0.000
Owner of the house	97 (19.0%)	113 (22.2%)	210 (41.2%)	
House rental	74 (14.5%)	78 (15.3%)	152 (29.8%)	
Living with family	93 (18.3%)	55 (10.8%)	148 (29.0%)	
Number of people in the family, No. (%)				0.001
2-4	166 (32.6%)	201(39.4%)	367 (71.9%)	
≥5	98 (19.4%)	45 (8.8%)	143 (27.6%)	
Economic status, No. (%)				0.001
Good	92 (18.1%)	68 (13.7%)	162 (31.8%)	
Moderate	145 (28.4%)	170 (33.3%)	315 (61.8%)	
poor	27 (5.3%)	6 (1.2%)	33 (6.5%)	
Insurance cover, No. (%)				0.000
No insurance	35 (7.9%)	20 (3.8%)	55 (11.7)	
Health service insurance	227 (45%)	226 (44.3%)	453 (89.3%)	

Table 2: Reproductive characteristics of women in the normal delivery and cesarean section groups (n = 510).

Characteristic	Chosen birth method			P Value
	ND (n = 264)	CS (n = 246)	Total (n = 510)	
Gravidity, N (%)				0.049
Primi gravida	133 (26.1%)	134 (26.3%)	267 (52.4%)	
2-4	244 (25%)	106 (20.8%)	234 (45.9%)	
≥ 5	3 (0.6%)	6 (1.2%)	9 (1.8%)	
Parity, N (%)				0.460
Nulliparous	143 (28.0%)	143 (28.0%)	286 (56.1%)	
1-3	139 (24.4%)	79 (19.4%)	218 (48.2%)	
≥ 4	2 (0.4%)	4 (0.6%)	6 (1%)	
Pregnancy trimester, N (%)				0.650
First	4 (0.8%)	4 (0.8%)	8 (1.6%)	
Second	24 (4.8%)	16 (3.2%)	40 (7.9%)	
Third	236 (46.3%)	226 (44.3%)	462 (90.6%)	

Previous infertility, N (%)				
Yes	0 (0.0 %)	4 (0.8%)	4 (0.8%)	0.087
No	264 (51.8%)	242 (47.5%)	506 (99.3%)	
Previous Abortion, N (%)				
0	231 (45.3%)	215 (42.2%)	446 (87.5%)	0.864
1	31 (6.1%)	28 (5.5%)	59 (11.6%)	
2	2 (0.4%)	3 (0.6%)	5 (1.0%)	
Previous fetal abnormality, N (%)				
Yes	2 (0.5%)	2 (0.4%)	4 (0.9%)	0.503
No	226 (53.8)	190 (45.2%)	416 (99.0%)	
Child death number, N (%)				
Yes	1 (0.2%)	3 (0.7%)	4 (1.0%)	0.301
No	227 (54.0)	189 (45.0%)	416 (99.0%)	
IUFD number, N (%)				
Yes	3 (0.7%)	2 (0.4%)	5 (1.1%)	0.179
No	225 (53.6)	190 (45.2%)	415 (98.8%)	
Unwanted pregnancy number, N (%)				
Yes	2 (0.5%)	3 (0.7%)	5 (1.2%)	0.543
No	226 (53.8)	189 (45.0%)	415 (98.8%)	
Previous birth method, N (%)				
ND	109 (26.0%)	31 (7.4%)	140 (33.3%)	0.000
CS	3 (0.7)	44 (10.5%)	47 (11.2%)	
Previous birth method satisfaction, N (%)				
Yes	98 (23.3%)	52 (12.4%)	150 (35.7%)	0.001
No	12 (2.9)	23 (5.5%)	35 (8.3%)	
Delivery agent, N (%)				
Midwife	92 (21.9%)	26 (6.2%)	118 (26.1%)	0.000
Obstetrician	16 (3.8%)	48 (11.4%)	64 (15.2%)	
Others	3 (0.6%)	0 (0.0%)	3 (0.6%)	
Breast feeding first time in previous birth, N (%)				
First 1 hour	92 (21.9%)	45 (10.7%)	137 (32.6%)	0.000
After 1 hour	19 (4.5)	29 (6.9%)	48 (11.4%)	
Gestational age, w, mean (SD)	27.77 (2.34)	27.95 (2.12)	27.86 (2.23)	0.728
Pregnancy times, n, mean (SD)	1.7 (0.79)	1.7 (0.96)	1.7 (0.87)	1.000
Baby Sex, N (%)				
Boy	105 (39.77)	91 (36.99)	196 (38.43)	0.405
Girl	88 (33.33)	80 (32.52)	168 (32.94)	

