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Religion, ethnicity and selection of cesarean section in Fars province of Iran

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Abstract

Introduction: Over the last decades, the rate of cesarean section delivery has steadily increased in most countries, including Iran and this has made concerns for health policy makers. Cesarean section has higher risk of maternal death compared with normal vaginal delivery. This study aims to investigate the determinants of selecting cesarean section for Sunni and Shia religious groups, Turk, Lur, Arab and Fars ethnic groups of Fars province south of Iran, 2015.

Data & Method: This cross-sectional study was conducted in rural areas of Fars province. The sample of study includes 1535 married women (Sunni-Persians (204), Shia-Persians (485), Shia-Turks (217), Shia- Lurs (194), Shia- Arabs (200), and nomads (235)). The subjects were selected by classified cluster sampling. Interviews were carried out in order to obtain demographic data, fertility history and ideals of childbearing. Data processing was performed using Descriptive statistics, and inferential statistics including Correlation and One-Way ANOVA.

Results: The results indicate that the mean age of women in Sunni and Shia groups, is 32.7 and 32.9 respectively. The mean age of women from different ethnic groups of Lur, Arab and Turk is 32.4, 31.5 and 33.9 respectively. The highest mean age at marriage is in nomadic context (21.3±4.7), almost similar to Lurs and Turks (21.2±4.5). The results of study indicates that the rate of Cesarean Section is significantly different among different ethnic and religious groups (P-value <0.001). In terms of rural and nomadic state of residence is also the difference significant (P-value <0.001). The education indicates a significant relationship with the rate of Cesarean, in a way that the more the level of education, the higher the rate of cesarean delivery.

Conclusion: as the education plays a paradoxical role in terms of delivery selection, new educational programs is needed to help couples understand the negative consequences of cesarean.

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Introduction

Little is known about socioeconomic differences in access to life-saving obstetric surgery, yet access to a cesarean for women is essential to achieve low levels of maternal mortality (Ronsmans et al. 2006). However, in recent decades, cesarean section (CS) rates have risen globally. In 1985 the World Health Organization stated: 'There is no justification for any region to have cesarean section (CS) rates higher than 10–15%'. Two decades later, however, the optimal rate of births by CS remains controversial in both developing and developed countries (Betran et al, 2007).

It is estimated that about 20 million cesarean section (CS) deliveries occur each year in the world making this the most frequent abdominal surgery performed in adults (Torloni et al. 2013). As the rise does not appear to be explained by increased risk or medical indications (Litorp et al. 2015). Proportion of CS to the total births is considered as one of the important indicators of emergency obstetric care (World Health Organization, 2009).

The rates of CS have steadily increased in almost all middle and high-income countries over the last three decades. According to the latest global estimates, the average CS rate is approximately 15%, with large discrepancies between and within different countries (Torloni et al. 2013).

According to WHO, in 2010 about 25.7% of the total childbirths worldwide were C-sections (rezaei sardari et al.2014). The CS rate varies worldwide, from country to country and within a country. The National CS rate of Great Britain and America has been reported as 23.8% and 32.8% respectively, While 0.6% national CS rate was reported from Ethiopia. In Nigeria, CS rates ranging from 12.2% to 34.5% were reported in some tertiary health facilities and in recent times the CS rates globally have been on the rise (Ashimi et al 2013). The incidence of C-section in the United States of

America is one-third of all births and this surgery is the most common major surgery in this country with 1.3 million cases (Boyle et al. 2012).

The rate of CS delivery (CD) has increased more than 50% from 20.7% in 1996 to 32.8% in 2011. The increase can be seen among women of all ages, races and ethnicities, in every state, and across all gestational ages (Boyle et al. 2012; Edmonds et al. 2013).

Many of the developing countries (e.g., China, Nigeria, Bangladesh etc.) have seen rapid increase in C section birth in the past two decades (Leone et al. 2008).

The Demographic and Health Survey (DHS) conducted in Iran in 2000 reported the C-section rate in the country to be as high as 35% .The 'Integrated Monitoring Evaluation System' Survey (IMES) conducted on urban and rural populations of women aged between 10 and 49 years, as representative of the Iranian population, also reported the rate of C-section to be as high as 40% (yazdizadeh et.al 2011).

The incidence of C-section in Iran, based on a meta-analysis, was reported 48% among 74,809 cases (azami et.al 2014). According to the world health statistics 2015, the incidence of C-section in Iran was 48%. The rate is believed to be comparable with that of fast economic growing countries such as Brazil (56 %) and Turkey (37%). The C-section rate in the neighboring developing countries varies from 21% in Azerbaijan to 28% in Jordan to 52% in Egypt (WHO, 2015).

