

Predictors of Fear Related to Childbirth among Iranian Primigravidae

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Abstract

Fears related Pregnancy-and childbirth are common psychological concerns and the main reasons for requesting cesarean section (CS). The current study aimed at describing the association between fear of childbirth and social, demographic and psychological factors and examines the predictors of maternal fear in a 342 healthy primigravidae women with uncomplicated singleton pregnancies. In this cross-sectional study, the participants (n=342 primigravidae) was randomly selected in 12 health care centers in Iran. The data was obtained by valid and reliable self-administered questionnaires that included questions on socio-demographic, psychological characteristics (self esteem, perceived stress, quality of marital relationship, perceived social support), fear related to childbirth and analyzed by SPSS19. All primigravidae reported some degree of fear, i.e., 48.2% presented severe fear, and 62.6% requested a CS because of childbirth-related fear. Age, employment, level of education and medical insurance were associated with fear related to childbirth, as well as plan of pregnancy, self esteem and perceived stress. In combination, HBM subscales and the psychosocial factors accounted for a significant 68% of the variability in fear related to childbirth, $R^2=0.68$, adjusted $R^2=0.67$, $F(12, 326)=69.4$, $p<0.001$. Fears related to pregnancy and childbirth was frequently experienced by all low-risk primigravidae. Better strategies to address women's psychological needs during pregnancy are necessary.

Keywords: fear related to childbirth, psychosocial characteristics, Iranian primigravidae

1. Introduction

The rate of CS has almost doubled in the last decade in both developed and developing countries (WHO, 2012); and it is much higher than 'the acceptable rate' of 10-15% recommended by the World Health Organization (Feng, Xu, Guo, & Ronsmans, 2012). In Iran, the CS rates are approximately 30-40% and 50-60% in public (teaching) and private hospitals, respectively (Pour Reza, 2007). In the Hamadan Province, in the west of Iran, the CS rates in public and private hospitals are 47.5% and 79.1%, respectively (Hamadan University of Medical Sciences Statistics, 2013).

The increasing frequency of CS is mainly caused by Cesarean delivery on maternal request (Gamble, Creedy, Mccourt, Weaver, & Beake, 2007; Ryding et al., 2014; Zwelling, 2008), the most common reasons of choosing CS include having had a previous CS, a previous negative birth experience, complicated pregnancy, and/or fear of giving birth. Very often, fear of childbirth leads to request for elective CS, regardless of the risks of this procedure. These women also have the belief that CS is the safest childbirth mode for the baby (Faisal, Matinnia, Hejar, & Khodakarami, 2013; McCourt et al., 2007; Pakenham, Chamberlain, & Smith, 2006; Waldenström, Hildingsson, & Ryding, 2006).

Fears related to pregnancy and childbirth are common psychological realities women experience during pregnancy, and the prevalence of such fears has increased over the past years (Rouhe et al., 2013). More than 80% of low-risk pregnant women experience varying levels of fear related to childbirth (Fenwick, Gamble, Nathan, Bayes, & Hauck, 2009; Matinnia et al., 2014). Pregnant women with a higher level of this fear experience increased risk of emergency caesarean section (CS), requests elective CS more frequently (Haines, Rubertsson, Pallant, & Hildingsson, 2012; Ryding et al., 2014) and higher levels of puerperal depression (Tsui & Pang, 2006). They also suffer greater pain and distress during labour (Matinnia et al., 2014).

Some women seem to be at a greater risk of feeling fear related to childbirth than others. Socio-demographic characteristics such as woman's age (Nieminen et al., 2009) low educational level (Laursen, Hedegaard, & Johansen, 2008a), lack of a social network (Haines, Pallant, Karlström, & Hildingsson, 2011) and unemployment have been reported to be associated with fear related to childbirth (Laursen et al., 2008a). Additionally, another study demonstrated that urban inhabitants were at increased risk for fear compared to those living in rural areas (Feng, Xing Lin., Xu, Ling, Guo, Yan, & Ronsmans, 2012).

