



## Relation of Knowledge about Cesarean Disadvantages and Delivery Mode Selection in Women with First Pregnancy; South of Iran

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DOI: 10.5455/jrmds.20186283

### ABSTRACT

The aim of the study was to assess the relation of knowledge score for cesarean disadvantages and selecting the mode of delivery. In this cross-sectional study, we studied 192 women who referred to obstetrics and gynaecology clinics in Jahrom, Iran. All women and their fetus were healthy without any problems and were in the third trimester of first pregnancy. We used a questionnaire including demographic situations and eighteen questions about disadvantages of cesarean section. The data recorded with using SPSS version 15 and analyzed by chi-square, independent t-test and one-way ANOVA test. Mean knowledge score was lower among mothers that intend to do cesarean section than those selected vaginal deliveries ( $10.82 \pm 4.46$  vs.  $12.50 \pm 4.08$ , respectively) that there was significantly different ( $P= 0.025$ ). The most common reason for choosing cesarean section was fear of vaginal delivery ( $n= 24$ , 61.6%). The mean knowledge score was higher women who selected cesarean section in comparison to ones selecting vaginal delivery. Thus an important step is providing better information to pregnant women about modes of delivery, their indications, advantages and adverse consequences.

**Key words:** Pregnancy, Delivery, Cesarean Disadvantage, Knowledge

**HOW TO CITE THIS ARTICLE:** Abdolreza Sotoodeh Jahromi, Karamatollah Rahmanian, Abdolhossein Madani, Relation of Knowledge about Cesarean Disadvantages and Delivery Mode Selection in Women with First Pregnancy; South of Iran, J Res Med Dent Sci, 2018, 6 (2):550-556, DOI: 10.5455/jrmds.20186283

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**Received:** 02/01/2018

**Accepted:** 18/02/2018

### INTRODUCTION

Delivery is one of the most sensitive and important health indexes for health system in the all communities. And similar to each health service must be suitable and low cost and do with at least physical and mental complaints [1]. Therefore, cesarean section as one of the delivery methods is no exception from this rule. The maximum acceptable level of cesarean delivery for mother and child program to have the best results is estimated between 5-15 percent [2]. During recent decades, the cesarean section rates have been increasing in different parts of the world [1, 3, 4]. In Iran, cesarean rates were varied from 19.5% in 1975 to 48.0% in 2010 [5, 6]. Rahmanian et al reported a cesarean section rate of 32.2% in Jahrom during January 2008 to March 2009 [7].

Cesarean section cause higher morbidity and mortality rates for mother and child particularly following elective cesarean section that did without medical indicators [8, 9]. Studies in the UK have shown that the risk of maternal death due to cesarean delivery is three times more than vaginal births [10]. Other risks of cesarean delivery for the mother include: mother bleeding during and after surgery, wound infection, infertility and deep vein thrombosis [11].

The absolute indications for cesarean section was contain a fetal distress, cephalopelvic disproportion, fetal mal-presentation, placenta previa, abruptio placenta, umbilical cord prolapse, severe preeclampsia, failure of progress during labor and maternal medical conditions [12]. The most of cesarean section is performed without any medical indication and some due to maternal request [13]. In developing countries, women tend

to cesarean section reasons to believe and socio-cultural comments. Main reason of selecting cesarean section by pregnant women is fear of labor pain [14, 15], fetal injury during vaginal delivery [15, 16] and lack of sufficient knowledge about normal vaginal delivery.

Investigators reported that obstetrician and gynecologists believe that women have the right to cesarean delivery on maternal request [17, 18]. Among pregnant women who selected cesarean section as delivery mode, 68.6 and 21.9 percent, respectively had moderate and poor knowledge about the benefits and harms of cesarean section [16]. Pregnant women with a history of cesarean section during the last pregnancy, had lower the level of awareness and knowledge levels about advantage and disadvantages of delivery modes compared to women with a history vaginal delivery [19]. Also Ghasvari *et al.*, in Jahrom suggested that women who selected cesarean section as delivery method had good knowledge level about 33.9% but was 47.5% for who intended to vaginal delivery ( $p= 0.04$ ) [20].

