



## Study of Some Factors Contributing to Pregnant Women's Tendency to Choose a Delivery Method

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**Abstract.** Delivery is a multidimensional process considered as a critical experience in women's lives. According to previously conducted studies, cesarean section rate, over the past two decades, has increased in both developed and developing countries. This is under the influence of many factors. One of the methods of reducing this rate is to identify the causes and factors affecting women's choice. 271 pregnant women, admitted to Social Security Hospital in Zahdean, participated in this study. The results indicated that fear of labor pain, age, place of residence and previous delivery experience had significant correlation with behavioral intention ( $p < 0.05$ ) and fear of pain (91.1%) and fear of harming the fetus (89.3%) were the most important factors affecting women's choice. Therefore, pregnant women referred to health centers should be informed about disadvantages of a cesarean section and preference for natural childbirth.

**Keywords:** Delivery, Contributing Factors, Behavioral Intention

### 1. INTRODUCTION

Delivery is one of God's blessings to produce human race on earth and has continued since the creation of Adam till now. Delivery mechanism is a spontaneous process without the need for intervention that has been done for years with its natural trend [1]. Hence, a (NVD)<sup>1</sup> done by skilled and knowledgeable midwives and obstetricians with precise and continuous monitoring should have priority over a cesarean section and it is reasonable to employ a cesarean section only as a way to save the lives of the mother and baby in difficult labors [2].

A cesarean section, also known as C-section, is the delivery of fetus, placenta and membranes through cutting a mother's abdominal wall and uterus [3] when there is a risk for the fetus or mother, saving the life of the mother or the baby. According to World Health Organization (WHO), up to 15% of these cesarean sections, which should be done in accordance with specific indications, are acceptable.

However, in general, the cesarean section rate has increased worldwide [4,5]; such that, nowadays, the cesarean section has become one of the safest surgeries, although it has a greater risk for the mother compared to NVD [6].

In recent years, the cesarean section rate has dramatically increased in Iran. In our society, the cesarean section is gradually regarded as a luxurious act. Pregnant women, on the other hand, consider a cesarean section as a method with less pain and fewer complications compared to normal vaginal delivery [7]. Other words, of two deliveries in Iran, almost one is performed

<sup>1</sup> -Normal Vaginal Delivery

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using a cesarean section, while, in the United States, this ratio is roughly one in every five deliveries [8].

Many factors, including medical issues, maternal age, primiparous mothers, previous cesarean sections, demand for tubal ligation, mothers' willingness to a cesarean section due to fear of NVD pain and social and economic problems, have great impacts on the rate of cesarean section in various societies [9].

In a study carried out in hospitals of Jahrom, 24.3% of subjects mentioned fear of NVD pain, 19% stated being easier and having less pain compared to NVD and 18% of subjects considered the mother's problem as the main reasons for their tendency toward C-section [10]. Another researcher posed fear of labor pain as the main reason for C-section [11].

Other studies conducted to report the reasons for choosing cesarean sections by women indicated that women mainly asked for C-section for saving their or their children's health. However, mother's request for a C-section, in some cases, is hidden behind common diagnoses including mismatching mother's hip size with the fetus or previous cesarean sections [12]. One of the other main reasons for the increase rate of cesarean sections is patient's own request for this surgery [13]. Other studies conducted in El Salvador showed that increased rate of cesarean sections was not related to culture and it was more correlated with hospital policies. In many cases, unawareness, families' beliefs, obstetricians' viewpoint and provincial, hospital and intersectoral policies are among factors influencing the rate of cesarean sections [14].

Therefore, in addition to medical reasons, economic and social issues and surgery costs are involved in doctors' decisions for performing a cesarean section [15]. In another study, 70% of women stated that their doctor determined their delivery method [12]. On the other hand, pregnant women consider a cesarean section as a method with less pain and fewer complications compared with NVD [7]. This has a direct impact on women's willingness and behavioral intention. Various studies have attempted to investigate the complications of a cesarean section compared to a NVD and reported that a C-section eliminates the opportunity for creating initial contact between the mother and the newborn baby and postpones breastfeeding and mother's recovery [16]. Although, in some cases, a cesarean section is the only way for solving obstetric emergencies, it has some side effects, including infection, more bleeding compared to vaginal delivery, anesthesia and thromboembolism. Moreover, prematurity, postpartum depression and higher surgery costs are among other issues that are related to a C-section [17, 18]. Hence, a cesarean section mainly results from non-obstetric factors including failure to use natural childbirth technology, fear of pain, patients complain, financial incentives, doctors' preference and philosophy of medical training considering NVD as a pathogenic act [19].