Several studies have revealed that first time mothers are more likely to experience severe fear of birth (Johnson & Slade, 2002; Rouhe, Salmela-Aro, Halmesmäki, & Saisto, 2009). Melender (2002) reported that pregnant women experience a variety of fears about the baby's well-being, which manifest as symptoms of stress. Lack of social support, low self esteem, high level of daily stressors and dissatisfaction of marital relationship are predisposing factors of fear related to pregnancy (Saisto & Halmesmäki, 2003). Social and psychosocial aspects of the woman's life, self esteem, social support and quality of marital relationship, as well as a negative experience of labour and delivery are associated with the fear related to childbirth. Previous psychological morbidity such as stress and low self esteem and lack of social support expose a woman to a great risk of fear related to childbirth (Rouhe, Salmela-Aro, Gissler, Halmesmäki, & Saisto, 2011). Considering the epidemiology, risk factors, personalities and social characteristics that are more common in women who suffer from fear of childbirth is important for clinicians to properly screen and recognize their pregnant patients suffering from fear of childbirth. There have been several studies performed in Scandinavian countries and a few in developing countries such as Iran that have analyzed the traits and characteristics of women who suffer from fear of childbirth.

2. Methods and Materials

2.1 Study Population, Design and Data Collection

A cross-sectional study was carried out among primigravidae who referred to public health care centers for routine prenatal care from September to April 2014. A stratified random sampling was used. Out of four municipal areas, three municipal areas were selected randomly. Four health care centers were thereafter randomly selected in each area. The participants were selected by systematic random sampling.

The current research included exclusively healthy first time mothers. Residency in an urban area and having completed primary school were other inclusion criteria. Participants with a history or having any medical, psychiatric, obstetric problems, approving congenital anomaly in fetus and history of inherited disease in their family or their husband's family were excluded. The 342 primigravidae were chosen randomly with considering the inclusion and exclusion criteria. The study was approved by the Ethics Committee of the Hamadan University of Medical Sciences (UMSHA). A brief description of the study and consent form was provided to the primigravidae in the covering letter.

2.2 Measures

Self administered questionnaire was used in this study for data collection. The questionnaire consists of four parts: the first part of questionnaire designed to obtain the information about the participants' socio-demographic characteristics.

The second part of the questionnaire was designed to obtain information on psychosocial characteristics consisted of Self-Esteem (Rosenberg Self-Esteem Scale), Stress (Perceived Stress Scale), quality of marital relationship (Revised Dyadic Adjustment Scale) and perceived social support (Multidimensional Scale of Perceived Social Support).

A. Self-Esteem (Rosenberg Self-Esteem Scale): The RSES is a 10-item Likert type scale with items answered on a four point scale (0-3) from strongly agree to strongly disagree to measure self-esteem (range 0-40). Ratings are summed to achieve a total score which ranges from 0-30. Scores between 15 and 25 are within normal range; scores below 15 suggest low self-esteem. The higher the score on the instrument, the higher the level of self-esteem. Several studies demonstrate the effectiveness of the tool. Throughout pregnancy, the woman

processes her feelings regarding acceptance of the pregnancy, her identification with her motherhood role, her fears associated with labour and delivery, and concerns over the well-being of herself and her unborn child (Lederman & Weis, 2009).

B. The Stress Perceived Stress Scale (PSS): The questions in the PSS ask about feelings and thoughts during the last month. In each case, participants are asked how often they felt a certain way. The total is sum of all 10 items, range for total is 0-40 and all items are scored from 0 to 4. The Mean \pm SD of PSS for normal is female 13.7 \pm 6.6. Glynn, Schetter, Hobel, & Sandman (2008) used a modified 12-item version of the PSS-10 measured once during the second trimester and once during the third trimester to determine if changes in perceived stress were associated with preterm delivery, and at what point the risk was higher.

C. Quality of marital relationship the RDAS (Revised Dyadic Adjustment Scale) by Busby et al., (1995), was administered to assess marital satisfaction. It is a self-report measure of relationship adjustment which is described to be an enhanced version of the Dyadic Adjustment Scale by Spanier 1976. This measure consists of 14 items on a 6-point Likert scale (0-5). The RDAS consists of three adjustment subscales: Dyadic Consensus, the Dyadic Satisfaction, and the Dyadic Cohesion. Range for total is 0-69 and the cutoff score to discriminate between distress and non-distress is Consensus: 22, Satisfaction: 14, Cohesion: 11 and Total: 48. The study investigated the antenatal depressive symptoms among 2178 Hong Kong Chinese women during their second trimester of pregnancy. Logistic regression analysis revealed that high marital conflict and high mother-in-law conflict were found to be associated with more severe depressive symptoms (Lau & Keung, 2007).