One of main cause of cesarean section is positive history of previous cesarean section. In study conducted by Rahmanian *et al.*, 34.9% of performed cesarean section were due to previous cesarean section [7]. Therefore, the elimination of cesarean section in women with first pregnancy can prevent from next one. The aim of our study was to determine of relationship between requests of mothers for cesarean section and knowledge about cesarean complications among women with first pregnancy.

#### MATERIALS AND METHODS

A descriptive cross sectional study was performed on pregnant women in third trimester who attended to antenatal clinic in two hospitals in Jahrom, south of Iran. All participants were women with first pregnancy without any disorders. One hundred and ninety-two women participated in study. Informed consent received from the participants after obtaining ethical approval from Jahrom University of the research committee.

The data regarding age (years), educational status, living place, intended of delivery mode, because of selected cesarean section and knowledge towards advantages and disadvantages of vaginal and cesarean delivery was collected. A questionnaire

was designed for this study consisting of 18 statements for evaluating knowledge toward advantages and disadvantages of cesarean section and vaginal delivery. In our study, the validity of the questionnaire contents was approved by obstetric specialists. Using the Cronbach coefficient, the reliability coefficient of the knowledge statements was calculated as 0.85. For uneducated women the researcher read the questions to the patients and chose the answers based on their view.

For scoring knowledge statements, 1 point was given to each correct response and 0 points to incorrect and 'I don't know' answers. The overall maternal knowledge score was described as good (score 13-18), moderate (score 7-12) and poor (score 0-6).

Data were recorded by SPSS, versions 15. Qualitative variables were presented as frequency and quantitative variables were presented as mean  $\pm$  standard deviation. The chi squared test was used to compare the proportions between groups and the student t test and one-way ANOVA was used to compare the quantitative variables. The  $p < 0.05$  was considered to be statistically significant.

#### RESULTS

Some demographic and social characteristic of participants showed in Table 1. One hundred ninety-two women with first pregnancy (third trimester) participated in study. The mean age of participants was  $23.59 \pm 3.79$ , with the minimum and maximum age of 15 and 36 years old, respectively. Seventeen of subjects (8.9%) were 18 years or younger and two women (1%) were 35 and 36 years old. Majority of subjects (84, 43.8%) were in the age group of 22-25 years. One hundred and thirty-seven (71.7%) of women lived in city and majority of participants were educated to diploma level (40.7%).

Totally, 39 (20.3%) participants selected cesarean section as delivery root. The most common reason for selecting cesarean section was fear of vaginal delivery (24, 61.5%). Other reasons, in order to, were to have lesser pain of cesarean section (8, 20.5%) and to be more comfortable (7, 17.9%) of cesarean during delivery.

**Table 1: Age, place of residence and educated level of women with delivery mode**

Study groups	Total	Cesarean	Vaginal	P value
Variables	Number (%)	Number (%)	Number (%)	
Age group (year)	15-21	58 (30.2)	8 (13.8)	0.274
	22-25	84 (43.8)	18 (21.4)	
	26-36	50 (26.0)	13 (26.0)	
Place of residence	City	137 (71.7)	31 (22.6)	0.132
	Village	54 (28.3)	7 (13.0)	
Education	Under diploma	51 (27.0)	4 (7.8)	0.009
	Diploma	77 (40.7)	15 (19.5)	
	High degree	61 (32.3)	19 (31.1)	