The increased rate of cesarean sections is an issue discussed in various studies. In recent years, the number of cesarean sections has increased in third world countries. One of the methods of decreasing its rate is to identify the causes and factors effecting the selection of a delivery method. Hence, the current study is aimed to determine the causes and factors affecting pregnant women's choice, admitted to Social Security Hospital in Zahedan, in selecting a type of delivery.

## 2. MATERIALS AND METHODS

This descriptive-analytical study investigated and analyzed some of the main reasons for selecting a type of delivery method by 271 pregnant women, admitted to Social Security Hospital in Zahedan. Required data were collected through interviews and filling out questionnaires in 50 shifts, from various shifts, within 90 days. The questionnaire consisted of demographic information, obstetric records and some questions about the subjects' reasons for selecting a delivery method and their behavioral intention of delivery.

## Study of Some Factors Contributing to Pregnant Women's Tendency to Choose a Delivery Method

Interviewers initially became familiar with the questions. Furthermore, ethical considerations and pregnant women's status were regarded as the main requirements of the study. The subjects were willing to cooperate and their consent was obtained. After coordination with hospital administration and security for achieving their authorization for interviewers to interview women referred to the hospital to get prenatal care, the required data were obtained.

In the present study, the first part of the questions associated with personal information (including age, education, place of residence, and occupation). The second part, containing 6 questions, related to obstetric records (gestational age (first trimester, second and third), pregnancy history (How many times did they get pregnant?), previous delivery experience, type of pregnancy (intentional or unintentional), history of abortion and history of infertility). The third part included 6 questions related to the causes and factors contributing to women's choice of delivery method (fear of labor pain, more genital damage, risk to the fetus, previous delivery experience, and faster recovery). Finally, in the fourth part, the subjects' behavioral intention about the method of pregnancy termination was investigated as probably or definitely normal vaginal delivery and probably or definitely cesarean section. Validity of the questionnaire was confirmed using experts' perspectives and its reliability was verified through applying the Cronbach's alpha coefficient that was 0.89. For conducting statistical analysis, descriptive and inferential statistics were employed and to determine the correlation between factors, chi-square test was used applying SPSS 17 software.

### 3. RESULTS

Of total 271 pregnant women under study, 51 women (19.2%) were 15-22 years old, 130 women (48.9%) were 22-28 years old, 70 women (26.3%) were 29-35 years old and 19 women (7.1%) were 36-42 years old. Among the subjects, 245 women (90.4%) were housewives and 26 women (9.6%) were employed. In terms of education, 14 women (5.1%) were illiterate, 11 women (41%) were under diploma, 78 women (28.8%) had diploma and 68 women (25.1%) had a higher degree. 247 individuals (91.5%) lived in the city and 23 individuals (8.5%) lived in rural areas referring to the hospital from their village. Considering their gestational age, 73 women (26.9%) were primiparous, 92 subjects (33.9%) and 106 women (39.1%) experienced their second and third or more than third pregnancy, respectively. From women under study, 48 women (17.7%) had a history of abortion and 7 women (2.6%) had a history of infertility. 201 women (77.5%) had intentional pregnancy and 61 women (22.5%) had unintentional pregnancy.

73 women (26.9%) previously had a cesarean section, 133 women (49.1%) had a previous normal vaginal delivery and 65 women (24%) did not experience pregnancy. This was significantly associated with pregnant women's behavioral intention ( $p < 0.05$ ). Pregnant women's behavioral intention of choosing a pregnancy termination method are indicated in Table 1.