D. Perceived social support (Multidimensional Scale of Perceived Social Support): There are twelve questions to assess perceptions about support from family, friends, and a significant other. It is a self-administered and each item is scored 1-7. The total is sum of all 12 items, possible range for total is 7-84 and all items are scored from "Very Strongly Disagree=1 To Very Strongly Agree=7".

A study in Pakistan was carried out on 325 women in pre-and postnatal period to assess psychiatric distress, social support and depression. The psychiatric distress and depression had a negative relationship with perceived social support(Akhtar et al., 2010).

The third part is (Fear related to childbirth):

Fear was assessed by means of the revised version of the Fear-of-Childbirth Questionnaire (Cronbach's alpha 0.72). This questionnaire was revised from the 10-item questionnaire of Saisto 2001. The questionnaire was developed based on an extensive review of the literature and results of the qualitative study in Iranian primigravidae to identify as many factors as possible in the reasons of request CS and fear related pregnancy and childbirth (Faisal et al., 2013; Matinnia et al., 2014)

The 30-item questionnaire is consisted of common fears during pregnancy, such as general fear about pregnancy, concerns about the health and life of the baby, fear of process of childbirth (pain, obstetric injuries, dying during childbirth, a losing control, incapacity to give birth and lack of trust in the health care staff assisting in childbirth) becoming a parent, child's care and rearing, or changes in marital and family relationships caused by the childbirth (Fisher, Hauck, & Fenwick, 2006). To enhance scale variability and accuracy rather than relying on dichotomous answers (Yes and No), the Likert Scale was selected in the section of fear in pregnancy. This scale is an ordered, one-dimensional scale from which participants choose one option that best aligns with their view. The minimum score on the 30 items version is 0, and the maximum is 150. The higher the score, the greater the fear of childbirth. The cutoff point of this questionnaire was based on the similar questionnaire used in Sweden. The level of fear related to childbirth in this study was considered; mild and moderate were first quartile and second respectively. Severe fear was determined more than 50% (third and fourth quartile) (Nieminen, Stephansson, & Ryding, 2009).

2.3 Statistical Analysis

Data was analyzed by using PASW Statistics 19.0 program. Descriptive statistical analysis was used to characterize the data. Multiple regression analysis was used to examine which variables significantly predicted fear related pregnancy and childbirth. In all tests, the level of significance was set at 0.05.

3. Results

3.1 General Characteristics of the Subjects

The mean age of respondents was 25 (range 18-34) years. Most (n=224, 65.5%) of respondents had planned pregnancies and (62.6%) requested CS without any medical justification in a normal pregnancy. The level of fear related to childbirth 28.7% (98) was low, 23.1% (79) moderate and 48.2% (165) was severe.

3.2 Factors Associated with Fear Related to Childbirth

The relationship between socio-demographic characteristics of the respondents and fear related to childbirth are shown in Table 1.

There was significant relationship between fear related to childbirth and age ($p<0.001$), level of education ($p=0.002$), occupation ($p=0.007$), family income ($p=0.28$), medical insurance ($p=0.03$) as well plan of pregnancy ($p=0.02$) and the request of CS ($p<0.001$).

The mean fear related to childbirth score was associated significantly self esteem (RSES) ($p=0.01$) and perceived stress (PSS) ($p<0.001$). However there were no significant relationships between quality of marital relationship (RDAS) and perceived social support (MSPSS) with fear related to childbirth (Table 2).

With regards to HBM score, the respondents with severe fear were seen to be have more susceptibility of CS ($t=-3.14$, $p=0.002$) and barrier of SVD ($t=-5.12$, $p<0.001$), although the respondents with mild to moderate fear have more motivation for SVD ($t=2.63$, $p=0.009$).

3.3 Predictors for Fear Related to Childbirth

To estimate the proportion of variance in fear related to childbirth that can be accounted for by HBM subscales and the psychosocial factors, a standard multiple regression analysis was performed.

With considering the assumptions of normality, linearity and homoscedasticity of residuals, Mahalanobis distance (did not exceed the critical χ^2 for $df=10$ (at $\alpha=0.001$) of 29.588) and multicollinearity, the outcome of the multiple regression analysis was interpreted.