**Table 2: Corrected answer of pregnant women about knowledge of cesarean disadvantage to selected mode of delivery**

Questions	Expected answer	Cesarean Section selecting	Vaginal delivery selecting	P value
		Number (%)	Number (%)	
Q1- In which the mother loses more blood? Vaginal delivery or C-section	cesarean	18 (50.0)	78 (52.3)	0.800
Q2- In which the risk of loss of normal vaginal delivery is higher in future pregnancies? Vaginal delivery or C-section	cesarean	27 (71.1)	95 (65.1)	0.487
Q3- In which the possibility of damage to the bladder and intestines and decrease intestinal activity is there? Vaginal delivery or C-section	cesarean	19 (51.4)	104 (72.7)	0.013
Q4- In which the incisional infection is more? Vaginal delivery or C-section	cesarean	23 (59.0)	130 (86.7)	< 0.001
Q5- In which Infection of the uterus and urinary system in higher? Vaginal delivery or C-section	cesarean	19 (51.4)	84 (56.0)	0.611
Q6- In which is more the possibility of uterine rupture in subsequent pregnancies? Vaginal delivery or C-section	cesarean	18 (46.2)	77 (51.3)	0.564
Q7- In which type of delivery, duration of pain and disability in the mother is more? Vaginal delivery or C-section	cesarean	28 (73.7)	122 (81.9)	0.258
Q8- In which delivery the probability of ectopic pregnancy is more in subsequent pregnancies? Vaginal delivery or C-section	cesarean	24 (68.6)	111 (81.6)	0.091
Q9- In which the possibility of visceral adhesions and infertility is more? Vaginal delivery or C-section	cesarean	28 (71.8)	125 (86.8)	0.025
Q10- In which kind of labors the financial cost is more? Vaginal delivery or C-section	cesarean	36 (94.7)	151 (98.7)	0.127
Q11- In which the possibility of blood clot in the lung is more? Vaginal delivery or C-section	cesarean	30 (81.1)	120 (84.5)	0.614
Q12- In which is more needs to care for mother and baby? Vaginal delivery or C-section	cesarean	30 (76.9)	121 (84.0)	0.300
Q13- In which the rate of breathing problems and respiratory distress in infants is more? Vaginal delivery or C-section	cesarean	19 (51.4)	101 (67.8)	0.061
Q14- In which the risk of maternal death is more? Vaginal delivery or C-section	cesarean	13 (34.2)	81 (54.4)	0.027
Q15- In which the risk of neonatal death is more? Vaginal delivery or C-section	cesarean	11 (28.9)	77 (52.0)	0.011
Q16- The risk of asthma in neonates in which is more? Vaginal delivery or C-section	cesarean	27 (73.0)	113 (78.5)	0.476
Q17- In which the risk of preterm birth is more? Vaginal delivery or C-section	cesarean	24 (63.2)	99 (66.0)	0.742
Q18- The congenital malformations in subsequent pregnancies in which are more? Vaginal delivery or C-section	cesarean	28 (73.7)	124 (83.8)	0.151

Eight (13.8%) of women aged 15-22 years was preferred cesarean section as a delivery method, but this was 26.6% for women in age group of 26-36 years, that there was no significantly different ( $p= 0.274$ ). Also, there was no significant different in preferred delivery mode between women who lived in city or village ( $p= 0.132$ ). Only the level of education was statistically significant between women who desired vaginal delivery or cesarean

section as method of childbirth (Table 1). Accordingly, women with high degree of education selected more cesarean section as delivery method than that of under diploma (31.1 vs. 7.8%,  $p= 0.009$ , respectively).

The details of the questionnaire related to patients' knowledge are presented in Table 2. Those pregnant women who chosen vaginal

delivery was responded higher corrected answer to all questions except to 2nd question. The correct answer was significantly higher to questions "In which the possibility of damage to the bladder and intestines and decrease intestinal activity is there?", "In which the incisional infection is more?", "In which the possibility of visceral adhesions and infertility is more?", "In which the risk of maternal death is more?" and "In which the risk of neonatal death is more? Vaginal delivery or Cesarean section?" among women who selected vaginal delivery. The correct answer was highest for "which kind of labor the financial cost is more? Vaginal delivery or C-section" question among in cesarean section (98.7%) and vaginal delivery groups (94.7%) groups. Adversely, the knowledge was at least for question of "which the risk of neonatal death is more? Vaginal delivery or C-section" among study groups, in cesarean section was 28.9% and in vaginal delivery was 52.0%.

Mean knowledge score of cesarean disadvantages was significantly higher among women that intended to do vaginal delivery than those selected cesarean section ( $12.50 \pm 4.08$  vs.  $10.82 \pm 4.46$ , respectively;  $p= 0.025$ ). For reason that education level was different in mode of delivery, we analyzed knowledge score by stratification of educated level. Although, the mean score of disadvantages of cesarean section was higher in women selected vaginal delivery than that in women selecting cesarean section in all educated levels but was statistically significant for diploma and higher degree of education ( $p= 0.045$ ). In the other one, the knowledge of women who selected cesarean delivery had lower score than whom selecting vaginal delivery about disadvantages of cesarean section. This means that knowledge of cesarean disadvantages among women who preferred cesarean section for delivery is certainly lower than those others (Table 3).