The rate of C-section in different countries varies between urban and rural areas, different socio-economic groups, and among people with different rate of access to different public and private services (rezaei sardari et al. 2014). A real cause for rising C-section is rapid socio-economic changes, medicalization of women's health, altered family structure, changing role of women in society, biological urge to have good off-springs, and good strength of children in the competitive world (Radha et al. 2015).

There is a wide variability in rate of indications for primary cesarean section by race/ethnicity. Primary C-section rates remained significantly higher for African American women but lower for Hispanic women compared with white women (Getahun et al. 2009).

The overall C-section rate was 31.2% .Compared with European ethnicity, Pacific and Chinese women had a reduced odds of elective C-section (adjusted odds ratios, OR 0.42, [95% CI 0.24-0.73] and 0.68, [0.49-0.94], respectively), while Indian women had an increased odds of emergency CS (OR 1.54, [1.26-1.88]). Rates of elective or emergency CS for other ethnicities were similar to European (Anderson et al. 2013).

In the USA after insurance and personal, community, medical, and hospital characteristics had been controlled, Blacks were 24% more likely to undergo cesarean delivery than Whites. Among women who resided in substantially non-English-speaking communities, who delivered high-birth weight babies, or who gave birth at for-profit hospitals, cesarean delivery appeared to be more likely among non-Whites and was over 40% more likely among Blacks than among Whites (Braveman et al. 1995).

The cesarean section rates for immigrants, second- and third-generation women, and non-immigrant women were similar. Neither indications for cesarean section delivery nor neonatal outcomes showed statistically significant differences. The only difference found was a somewhat higher rate of crash cesarean sections per 100 births among first generation immigrants compared to non-immigrants (David et al. 2015).

An important feature of American maternity care is pervasive inequality in prenatal and postpartum care, leading to worse outcomes for low-income Americans, black Americans, and U.S. born Hispanics. Racial-ethnic and socioeconomic inequality in maternity care outcomes, such as infant and maternal mortality and morbidity rates, parallel disparities in American health care overall. (Roth et al.2012).

Data and Method

This cross-sectional study was conducted in rural areas of Fars province. The sample of study includes 1535 married women (Sunni-Persians (204), Shia-Persians (485), Shia-Turks (217), Shia- Lurs (194), Shia- Arabs (200), and nomads (235)). The subjects were selected by classified cluster sampling. Interviews were carried out in order to obtain demographic data, fertility history and method of delivery. Data processing was performed using Descriptive statistics, and inferential statistics including Correlation and One-Way ANOVA.

Results

The results indicate that the mean age of women in Sunni and Shia groups, is 32.7 and 32.9 respectively. The mean age of women from different ethnic groups of Lur, Arab and Turk is 32.4, 31.5 and 33.9 respectively. The highest mean age at marriage is in nomadic context (21.3±4.7), almost similar to Lurs and Turks (21.2±4.5). The rate of CS is indicated in terms of parity and ethnicity (Table1 & 2) the rate of CS for the first child among women who have a delivery during last five years ranges from 31% for Shia Arabs to 60% for Persian-Shia group. The results of study indicates that the rate of Cesarean Section is significantly different among different ethnic and religious groups (P-value <0.001). In terms of rural and nomadic state of residence is the difference significant too (P-value <0.001). The education indicates a significant relationship with the rate of Cesarean, in a way that the more the level of education, the higher the rate of cesarean delivery (Table 3-5).

Conclusion

The CS has a direct relation with the socio-economic level of families. Education plays a role in higher rates of cesarean section. As education plays a paradoxical role in terms of delivery selection, new educational programs is needed to help couples understand the negative consequences of cesarean.