In combination HBM subscales and the psychosocial factors accounted for a significant 68% of the variability in fear related to childbirth, $R^2=0.68$, adjusted $R^2=0.67$, $F(10, 326)=69.4$, $p<0.001$. Unstandardised (B) and standardized (β) regression coefficients, and squared semi-partial (or 'part') correlations (sr^2) for each predictor in the regression model are reported in Table 3.

Table 1. Relationship between the Socio-Demographic characteristics and fear related to childbirth

| Characteristics | Low and moderate Fear | Severe Fear | Test-statistics | P-value |
|-------------------------------------|-----------------------|-------------|-----------------|---------|
| Age (Mean±SD) | 25.88±3.62 | 24.02±2.87 | T=-5.25 | <0.001* |
| Education | | | | |
| Secondary School | 32(52.5) | 29(47.5) | | |
| High School Diploma | 68(54) | 58(46) | $\chi^2=14.97$ | 0.002* |
| College Diploma | 54(76.1) | 17(23.9) | | |
| Bachelor Degree or Higher | 60(71.4) | 24(28.6) | | |
| Occupation | | | | |
| Professional Employee | 56(75.7) | 18(24.3) | | |
| Non Professional Employee | 32(74.4) | 11(25.6) | $\chi^2=12.16$ | 0.007* |
| Self-employed | 13(56.5) | 10(43.5) | | |
| Housewife | 113(55.9) | 89(44.1) | | |
| Family Income (Rials/month)* | | | | |
| ≤4,000,000 | 63(76.8) | 19(23.2) | | |
| 4,000,000- 8,000,000 | 61(64.9) | 33(35.1) | $\chi^2=3.87$ | 0.28 |
| 8,000,000- 12,000,000 | 66(75) | 22(25) | | |
| ≥12,000,0000 | 54(69.2) | 24(30.8) | | |
| Medical Insurance | | | | |
| Yes | 185(65.1) | 99(34.9) | $\chi^2=4.72$ | 0.03* |
| No | 29(50) | 29(50) | | |
| Plan of pregnancy | | | | |
| Planned | 149(66.5) | 75 (33.5) | $\chi^2=7.42$ | 0.02* |
| Unplanned but welcome | 56(80) | 14(20) | | |

| | | | | |
|--------------------------------|-----------|-----------|-----------------|---------|
| Unplanned | 39(81.3) | 9(18.8) | | |
| Mode of delivery | | | | |
| Normal Vaginal Delivery | 114(64.4) | 14(8.5) | $\chi^2=114.03$ | <0.001* |
| Caesarean Section | 63(35.6) | 151(91.5) | | |

Table 2. Relationship between the psychosocial characteristics, belief and Fear related to childbirth at baseline

| Psychosocial Characteristics | Mild & Moderate Fear Mean±SD | Severe Fear Mean±SD | Test-statistics | p-value |
|------------------------------|------------------------------|---------------------|-----------------|---------|
| RSES | 26.1±1.77 | 25.98±1.79 | t=0.62 | 0.01 |
| PSS | 20.38±3.26 | 26.44±4.24 | t=-14.73 | *<0.001 |
| RDAS | 47.74±3.93 | 47.37±3.85 | t=0.88 | 0.38 |
| MSPSS | 53.84±9.56 | 53.74±9.29 | t=0.95 | 0.93 |
| Belief | | | | |
| Susceptibility | 15.34±2.62 | 16.23±2.62 | t=-3.14 | 0.002* |
| Seriousness | 25.43±3.97 | 25.22±3.72 | t=0.74 | 0.46 |
| Benefits | 28.09±3.75 | 27.35±3.46 | t=1.1 | 0.27 |
| Barrier | 25.98±4.68 | 28.67±3.7 | t=-5.12 | <0.001* |
| Self Efficacy | 21.34±3.42 | 20.27±3.59 | t=1.41 | 0.16 |
| Cue to Action | 35.9±3.21 | 35.17±4.12 | t=2.63 | 0.009* |
| Total Beliefs | 152.08±9.8 | 152.9±9.92 | t=-0.7 | 0.48 |

Note. *Significant at level p<0.0.