**Table 3: The mean score of knowledge toward delivery mode by education**

Education	Cesarean section		Vaginal delivery		P value
	Mean	SD	Mean	SD	
Under diploma	10.25	5.25	11.21	4.15	0.664
Diploma	10.27	5.02	12.73	3.97	0.045
Higher degree	11.47	4.10	13.71	3.90	0.045

SD: Standard Deviation

Considering the responses to the questions assessing the subjects' knowledge indicated that 6 (28.6%) of women with poor score, 16 (21.6%) of whom with moderate score and 17 (17.5%) of women with good score were chosen cesarean delivery that these different were no significant ( $p= 0.490$ ).

## DISCUSSION

At the moment, mothers participate in making decision about their child's birth method [9, 21]. One of the important factors affecting their decision is their level of knowledge about delivery methods [22]. In developing countries, lower education level is responsible for poorer knowledge of human reproduction than women in developed countries [23]. Naeimi *et al.*, suggested that the level of education was significantly associated with the level of knowledge [24]. Also other researchers showed that education had significant influence on knowledge of cesarean delivery [25, 26]. Adversely, we found that lower educated level associated insignificantly with poor knowledge score and knowledge level.

In the past decade, the cesarean section rate has dramatically increased and mothers' request for elective cesarean in uncomplicated pregnancies has become prevalent. Bukar *et al.*, reported that majority (89%) of women would prefer vaginal delivery [25]. Varghese *et al.*, reported that majority of women (69%) preferred vaginal mode of delivery because they believed that it enhances the affectionate relationship between mother and baby [27]. Rahmanian and colleagues [7] in a study conducted in 2008 reported approximately 32% of all deliveries performed by Cesarean section and 6.7% of women who become cesarean section was for mothers request that reminds the necessary of do not a C-section without medical indication, especially in the first pregnancy.

In present study, 39 (20.3%) of women were selected cesarean section as method of their delivery for reasons without any medical indications and women selected this mode by reasons of fear of vaginal delivery pain (61.6%), lower pain of CS than vaginal delivery (20.5%) and more comfortable of CS (17.9%). Similar reports suggested by Jamshidi-ewanaki *et al.*, [28]. In study conducted by Ghotbi *et al.*, approximately 21% of the total cesarean deliveries that performed in public and private hospitals were maternal request [29]. Johnson *et al* [30], Bukar *et*

*al.*, [25] and Ali-mohammadian *et al.*, [31] has reported a 10%, 11% and 22% rate of maternal request respectively. Similar to our result, the most common reason for maternal request was the fear of pain [25, 29]. These findings are higher than the results of Jamshidi-Evanaki's study that reported that 38.3% of pregnant women stated fear of pain following vaginal delivery [28]. Also, in study conducted by Bagheri *et al.*, [32], fear of the delivery pain was one of the most important reasons that made women to select the cesarean. Hence it becomes necessary to return positive cultural and social values towards normal vaginal delivery and decrease negative beliefs attached to it.

Our study showed that women in CS group had lower mean knowledge with significant different about advantage and disadvantage of CS. Arjomandi and Farzin-moghaddam reported that women who delivered vaginally had higher mean score and level of knowledge compare to those delivered by CS [19].

The high frequency of unnecessary cesarean section could be due to women or providers choosing this option after previous complicated birth, previous cesarean section, and low informed and educated women about vaginal birth and associated pain and management. So to guide young women towards the vaginal childbearing is essential to overly involved preparing delivery classes and counseling classes, eliminate the fear and anxiety of mothers about vaginal birth, do painless delivery or pain relief during birth and inform mothers about the benefits of vaginal delivery and complications and risks of cesarean delivery.

### CONCLUSION

The education is an important factor that effect on knowledge. With eliminate of this effect, our result showed that the mean of knowledge about disadvantages of cesarean was no different between study groups. Labour pain is one of the most severe pains that women practice during their lifetime. One of the reasons for cesarean delivery is fear of labour pain and lack of relief methods. A significant step in controlling the rising cesarean birth rate in developing countries is providing better information to pregnant women and their partners during the antenatal period about modes of delivery, their indications, advantages and adverse consequences. This can

lead to a positive maternal knowledge and attitude towards vaginal delivery.

### Acknowledgements

The authors would like to express their appreciation to Jahrom University of Medical Sciences for the financial support on foundation.

### Competing interests

The authors declare that no competing interests exist.

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