Table1: Demographic characteristics by ethnicity and religion

Variables		**Sunni Persians**	**Shia Persians**	**Shia Lurs**	**Shia Arabs**	**Shia Turks**
Frequency % (n)		15.7(204)	37.3(485)	14.9(194)	15.4(200)	16.7(217)
Mean (SD) age of Women		32.7±7.3	32.9±7.1	32.4±6.9	31.5±7.3	33.9±6.8
Women's age at marriage (%)	<=18	33.2	42.7	29.8	42.6	29.2
	19-24	53.5	42.1	48.2	46.2	49.1
	25+	13.4	15.1	22	11.2	21.7
Mean (SD) of Women`s age at marriage		20.5±4.05	19.9±4.4	21.2±4.5	19.8±4.4	21.2±4.5
Cesarean in first delivery (%)		28.4	35.5	38.1	21.2	26.5
Cesarean in second delivery (%)		27.8	32.5	34.2	21.4	26.4
Cesarean in third delivery (%)		21.7	32.4	30	13.3	11.9
Cesarean in fourth delivery (%)		26.2	33.3	33.3	13.3	16.1
Cesarean in fifth delivery (%)		28.6	28.6	0	16.7	6.7
Delivery of the first child by cesarean section in the last 5 years (%)		51.1	60.6	54.5	31.6	41.3
Delivery of the first child by cesarean section between 5 to 10 years ago (%)		32.5	42.6	39.3	25	30.3
Delivery of the first child by cesarean section between 10 to 15 years ago (%)		28.2	28.0	42.9	12.8	19.4
Number of children (%)	0	6.4	8.9	12.9	10.1	6
	1-2	52.0	62.3	61.3	59.3	62.2
	3-4	34.8	27.2	22.7	24.1	24.9
	5+	6.9	1.6	3.1	6.5	6.9
Mean (SD) of Number of children		2.3±1.3	1.9±1.1	1.8±1.3	2.09±1.4	2.2± 1.2
Desired fertility (%)	0	0	0.2	0	0	0
	1-2	14.8	47.5	47.6	37.8	37.9
	3-4	75.9	49.8	49.2	55.4	53.7
	5+	9.4	2.5	3.1	6.7	8.4
Mean (SD) of desired fertility		3.4±0.8	2.6±0.8	2.7±0.9	2.9±1.02	2.9±1.01
	<=18	14.1	27	14.3	21.9	15.2

Age atthe birthof firstchild (%)	19-24	61.8	50.2	51.8	55.6	52.5
	25+	24.1	22.7	33.9	22.5	32.4
Mean (SD) of Age atthe birthof firstchild		22.2±3.9	21.5±4.4	22.9±4.5	21.6±3.9	22.7±4.2
Educational level (%)	Uneducated and elementary	49.0	29.3	29.9	53.5	61.6
	High school	44.6	59.6	55.2	41.0	31.0
	university	6.4	11.1	14.9	5.5	7.4
Social class	High	11.8	8.5	12	6.2	11.5
	middle	70	47.8	50.5	49.7	52.1
	low	18.2	43.7	37.5	44.1	36.4

Table2: Demographic and fertility characteristics among the Rural and Nomads women

Variables		**Rural**	**Nomads**
Frequency % (n)		82.4(1102)	17.6(235)
Mean (SD) of Woman's age		32.7 ±7.1	32.7±7.4
Women's age at marriage (%)	<=18	37.2	30.7
	19-24	46.6	45.2
	25+	16.3	24.1
Mean (SD) of Women`s age at marriage		20.4±4.5	21.3±4.7
Cesarean in first delivery (%)		31.0	17.3
Cesarean in second delivery (%)		29.2	17.2
Cesarean in third delivery (%)		23.5	11.4
Cesarean in fourth delivery (%)		24.5	8.5
Cesarean in fifth delivery (%)		17.0	15.0
Delivery of the first child by cesarean section in the last 5 years (%)		53.6	27.8
Delivery of the first child by cesarean section between 5 to 10 years ago (%)		37.3	17.2
Delivery of the first child by cesarean section between 10 to 15 years ago (%)		26.1	20.0
Number of children (%)	0	9.2	8.1
	1-2	61.6	53.6
	3-4	25.4	28.9
	5+	3.8	9.4
Mean (SD) of Number of children		2.02±1.2	2.3±1.5
Desired fertility (%)	0	0.1	0
	1-2	43.8	39.1
	3-4	51.6	51.5
	5+	4.5	9.4
Mean (SD) of desired fertility		2.7±0.95	3.02±1.1
Age atthe birthof firstchild (%)	<=18	21.5	15.8
	19-24	51.9	54
	25+	26.6	30.2

Mean (SD) of Age atthe birthof firstchild		22.05±4.3	22.6±4.3
Educational level (%)	Uneducated and elementary	40.2	74
	High school	49.8	23.8
	University	10.0	2.1
Social class	High	9.7	5.6
	middle	52.7	45.9
	low	37.6	48.5

Table 3: The rate of Cesarean Section by ethnicity and religion

	Shia Persians	**Sunni Persians**	**Shia Lurs**	**Shia Arabs**	**Shia Turks**
Cesarean Section	35.5%	28.4%	38.1%	21.2%	26.5%
F-Test	4.28				
P-value	0.001				

Table 4: The rate of Cesarean Section in terms of rural or nomadic residence

	Rural	**Nomads**
Cesarean Section	30%	15%
F-Test	4.4	
P-value	0.001	

Table 5 Logistic Regression for the effect of women's education and income on cesarean

Independent variable	**Shia Persians**		**Sunni Persians**		**Shia Lurs**		**Shia Arabs**		**Shia Turks**	
	t	Sig.	t	Sig.	T	Sig.	t	Sig.	t	Sig.
Woman's Educational level	1.443	0.000	1.397	0.000	1.350	0.000	1.358	0.000	1.342	0.000
Income	.891	.064	.981	.853	.929	.517	.966	.757	.912	.360

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