Table 3. Summary of multiple regression analysis for variables predicting fear related to childbirth (n=342)

| Variables | B | β | P-value | CI | sr ² |
|-----------------------|--------|---------|---------|--------------|-----------------|
| HBM Subscales | | | | | |
| Susceptibility | 0.392 | 0.077 | 0.03* | 0.039-0.745 | 0.005 |
| Seriousness | 0.146 | 0.042 | 0.3 | -0.132-0.423 | 0.001 |
| Benefits | -0.107 | -0.029 | 0.45 | -0.387-0.172 | 0.001 |
| Barrier | 0.418 | 0.138 | <0.001* | 0.189-0.647 | 0.013 |
| Self Efficacy | 0.117 | 0.031 | 0.46 | -0.193-0.427 | 0.001 |
| Cue to Action | -0.233 | -0.065 | 0.06 | -0.477-0.011 | 0.004 |
| RSES | -0.434 | -0.058 | 0.82 | -0.924-0.055 | 0.003 |
| PSS | 2.1 | 0.752 | <0.001* | 1.91-2.285 | 0.475 |
| RDAS | 0.164 | 0.047 | 0.15 | -0.058-0.386 | 0.002 |
| MSPSS | 0.01 | 0.007 | 0.83 | -0.085-0.106 | 0.0001 |

4. Discussion

In this study, the psychosocial predictors of fear related to childbirth in low-risk Iranian primigravidae were explored. The intensity of fear in Iranian primigravidae was 28.7% mild, 23.1% moderate and 48.2% severe in present study. This result is different from that of other studies in developed countries. Eriksson et al. (2006) conducted a study regarding fear related to childbirth in Sweden. They stated 23% have intense fear, 32% moderate and 25% mild. It is worth noting 20% of the women did not have any fear. The women were both primiparous and multiparous who had a healthy baby.

A comparative study of childbirth-related fear levels in pregnant women in Australia and Sweden was conducted by Rouhe et al. (2008). Based on their results, 31.1% of Swedish pregnant women and 29.5% of Australian pregnant women suffered from severe fear related to childbirth. The rate of severe fear in the present study is higher than what has been reported in developed countries which may be due to difference in culture, attitude, and perception of pregnant women, different instruments, time of measurement, quality of prenatal care, and

education (Haines et al., 2012; Haines et al., 2011; Saisto & Halmesmäki, 2003; Weaver et al., 2007). Despite availability of prenatal care for all women in Iran, childbirth education programs are lacking in the Iranian prenatal care system. Iranian women are not educated sufficiently about the reproductive system and natural childbirth in school or in the community (Fenwick et al., 2013; Torkzahrani, 2008).

In the present study, 62.6% of primigravidae request CS without medical indications. International estimates of CS by maternal choice varied from 4%-18% of all CS (NIH, 2006). Compared with other studies, the rates of maternal request for CS in our study is higher than USA (28.3%) (Meikle, Steiner, Zhang, & Lawrence, 2005), Norway (7.6%) (Kolås et al., 2003), Finland (8%) (Terhi, Saisto, & Halmesmäki, 2003) and Sweden (33%) (Karlström et al., 2010). The rate of maternal request was reported between 5% to 48% in a review article of Australia, Ireland, Sweden and UK (Gamble et al., 2007).

The association between maternal age, education, occupation, medical insurance, plan of pregnancy request of CS and fear related to childbirth were statistically significant ($p < .05$). The results of present study supported national research findings from Denmark and Sweden indicated that pregnant women with fear related to childbirth were younger and unemployed, had low levels of education, lower self-rated health, and lower social support than those with mild fear or no fear (Laursen et al., 2008; Waldenström et al., 2006).

Similarly, a recent study by Haines et al. (2012), which evaluated the effect of women's attitudes, beliefs and fear of childbirth on mode of delivery, and experience of delivery, showed there was significant association between fear and level of education but not with age. In contrast, Nilsson et al. (2011) showed the socio-demographic characteristics of pregnant women were not associated with fear related to childbirth.

The results were also consistent with those of Nieminen et al. (2009), in which the mean scores of fear related to childbirth were not significantly associated with socio-demographic characteristics in pregnant women, although severe fear was significantly related to age ($p = .02$).

These controversies may be due to parity, different areas of residence, psychosocial characteristics, different cultures, and social norms among other factors. The birth experience is complex and incorporates subjective psychosocial and physiological processes which are influenced by social, environmental, organizational and policy contexts (Nilsson, Lundgren, Karlström, & Hildingsson, 2012).