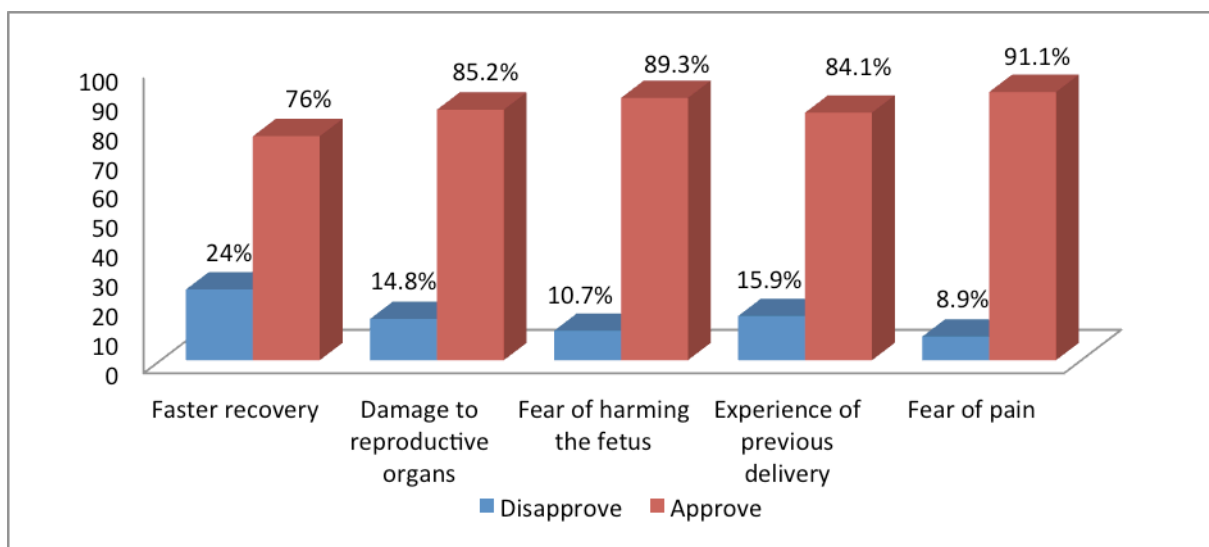
**Table 1.** Distribution of women's behavioral intention of choosing a delivery method.

Cesarean of definitely	Cesarean of Probably	Natural of definitely	Natural of Probably	Behavioral intention
77(28.4%)	39(14.4%)	146(53.9%)	9(3.3%)	Select type

In this study, occupation and education had no significant correlation with tendency toward a specific delivery method ( $p < 0.05$ ); however, this relationship was significant for age ( $p = 0.008$ ). Moreover, there was a significant correlation between place of residence and tendency toward a specific delivery method ( $p = 0.007$ ). Most of people who lived in the city had a tendency to choose a cesarean section. Considering the questions about obstetric records, gestational age, pregnancy history, type of pregnancy, history of abortion and history of infertility were not

significantly associated with women’s tendency to select a specific type of delivery method; however, this relationship was significant for type of previous delivery ( $p=0.001$ ).

Regarding the questions about the factors affecting women’s choice in selecting the type of delivery, there was a significant relationship between fear of NVD pain and women’s tendency to select a specific type of delivery method ( $p=0.014$ ). This means that among 116 women who were eager to choose a cesarean section, 96 women (35.8%) had fear of labor pain and 19 women (0.7%) had no such fear. No significant relationship was found between fear for child’s health and women’s tendency to select a specific type of delivery method; such that 242 women (89.3%) who had a tendency to choose a cesarean section and 29 women (10.7%) who were willing to have a normal vaginal delivery were concerned about their child’s health. Figure 1 indicates pregnant women’s approving or disapproving opinions about the effects of some contributing factors on choosing a method for terminating their pregnancy.



**Figure 1.** Distribution of pregnant women’s approving or disapproving opinions about the effects of some contributing factors on choosing a method for terminating their pregnancy

Based on figure 1, according to the mothers under study, fear of pain 91.1% and fear of harming the fetus 89.3% were the factors influencing the mother’s choice and there was a significant correlation between fear of pain and pregnant women’s behavioral intention ( $p<0.05$ ).

#### 4. DISCUSSION

In the current study, there was a significant correlation between age and women’s tendency to choose a cesarean section. In a study carried out by Movahhed on women referred to health centers of Fars province, the results indicated that age, marriage age, education, spouse’s education and employment status had significant relationships with choosing a C-section. Other studies confirmed this result [20]. In Khosravi et al.’s study conducted in 2007, this finding was confirmed [21].

However, the results of the current study are not in line with those of Gold’s study in which no significant correlation was found between mothers’ age and prevalence of cesarean sections [22]. In another study conducted to investigate pregnant women’s tendency to select cesarean sections, Reding mentioned that previous delivery experience, fear of severe pain and concerns about the child’s health were the main reasons for choosing cesarean sections [23].

