Evaluate the Factors Associated with the Choice of Cesarean Section among Pregnant Women

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Abstract

Introduction
Caesarean section is usually limited to factors that vaginal delivery is not possible or associated with the serious risks to the fetus and mother. So, it is expected a few specific indications forces are an delivery, and the rates do not exceed certain limits. But in our country today, the cesarean rate is reported to be more than acceptable. The aim of this study was to evaluate the social, cultural and demographic factors associated with the choice of delivery method. Methods
The population of pregnant women was in cities and villages around Uremia city and the intended sample size was 299 for pregnant women of which 171 were urban and 128 were rural. Sampling was in classification. Using question naire, data was collected and data was analyzed by SPSS software and logistic regression and Pearson Chi-Square. Results
Inferential multi variate statistics and findings indicate a significant association between maternal education and the mother's age and father's occupation and child birth with choosing cesarean, but there was no significant relationship between the place of residence (urban or rural), father's education, mother's occupation, father's occupation, father's age, wanted and unwanted babies and sex with choosing cesarean. The variables, maternal education, maternal age and rating childbirth were entered. According to the importance of place of residence variable its correlation with mode of delivery was confirmed using the Chi-square test. Conclusion
Maternal education, maternal age and rating childbirth were the most important factors in choosing cesarean section. So, it is necessary to organize training workshops form others with high education and young age that are experiencing their first pregnancy, to reduce cesarean section cost.

Keywords: Pregnant women, Cesarean section, Vaginal delivery.
Introduction

Pregnancy is a physiological phenomenon and child birth is a completely natural process that requires protection measures, not a pathological condition that requires intervention and treatment [1,2]. Childbirth can be known as one of the most beautiful events in life of every woman, mother's identity acquisition and at the same time a stressful reality that sometimes due to medical reasons and in order to prevent dangers that threaten the mother and baby, the natural history have been in trouble and this operation is not possible through the normal channel; therefore, cesarean section in this situation can occur as an emergency measure [3].

Birth of a child is the sweetest moment in the life of a parent. But one thing is very important, choosing the way of the child birth [4,5]. Caesarean section refer store move the fetus, placenta and membranes through an incision in the abdomen and uterus [6]. It should be limited to cases in which cesarean a delivery is not possible through normal channels or associated with serious risks for mother and fetus. Caesarean section has limited to specific cases [7].

The absolute indications for cesarean section includes mismatch of the pelvis, the transverse or oblique of the fetus, placenta Previa, placental abruption, cord prolapse, severe preeclampsia, and overall the conditions that the mother or fetus jeopardized in the absence of surgical intervention[8]. Relative indications forces are an section include fetal distress, failure to progress in labor, multiple, very small and very large babies, breech and women with a previous cesarean an [9].

This method of delivery (cesarean section) has been increasingly growing in the world and as if the studies indicate, the rate of cesarean section reaches from 5% to 25% over the last twenty years [10]. Cesarean rate in the world in 1984 was 21.2% that increased in 1987 to 25% and in 1994 increased to over 30% [7]. There are too many differences at national and international level in rates of cesarean and delivery. [11, 12] Cesarean prevalence in most countries differs considerably with acceptable statistics announced by the World Health Organization that 10 to 15 percent of births [13].

In Latin America cesarean an rates differ from 16.8% to 40% [14,15] while the rate in European countries is from 13 to 25 percent [16]. The Canadian rate is about 20-25% [17], 32.6% in India [18], in the UK about 21%, in Scotland 14.2%, in Sweden 10.7% [19] and in the United Arab Emirates nearly 10% of the deliveries include cesarean[20]. In the meantime, Iran has a high record of cesarean. According to the World Health Organization in 2004, in Iran, cesarean has included 35% of the total deliveries [21].

In 2006, the cesarean section rate in Iran was 42.3% and in 2009, in Iran 50-65% of the deliveries were cesarean, which 90% are carried out in cities and private hospitals [22]. The incidence of cesarean section in Shahroud city has been reported 50.2% [23], in Qom 44.4% [24], in Isfahan city 53.4%, in the province of Isfahan 44% [25,26], in Kerman 37.6%, in Tehran province 36.4% [24,27] and in the province of Kermanshah 40% [28]. A study conducted in 2004 in Tabriz, 45.6% of study participants had a cesarean delivery [29]. Nearly, of each two deliveries one case is performed via cesarean section [10]. While in the United States, the ratio is approximately 1 in every five births [30]. According to statistics on the incidence of cesarean section, Iran after South America (e.g. Chile) is the second largest country in terms of high rate of cesarean delivery [25]. Studies have shown that women are more likely to have aces are a section 3 times more than 20 years ago and in some communities it has become a luxury.
mode of action [31]. Meanwhile, the World Health Organization considers cesarean section up to 15% appropriate, normal and acceptable [13, 32]. It is worth mentioning that in Iran close to 40% of cesarean sections are elective and, if necessary, does not happen, but is selected at the request of the mother and with no clinical evidence as a superior method of delivery. Maternal mortality rates associated with cesarean and versus vaginal delivery is 2-7 times and the rate of failure is 5-10 times [33, 34].