Several studies reported fear of childbirth significantly associated with request CS (Rouhe et al., 2009; Wiklund, Edman, Ryding, & Andolf, 2008). In turn, this may be a cause of the high rate of CS in Iran (Matinnia et al., 2014; Evanaki, Khakbazan, Babaei, & Noori, 2004).

The results of the current study indicate that the psychosocial characteristics, including self-esteem and perceived stress were significantly associated with fear related to childbirth. These results are in line with those of several studies in which low self-esteem, high stress and anxiety were reported to be associated with fear of childbirth, indicating that fear of childbirth is not a separated problem but related with a woman's psychosocial characteristics. This may lead to a complex of effects in that pregnant women with fear related to childbirth are less likely to have a normal childbirth, often requesting a CS (Saisto & Halmesmäki, 2003; Waldenström et al., 2006).

In support of these results, a Finnish study illustrated that perceived stress, low self-esteem, dissatisfaction with the partnership and lack of social support are psychosocial characteristics of primiparous and multiparous women with fear related to childbirth (Saisto et al., 2001).

Likewise, in a study on nulliparous women in their 3rd trimester, strong fear of childbirth was associated with low self-efficacy and low self-esteem (Laursen et al., 2008b). The previous psychosocial morbidity (mostly anxiety, depression, and low self-esteem) in conjunction with low social support and low quality of marital relationship expose a pregnant woman to a higher risk of fear related to childbirth (Fisher et al., 2006; Nilsson et al., 2012; Rouhe et al., 2011).

In contrast with the results of other studies, the perceived social support in the present study was not related to fear which may be due to the different instruments used in the surveys and/or diverse social backgrounds of women in developing and developed countries.

Fear related to childbirth and request for CS was positively associated in our study which supports many other studies that most of which were conducted in Scandinavian countries. In a study in Sweden, the relative risk of fear related to childbirth was 3 for request CS (Nilsson et al., 2012). Pregnant women with fear related to childbirth were that 3.3 times more likely to choose CS (Haines et al., 2011) that it increased in severe fear to 11.79 times (Nieminen et al., 2009).

In the present study, we found significant correlation between some subscales of HBM and fear related to childbirth. In our study, perceived susceptibility and perceived barriers had significant relationship with behavior; that also was confirmed by Ghaffari and Afshari (2013). In this study significant relationship between cues to action and fear related to childbirth was shown. This result is consistent with Khorsandi et al. (2012).

Findings of current study showed that primigravidae who had higher perceived susceptibility and barrier to CS were more likely to have severe fear. In the studies regarding HBM were shown those with higher self-efficacy had higher intentions for natural delivery that they had mild fear related to childbirth (Fenwick, Gamble, & Hauck, 2007; Khorsandi, Ghofranipour, Hidarnia, Faghizadeh, & Ghobadzadeh, 2012). Women's self-efficacy could be increased through learning experiences focused on their control and ability perceptions to choose SVD (Salomonsson, Gullberg, Alehagen, & Wijma, 2013).

Therefore, these results can help in designing prenatal educational interventions to reduce CS. As self-efficacy is effective in prediction of request CS, therefore social skills training and improving women's abilities for natural childbirth should be considered in prenatal education.

5. Conclusion

The findings of this study indicate that the prevalence of fear related to childbirth in Iranians' primigravidae is higher than other studies. Young age, employment, and high education level were associated with fear of childbirth, as well as self esteem, unplanned pregnancy and having high perceived stress. HBM subscales and the psychosocial factors accounted for a considerable variability in fear related to childbirth.

The high percentage of severe fear in first pregnancy may be caused by inadequate prenatal education and low knowledge of Iranian primigravidae at childbirth. Advance and evaluation of prenatal education should be significance for health care in Iran. Health care providers and policy makers should greatly emphasize on prenatal education and emotional support of pregnant women during labour and delivery.

Fears related to pregnancy and childbirth are a complex realities complicated by many factors. It is important to consider wide-ranging research questions, such as the cultural, social and politico-economic situation of maternity care, the type and quality of education, and the behaviour of health care personnel. Further studies are recommended to explore the cause and manifestations of fear related to childbirth, the perceptions of midwives and obstetricians about fear, and develop effective modules of prenatal education to lessen fear and rates of elective Caesarean delivery. Better understanding of these factors might assistance to progress prenatal and labour care programs and plan intervention strategies to decrease rate of maternal request Caesarean delivery.

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Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

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