## Study of Some Factors Contributing to Pregnant Women's Tendency to Choose a Delivery Method

Movahhed demonstrated that those who had a cesarean section for their previous pregnancy, compared to those who had not such experience, were 131 times more likely to choose cesarean sections. Moreover, experiencing a normal vaginal delivery had a significant correlation with women's choice of selecting their current method of delivery. In the present study, tendency to choose a specific method of delivery was significantly associated with women's previous pregnancy. Considering family history of cesarean section, the results showed that those with a family history of cesarean section were 3 times more likely to choose a cesarean section for their current pregnancy. In this study, 228 pregnant women considered previous delivery experience as one of the factors affecting their choice [20].

Causes of mothers' request for cesarean sections are complex and so many social and cultural issues are involved. The most common reason is fear of pain. In addition, it is believed that a cesarean section is safe for women or it has little risk. In different societies, reasons for fear of labor pain is expressed from various aspects and fear of labor is greater in primiparous women compared to multiparous women [24].

In the current study, tendency to choose a cesarean section was significantly correlated with fear of labor pain and 247 women (91.1%) considered it as the most determining factor for selecting a C-section.

In a qualitative study conducted by John et al. on 23 multiparous and 41 primiparous women, fear of labor was mentioned as an important factor for women's reluctance for NVD. Another contributing factor was that NVD was not regarded as a safe method for saving the fetus health. Most pregnant women considered a cesarean section as a safe method for saving their fetus health [25]. This is in line with the results of Shahavi's study conducted in Be'sat hospital in Sanandaj [26].

In a study carried out in health centers of Rasht, the findings demonstrated that most of the subjects selected cesarean sections for their fetus health, fear of pain, stress and anxiety, and prevention of genital tract lacerations. Moreover, based on priority, the first and the second reasons for choosing cesarean sections were fear of pain and saving the fetus health. 22% of subjects stated that fear of genital tract lacerations as their main reason for choosing C-sections [12, 27].

In the present study, based on figure1, fear of pain (91.1%), fear of harming the fetus (89.3%), fear of genital tract lacerations (85.2%), previous delivery experience (84.1%), and faster recovery (76%) were respectively the main factors affecting women's choice in selecting the method of delivery.

In a study conducted on women admitted to public hospitals in Shiraz, the findings indicated that 21.4% of women had a tendency to C-section and 75.6% tended to have NVD [28]. However, in Rispel's study, most women preferred NVD [29]. In the current study, 116 women (42.8%) versus 155 women (57.2%) tended to have a cesarean section. However, in Fardi's study conducted in Tabriz in 2003, this tendency was reported about 55% [30]. In Movahhed's study conducted in Fars province, 47.2% of subjects were willing to have a cesarean section [20] and in Mohammadbeigi's study carried out in Shiraz in 2008, the prevalence of C-section was 66.4% [31].

Another study conducted in Shiraz indicated that 16.7% of cesarean sections were due to patients' previous delivery. Having a previous cesarean section is one of the most prevalent causes for increasing the rate of cesarean sections. This finding is consistent with that of Mohammadbeigi et al.'s study. In the current study, this was evaluated as the fourth contributing factor (84.1%). Moreover, results indicated that family history of cesarean section

was significantly associated with choosing a cesarean section [20]. Ghosori carried out a study in 2009 on 360 pregnant women and demonstrated that 68% of pregnant women tended to have NCD and 32% of women had a tendency toward cesarean sections [10].

The mentioned facts and figures about the steep rise of cesarean sections in recent years can be considered as a threat to the health of women, baby, family and finally the society and is manifested as one of the main issues related to health. Considering the conducted studies in this research area, fear of NVD pain, false beliefs about the superiority of C-section, lack of knowledge about adverse consequences of NVD, negative attitudes to natural childbirth and ascribe false rumors and complications to NVD can be stated as the main reasons for choosing cesarean sections by mothers [33].

Studies indicated that hearing negative stories about childbirth and watching childbirth videos are involved in creating fear and choosing cesarean sections [26, 33].

It can finally be mentioned that a part of pregnant women's tendency to cesarean sections goes back to facilities of health centers, such that women's dissatisfaction from provided services by health centers, such as staff's attitudes and behaviors, infrastructure facilities and etc. can also influence the steep rise of cesarean section rate in our society. Since one of the main reasons of choosing cesarean sections is fear of normal vaginal delivery pain, pregnant women should be encouraged to have normal vaginal delivery through providing painless delivery methods and since an individual's mental and emotional states can affect his/her body physiology, as a result, fear, anxiety and lack of patient cooperation can disrupt normal physiological mechanisms. Therefore, fear of NVD and tendency to cesarean sections for various reasons can lead to labor disorder. Hence, supporting mothers' emotionally through psychotherapy and training various relaxation methods during childbirth preparation classes and planning for relieving their pain before delivery and during normal vaginal delivery can be effective in encouraging them to have NVD [34, 35].