Table 3: Sources of information of women in the normal delivery and cesarean section groups (n = 510).

Sources of information,	Chosen birth method			P Value
	ND (n = 264) N (%)	CS (n = 246) N (%)	Total (n = 510)	
Physician				
Yes	39 (46.4%)	45 (53.6%)	84 (100%)	0.106
No	189 (56.3%)	147 (43.8%)	336 (100%)	
Midwife				
Yes	107 (87.7%)	15 (12.3%)	122 (100%)	0.000
No	121 (40.6%)	177 (59.4%)	298 (100%)	
Perinatal classes				
Yes	25 (96.2%)	1 (3.8%)	26 (100%)	0.000
No	203 (51.5%)	191 (48.2%)	394 (100%)	
Internet				
Yes	23 (59.0%)	16 (41%)	39 (100%)	0.537
No	205 (53.8%)	176 (46.2%)	381 (100%)	

Book				
Yes	27 (62.8%)	16 (37.2%)	43 (100%)	0.237
No	201 (53.3%)	176 (46.7%)	377 (100%)	
Newspaper				
Yes	10 (76.9%)	3 (23.1%)	13 (100%)	0.096
No	218 (53.6%)	189 (45.8%)	407 (100%)	
University Class				
Yes	4 (57.1%)	3 (42.9%)	7 (100%)	0.878
No	224 (54.2%)	189 (45.8%)	413 (100%)	
Advertisement				
Yes	3 (75%)	1 (25%)	4 (100%)	0.403
No	225 (54.1%)	191 (45.9%)	415 (100%)	
Pamphlet				
Yes	3 (60.0%)	2 (40.0%)	5 (100%)	0.796
No	225 (54.2%)	190 (45.8%)	415 (100%)	
Family				
Yes	130 (62.8%)	77 (37.2%)	207 (100%)	0.001
No	98 (46.0%)	115 (54.0%)	213 (100%)	
Relatives				
Yes	100 (51.8%)	93 (48.2%)	193 (100%)	0.348
No	128 (56.4%)	99 (43.6%)	227 (100%)	
Previous childbirth experience				
Yes	93 (52.2%)	85 (47.8%)	178 (100%)	0.472
No	135 (55.8%)	107 (44.2%)	242 (100%)	

According to the Independent t- test there was not any significant difference between two groups regarding gestational age and gravidity ($p > 0.05$). Chi square test showed a significant differences between two groups regards to previous birth method, previous birth method satisfaction, delivery agent and early starting breast feeding in previous birth ($p < 0.000$). But, there was no difference between two groups regards to parity, trimester of pregnancy, history of infertility, abortion, fetal abnormality, neonatal death, IUFD, unwanted pregnancy and baby sex (Table 2). Table 3 is presenting results of chi-square test for sources of information that women received for their birth method selection. There was a significant difference between two groups regards to midwife and prenatal classes as the main source of their required information ($p < 0.000$). There was not any significant relationship between groups about the other sources of information (Table 3).