Due to complications and adverse outcomes of cesarean delivery such as, postpartum depression, infectious diseases, anesthesia, neonatal respiratory problems, reduced fertility, reduced preterm weight of infants [35, 36] these numbers and a steep rise in recent years can be considered as a threat to the health of women, newborns, family and the society and manifested as one of the health care problems. However, over the past 50 years, with the development of antibiotics, anesthesia, and the prevention of thrombosis, cesarean delivery is safer, but is not completely safe yet. It was recently reported that the risk of complications due to a non-emergency elective caesarean section, has been almost 3 times compare to vaginal delivery [37].

Numerous studies around the world have been indicated contributing factors in the increase of the prevalence. The following can be mentioned as examples: social and economic conditions [19, 38], the doctor's personal work [19], maternal parity [39, 40] spend time and attentions of Forensics [41], knowledge and attitude of mother towards delivery methods [42, 43] maternal request [13, 44]. The results of a study that was conducted in 2004 in the Semnan city shows that 38% of pregnant women tend to be delivered by cesarean section and the most common reason for cesarean section have been mentioned due to fear of delivery pain [45].

Today, the increase in the cesarean rate is not due to upgrading and improving the surgical and anesthetic techniques, but the real reasons are not entirely clear and factors such as fear of litigation, fear of pain, pelvic injury or a bad experience with a previous vaginal delivery, are raised for this issue [46, 47]. According to the studies conducted in this areas reasons for choosing cesarean by mothers it can be stated that, the main causes of maternal fear of vaginal delivery pain are misconceptions about the superiority of cesarean delivery, lack of knowledge about the harmful consequences of it, a negative attitude toward the vaginal delivery and attributing rumors and wrong complications to it [48].

Some studies indicate that the cause of increasing rate of cesarean is mothers' belief that cesarean delivery is easy for children and for them [49, 50]. Some mothers also believe that if a baby is born by C-section he will be cleverer [51, 52]. For many women, deciding on the choice of delivery method is not easy and may be influenced by many factors. These factors include social, family, medical advice and delivery experience as well as relative risks and benefits of vaginal delivery viruses are aspects in the current pregnancy [53].

Thus, in many cases medical necessities are not leading to cesarean section. But ignorance, beliefs, wrong behaviors and attitudes are determinant of the method of delivery. This means that the willingness to performers are an delivery in women has cultural, social and psychological roots; therefore, increasing the rate of cesarean and decreasing the rate of vaginal delivery with no substantial benefits for babies and raising significant negative side effects for the community provide areas for focusing and studying the problem cesarean. Because acknowledging he factors associated with this behavior, can guide health planners and health administrators to make health care decisions.
If there is no specific regulatory system for the evaluation of cesarean section and vaginal delivery, vaginal delivery will give way to cesarean delivery with further complications. The importance of this issue convinced the researcher to carry out research in this area to find relevant factors associated with choosing the method of delivery and by achieving results and publishing it to the authorities can take an effective in health and women's health promotion.

**Materials and Methods**

This study was a descriptive- cross sectional study conducted to determine factors associated with choosing cesarean among pregnant women in 2014. The study population included all pregnant women in the city of Urmia, who were referred to both public and private clinics, hospitals and gynecological clinics. In this study, 299 pregnant women were examined, of whom 171 were urban and 128 were rural.

After preliminary studies and determination of sample size, sampling with stratified method was performed in two steps. First, all treatment centers divided into rural and urban and then from each sector, required health centers, hospitals and clinics were selected randomly. After coordination with intended clinics and hospitals and research community and informed consent from participants, data were collected through questionnaires.

In this way that the questionnaires were at the disposal of respondents after implied consent and the respondent in the presence of the interviewer is answered the questions.

The underlying assigned questions of assessment form of child development consist of33 questions; however, in this paper, only 12 questions of the questionnaire are used. After collecting data using SPSS software, the data was processed at two levels of description and explanation. In inferential statistics to estimate the specific effects of each independent variable on the probability of choosing the delivery method and the correlation between variables, logistic regression and Pearson Chi-Square were used that this is done using SPSS18 software.

**Results**

The present study was conducted on 299 mothers that had been born their baby with either vaginal or cesarean delivery in the city of Urmia in which 128(42.8%) were rural and 171 (57.2%) were urban. The descriptive statistics show that the mean age of the women in the study, who were pregnant, was 26.33±6.35 and for their husbands was 30.78±6.38 year. Of the 299 pregnant women literacy rate is as follows, 28.4% were illiterate, 28.1% were elementary, 15.7% were guidance, 19.7% were high school, and 8% had a college education. And the husbands of the pregnant mothers, 9.7% were illiterate, 31.8% were elementary, 20.1% were guidance, 25.4% high school and 13% had a college education. Also among the pregnant mothers 94% were housewives and 4% were employees.