## 5. CONCLUSION

In the current study, 42.8% of pregnant women tended to have a cesarean section. This is far more than the accepted international statistics which is about 28%. This issue needs more investigations. Future studies should explore the role of physicians, unnecessary cesarean sections and the factors contributing to this issue, since social, medical, economic, cultural and other factors have significant impacts on final plans related to health and on choosing a method of pregnancy termination.

Considering these factors, when there is no indications for a cesarean section, one can persuade mothers to have normal vaginal delivery through increasing their awareness about NVD and creating support groups providing consulting and essential trainings for husbands and mothers of pregnant women. Given the high rate of cesarean sections in urban areas, finding out the reasons for selecting cesarean sections can be a great help for organization related to women's health, as the guardians of family health, to act based on the obtained results considering pregnant women's needs and to decrease this rate through providing more social and mental support and useful consultation and using new successful models of midwifery.

Study of Some Factors Contributing to Pregnant Women's Tendency to Choose a Delivery Method

REFERENCES

- [1] Sharifi Rad GR, Fathian Z, Tirani M, Mahak B.,(2007),”Study on Behavioral Intention Model (BIM) to the attitude of pregnant women toward normal delivery and cesarean section in province of Esfahan –Khomeiny shahr-1385”, J Ilam Univ Med Sci, 15(1), 19-23. (Persian)
- [2] Cunningham FG. (2001),” Cesarean section and postpartum hysterectomy. In:cunningham FG; Norman FG.;larry CG, Williams”, Text book of Obstetrics: From Appleton & lange Asimond Schusler company, pp 537-64.
- [3] Decherney, P. M.,(1999),” Current Obstetric and Gynecologic Diagnosis and Treatment”, lange Medical Book,pp703- 709.
- [4] Fabri RH. and Murta. E F.(2002),”Socioeconomic factors and cesarean section rates “,International Journal of Gynecology and Obstetrics, 76(1),pp 87-88.
- [5] Cunningham F, M. P. and Leveno K,( 1993),” Cesarean section and cesarean hysterectomy. Williams’ Obstetrics”, 19th ed texa Prentice Hail International, INC,pp 591-594.
- [6] Gorrie TM. McKinney ES, and Murray SS.,(1998),” Foundations of maternal newborn nursing”3rd ed. Philadelphia; W.B. Saunders Co,pp 466.
- [7] Garmarudy GH, Efteghar H, Batebi A.,(2002),” Factors underlying action Caesarean section in pregnant women,” Journal of Monitor, 2, pp45-49. (Persian)
- [8] Matias JP, Parpinelli MA, and Cecatti JG, (2007),.” Factors associated with mode of delivery among prim Para women with one previous cesarean section and undergoing a trial of labor”, Rev Assoc Med Bras,53(2),pp109-115.
- [9] Moreno MJ, Bartual E, Carmona M, Araico F, Miranda YA, Herruzo,(2002),”AJ. changes in the rate of tubal Ligation done after cesarean section”. Eur J obstet Gynecol Reprod Biol,97,pp147-151
- [10] Ghosori M, Rahmanian V, Rahmanian K.,(2012).”Knowledge of pregnant women in the southwest Iran about complications of cesarean section, 2009 “,Journal of Jahrom University of Medical Sciences,10(20),pp37-42. (Persian)
- [11] Alehagen S, Wijma K, and Wijma,(2001),” Fear during labor. Acta Obstet Gynecol Scand “, 80(4),pp 315-2
- [12] Saisto T, Halmesmaki E.(2003),” Fear of childbirth: a neglected dilemma”, Acta Obstet Gynecol Scand,82(3),pp201-8
- [13] Marx J. Wiener N. and Davies H.,(2001),” A survey of the influence of patients' choice on the increase in the caesarean section rate”, J Obstet Gynaeco, 21(2),pp 124-127
- [14] Khani S., B. Shabankhani.,(2004),” Can rate of decrease in Mazandaran provincè ”, Journal of Mazandaran University of Medical Sciences,14(2),pp45-49. (Persian)
- [15] Schneider, F. G., and Winn HN.,(2000),”Cesarean section and vaginal birth after cesarean section. In: Clinical maternal”, New York, Parthenon Press, pp15-18.
- [16] Simoes E, Kunz S, Bosing-Schwenkglens M, and Schmahl FW.,(2005)“Association between method of delivery and puerperal infectious complications in the perinatal database of Baden-Wurttemberg 1998”Gynecol Obstett Inves, 60(4),pp 213-217
- [17] Cunningham FG. Prenatal Care.In Cunningham FG, Leveno KJ, Bloom SL, Hanth JC, Gilstrap LC, Wenstrom KD,(2005),”William obstetrics” New York: Lippincott Williams & Wilkins Company,pp87-607