DISCUSSION

In this study we examined the relationship of, socio-demographic, economic and reproductive characteristics with birth method selection in Iranian women. All women were chosen their birth method in absent of any medical indication. We excluded any high risk pregnancy. The age and marriage age of women in caesarean section group were significantly higher than normal delivery. In a study researcher found that maternal age over 35 years is a factor contributing to demand for caesarean section.¹¹ Also in a study in

Southern Italy researchers showed that a high number of women who wished to give birth by caesarean section, were aged ≥ 35 years with a high level of education, previous infertility, history of smoking, sufficient information provided, and desire for more knowledge.²⁰ Also, in Sweden, women requesting a caesarean section were older but had a lower social class.¹¹ WHO study in Latine America, found that women who were single, young and less educated were more likely to deliver vaginally.²¹ In present study economic factors include, place of living, employment status of women and men, hosing status, economic status in participant opinion, and insurance status were significantly different in vaginal delivery and caesarean section groups and women who planned or performed a caesarean section were, more lived in urban, more employed and their husbands were more employed, more hosing owner, more having insurance and had a moderate economic status. Vafae et al in their study on 417 women (212 caesarean section and 205 vaginal deliveries) showed that 67.4% of women who preferred caesarean section were resident in urban and compared to vaginal delivery this difference was significant.²² But in other study birth method selection was not related to family income and mother employment.²³ Also, maternal health insurance and hospital admission status were reported as factors to contribute to rising caesarean section rate in developed countries.²⁴⁻²⁶ In Murray study also women with health insurance cover and private obstetrician, requested higher rates of caesarean section.²⁷ One study reported that caesarean delivery is a conventional economic good, in

the sense that the higher one's income the more one is inclined to "purchase" it and it shows that primarily women's choices determine caesarean section rates.²⁸ In caesarean section group than the vaginal delivery the most women and their husbands were educated in diploma and university level. But there was not any significant difference between two groups regarding Field of study and studying in medical field not differ from non-medical field.

In a study conducted by WHO, women who delivered by caesarean section without any medical indication were more likely educated (more than 12 years of formal education).²⁹ Also, Nourizadeh showed that with increasing the educational level, tendency to doing caesarean section was increased.²³ Researchers have found that some Brazilian women consider caesarean section to be a high-class mode of birth.³⁰ Also, in agreement with our previous study, Iranian women also consider caesarean section as a high-class mode of delivery.³¹ But, Swedish women believed that requesting a caesarean section have a lower social class than vaginal delivery.¹¹

In present study there was not any significant difference between two groups regards to gravidity, parity, history of infertility, fetal abnormality, neonatal death, IUFD, unwanted pregnancy, gestational age and baby sex. In A study has done by Nourizadeh, also there was no significant difference between gravidity, parity and gestational age, But there were significant differences between two groups regard to type of pervious birth method, satisfaction of previous birth method, delivery agent, and early onset of breast feeding in previous birth method.²³ In a study the authors established that negative experiences of vaginal birth were associated with fear of future vaginal births.³² Similarly, a study in Sweden found that at least 10% of pregnant women suffer from fear of childbirth, and failure to treat this fear may have a negative impact on the subsequent birth.³³ In agreement with our study, Chinese medical staff who had a caesarean section claimed that they were satisfied with their birth experience and advised that to other pregnant women and only a small portion with previous experience of vaginal delivery were satisfied with their birth method and would advised that to other pregnant women.³⁴ Some studies showed that onset of breast feeding might be affected by post cesarean section pain and Swedish women had more lactation problems after a planned caesarean section than a vaginal delivery.^{35,36} Other study established that after a vaginal delivery, concentration in peaks of oxytocin in maternal serum are less frequent than an emergency caesarean section.³⁷

Most women in vaginal delivery group received their information significantly from midwives, prenatal classes and their families. The previous birth experience between two groups was not significant. Most of women in both groups received their child bring information from relatives and also previous childbirth experience but was

not statistically significant. In Salehian study source of taking information regard to birth methods was in 22.3%, family and relative members; 20.3% media; 14.5% obstetricians; 13% health providers; 9.8% book; 3% general practitioner and or a combination of them 38.

CONCLUSION

According to the findings of this study it appears that most of Socio-demographic and economic characteristics are contribute to birth method selection but reproductive factors are less related to this selection. Well-designed Studies in this area, particularly in our country is very few and further studies are recommended.

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