And among the husbands of the pregnant mothers only 3.3% were unemployed and 0.7% had died and the rest were employed. And also among the babies born 90% was according to the wishes of parents and 10% were UN wanted. It should be noted that among the infants in the sample 71.2% were born by vaginal delivery and 28.8% were born by cesarean section.

Table 1 also shows the frequency distribution of delivery type according to separation of pregnant mothers’ place of residence that among 128 rural pregnant mothers, 105 of them (82%) have their babies born by vaginal delivery and 23 (18%) by cesarean section while among 171 urban pregnant mothers, 108 (63.2%) of them have their babies born by vaginal delivery and 63 (36.8%) by cesarean section.
As shown in this table the mothers that had childbirth more than or equal to twice and before the last pregnancy, have further attempted to cesarean delivery compared to mothers who were pregnant for the first time.

Table 2 also shows the frequency distribution of delivery type according to birth rank. For example, according to Table 3 mothers who lived in the rural areas compared to those who lived in urban areas is equal to 1.009, which reflects the high demand of urban mothers to cesarean.

Inferential statistics and multivariate findings indicate a significant association between father's education and mother's age and father's occupation and mother's place of residence with choosing the delivery type, but there was no significant relationship between birth ranks, mother's education, mother's occupation, father's age, wanted and unwanted infants and gender with choosing the delivery type. The variables of maternal education, maternal age and birth rank of infant sentered into study. The coefficients for each of their maining variable sin the model, with odds ratios and the significance of the parameters were generally listed in Table 3.

Table 3: Parameter coefficients multivariate logistic model with significance level of the parameters

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As well as, with increasing one unit of maternal age the probability of choosing a caesarean section to give birth to infants reaches to 0.817, which shows that with increasing age the likelihood of choosing caesarean section reduces. Also with increasing father's occupational level the probability of choosing cesarean section and with increasing father's educational level the likelihood of choosing cesarean section by mother reduces significantly.

Discussion

Cesarean section is a method in which baby is born through an incision made on the abdomen and womb of the mother. Today, cesarean is one of the most common surgeries that are performed to avoid probable health risks for mother and fetus. Increasing rate of cesarean operations, attract the attention of professionals and the medical community has discussed the need for a cesarean [54].

Unfortunately, most of pregnant mothers due to fear of delivery pain and inaccurate information about the physical effects of a vaginal delivery on delivery canal, without knowledge of the dangers of cesarean section,
seeking to perform it and insist on their doctor to do cesarean. Results indicate that there is a significant relationship between mother's education and mother's age and father's occupation and childbirth rank and place of birth (city or village) with choosing C-section.

The ratio of those who were chosen cesarean in this study was 28.8%. Wedo not intends to generalize, but to mention the results of some previous studies that are consistent with some of our findings. The cesarean rate in the medical population in Lalui et al. study was 50.5%, in Mohammed Beigiet al. study the relative frequency of cesarean section in Shiraz was 66.4% [55], in Moradian et al. study the cesarean section rate was 38% [56] and in Faramarzi et al. study 38.4% of women has chosen cesarean section [57]. In Aram et al. study, 43% of pregnant women, in Fardi Azar study 55% [58], and in Mohammad Pourasl study 45.6% of women prefer to have a cesarean delivery.

In Singapore, Chong study results indicate that only 3.7% of women have chosen CS and 96.3% of them preferred vaginal delivery [59]. Graham et al. in their study found that only 7% of women were asking for cesarean delivery and 93% of them wanted vaginal delivery [60]. The data obtained in this field of study is noticeable. In this study, the variables of maternal education, maternal age, parental occupation, and childbirth rank and place of residence (urban or rural) were the important factors in choosing a cesarean section. But, there was no significant relationship between father's educations, mother's occupation, father's occupation, father's age, wanted and unwanted birth and gender with choosing cesarean. Finally, the variables of maternal education, maternal age and childbirth rank were entered. According to the importance of place of residence variable, its correlation with the method of delivery was confirmed using Chi-square test. Looking at other studies confirm these findings. In Mohammad Beigi study, employment status, age, and education as well as in Mohammad Pourasl et al. study the educational level with choosing C Shad a significant relationship.

Also in Khosravi et al. study that was conducted in 2007, this conclusion was confirmed [61]. In this study, we found that there is a significant relationship between place of residence and choosing cesarean section. Such as, choosing cesarean section among people living in cities is more likely than those who are living in rural areas.

Conclusion
According to association of prenatal and neonatal care in the UK in recent years, the best strategies for reducing and balancing the frequency of cesarean are raising mothers' awareness and trying to reduce their fear of delivery as well as increasing their trust in the health system and these training should be included in medical care during pregnancy, educational and counseling sessions before birth and physicians and medical and midwifery staff are responsible for the education and awareness [62].

As the clinical guideline of National Association of Health on Caesarean section says, all mothers should receive enough information from the doctor and her midwife about the reasons of doing cesarean and risks and benefits of it [63]. Finally, it can be noted that a part of the desire of pregnant women for cesarean delivery depends on features as cultural, social and self-awareness of mother and the place of residence [64].

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