- [18] Hadi zadeh F, Bahrain N., M. Tavakoli J.,(2004),” Comparison of postpartum depression natural and emergency cesarean woman the first Pregnant”, Journal of improve.8(23),PP21-30. (Persian)
- [19] Gamble JA,and Creedy DK.,(2000),” Women's request for a cesarean section: a critique of the literature, Birth, 27(4),pp 256-63
- [20] Movahhed M, Enayat H, Ghaffarinasab E, Alborzi S, Mozafari R,(2012),“Related Factors to Choose Cesarean Rather than Normal Delivery among Shirazian Pregnant Women”, Fasa University of Medical Sciences, 2(13),pp78-83. (Persian)
- [21] Khosravi M, Armat M, Khadem N. (2008),”Prevalence of cesarean and factors related to cesarean ”,Journal of Faculty of Nursing Midwifery Shaheed Beheshti University of Medical Sciences,16(58),pp11. (Persian)
- [22] Goulld JB,Davey BS,tafford R S., (1989),” Socio-economic differences in rates of cesarean section ”,The New England Journal of Medicine, 321(4),pp 223-290.
- [23] Ryding EL,( 1993),” Investigation of 33 women who demanded a cesarean for personal reasons”, Acta Obstetrica et Gynecologica Scandinavica, 72(4),pp 280-285.
- [24] Alehagen S, Wijma K, and Wijma B.,(2001),” Fear during labor”, Acta Obstet Gynecol Scand,80(4),pp315-20.
- [25] Weaver JJ, Statham H, and Richards M.,(2007),”Are there “unnecessary” cesarean sections? Perceptions of women and obstetricians about cesarean section for nonclinical Indications”. Birth,34(1),pp32-41.
- [26] Shahavi F. Rostami F, Khosravi F, Rnayi F, Hashemi nasab L., (2014),”Women Lived Experience of Choice of Cesarean Delivery: A Phenomenology Stud “, The Iranian Obstetrics,Gynecology and Infertility,17,pp1-10. (Persian)
- [27] Seyed Nouri T, Jamshidi Avanaki F.,(2006),”Survey the relationship between knowledge and attitude of pregnant women requesting cesarean section referred to Rasht health centers and their choice reasons”, J Gilan Univ Med Sci,15(59):pp75-84. (Persian)
- [28] Vafaei R, Hosseini F, Ghobadi Dashdebi K, Momen bellah fard M J, Ghalandari M, Gharlipour Z, Tavassoli E,(2013), “Assessing the factors influencing delivery method selection in pregnant women referred to Public hospitals in Shiraz”,Journal of Shahid Beheshti University of Medical Sciences,23,pp 13-18. (Persian)
- [29] Rice PL,and Nakzook C, (1998),”Cesarean or vaginal birth: perception sand experience of Thai women in Australian hospital”, Australian and New zeland Journal of Public Health,22(5),pp 604-680
- [30] Fardi A, Jafari Z.,(2003),”women toward vaginal delivery and cesarean”, Medical Journal of Tabriz University of Medical Science, 59,pp66- 69. (Persian)
- [31] Mohammadbeigi A, Tabatabayi H, Mohammadsalehi N.,(2008),” Determination of effective factors on cesarean in shiraz”, Journal of Faculty of Nursing & Midwifery Iran University Medical Science, 21(56),pp37-45. (Persian)
- [32] Arjmandi B, Farzinmoqadam S.,(2007), “Study of knowledge pregnant women toward vaginal delivery and cesarean in Tehran”, Iran University of Medical Sciences Journal,14(55),pp1. (Persian)
- [33] Sercekus P, and Okumus H.,(2009),”Fears associated with childbirth among nuliparous women in Turkey”, Midwifery,25(2),pp155-62
- [34] Nichols F,and Humenick S.,(200),”Childbirth education. 2nd ed. Philadelphia”, Saunders Co,pp 67-68
- [35] Anderson ET.,(1996),” Health and disease prevention.”, Out look,165,pp 105-12.