

**Factors contributing to fear of childbirth among pregnant women in Hamadan (Iran) in 2016**Farzaneh Soltani<sup>1</sup>, Zahra Eskandari<sup>2</sup>, Batoul Khodakarami<sup>2</sup>, Parisa Parsa<sup>3</sup>, Ghodrattollah Roshanaei<sup>4</sup>

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**Type of article:** Original**Abstract**

**Background:** Fear of childbirth is a considerable mental, social, and physiological phenomenon among women as well as their families, which can be effective in choosing cesarean section for delivery.

**Aim:** To determine some factors contributing to the fear of childbirth among pregnant women.

**Method:** This cross-sectional study was conducted on 335 pregnant women referred to health centers in Toyserkan in 2016. Pregnant women with the gestational age of 16-40 weeks filled out Harman's Childbirth Attitude Questionnaire (CAQ) as well as stating demographic and obstetrics characteristics. Data were analyzed by Software SPSS/19 through chi-square, ANOVA, and Pearson's correlation tests.

**Results:** The mean age and mean gestational age of the pregnant women were 26.5±4.9 years old and 26.52 weeks, respectively; 89.3% of the women reported fear of childbirth. There was a significant difference among the mean scores of the women's fear of childbirth and education level, household income adequacy, gravidity, being familiar with the delivery process, and pre-pregnancy cares ( $p < 0.05$ ).

**Conclusion:** The present study found the relationship between women's fear of childbirth and their education level, household income, gravidity, familiarity with delivery process, and pre-pregnancy cares. It is necessary for health caregivers to take into consideration the vulnerable groups, especially nulliparous women during pre-pregnancy care as well as the social, and cultural status of women in order to identify the pregnant women exposed to fear of childbirth and reduce the chance of choosing cesarean section by providing appropriate services.

**Keywords:** Childbirth fear, Pregnancy, Related factors

**1. Introduction**

Childbirth is a multidimensional process with physical, emotional, social, physiological, cultural, and mental dimensions, which is considered a critical experience in every woman's life. Sometimes, fear of childbirth is so high that it prevents women from getting pregnant and even disturbs their daily activities (1). Despite higher complications of cesarean section compared with vaginal delivery, such as post-surgery infections, injury to organs, bleeding, embolism reaction to medication or anesthesia, scar tissue, and difficulty with future deliveries, the worldwide caesarean rate has continuously increased over recent decades in developed and developing countries (2). The rate of caesarean section in Iran in 2010 and 2013 was 41.9% and 48%, respectively (3). However, the rate of C/S recommended by the World Health Organization for Iran this year has been 15% (4). One of the reasons for choosing cesarean delivery is fear of childbirth (5, 6). Fear of childbirth is a considerable mental, social, and

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physiological phenomenon among women as well as their families, which can be an effective factor in choosing the cesarean section method for delivery. Studies have shown that fear of childbirth leads to a woman's demand for elective cesarean section (7, 8) and, consequently, increased rate of choosing cesarean section. Besides, especially in women with no delivery experience, fear of childbirth has been the main reason for demanding for cesarean section. Fear of childbirth during pregnancy is considered one of the predictor factors of emergency cesarean section. Probably, fear and anxiety result in the release of catechol amines and, consequently, ineffective and long-term labor pains as well as dysfunction of uterine muscles. Although the experience of delivery is supposed to be normally associated with minimum risk in developed countries, increasing medical interventions have increased fear of childbirth via increasing such risks (9, 10). Various reports around the world have estimated fear of childbirth at about 20% with 6%–10% incidence of intense fear of labor and delivery, which leads to disorders in the daily life. However, factors such as cultural ones, data collection time during pregnancy, and parity are considered as the factors affecting fear of childbirth estimation.

In Finland, Sweden, and the United Kingdom, mothers' fear of childbirth and demand for cesarean section account for 7%–22% of cesarean section (11); furthermore, the prevalence of fear of childbirth among Australian, Canadian, and Swedish women has been reported to be 24%–26% (12–14). In the study conducted on 400 pregnant women in the third trimester of pregnancy, Fenwick et al. found that about 50%, 25%, and 25% suffered from moderate, intense, and mild fear of childbirth, respectively (12). Demographic and obstetric factors might play fundamental roles in women's fear of childbirth (13). Studies on the demographic factors involved in fear of childbirth have reported different results in terms of age (14–16), education (17), and occupational status (18–20). Financial concerns might be related to fear of childbirth as well. There are contradictory pieces of evidence on parity and fear of childbirth; for example, Zar et al. reported a slight increase in the multiparous women's fear of childbirth (21), while Nieminen found no difference in the number of parities (22). In a cohort study on 7000 Swedish pregnant women, Ryding et al. found that the multiparous women were at significant risk for cesarean section due to fear of childbirth (23). Furthermore, women with previous experience of cesarean section or instrumental labor reported more fear in their next delivery (24). Two studies on Swedish women indicated that employed women underwent the treatment due to fear of childbirth more than other women (25–26); further, women with a history of medicalized delivery believed in the harmfulness of delivery more than others, and it was shown that these women were exposed to more risk of postpartum depression (27–28). In Toohill et al.'s study on 1410 Australian women, the nulliparous women reported fear of childbirth 10 times more than the multiparous women because of their uncertainty about the fetus's health as well as confronting a major transition in their life in various physical, psychological, and social aspects in becoming a mother (11). With regards to existing controversies, it is necessary to identify the factors related to fear of childbirth in every community to apply appropriate interventions for reducing fear and rate of elective cesarean section, and it can be also an effective step toward reducing maternal morbidity and mortality caused by cesarean section. Hence, the present study is aimed to determine some factors that contribute to the fear of childbirth among pregnant women in Toyserkan, Hamadan, Iran.

## **2. Material and Methods**

The present cross-sectional descriptive study was conducted on pregnant women with the gestational age of 16–40 weeks referring to the health care centers in Toyserkan, Hamadan, Iran, 2016. This study was approved by the ethics committee of the Hamadan University of Medical Sciences (IR.UMSHA.REC.1394.303). Written consent was obtained from the participants, and they were assured of the confidentiality of their information. Considering the prevalence rate of fear of childbirth based on the previous studies (50%),  $\alpha=0.05$ , and accuracy of 6.5%, the 335-subject sample size was determined. The subjects were selected through simple random sampling. The inclusion criteria included low-risk pregnancy, wanted pregnancy, lack of medical or obstetrical problems based on medical records, singleton pregnancy, and literacy (ability to read and write). After obtaining the written consent, the questionnaires of Fear of Childbirth (FAQ) and demographic information were completed by the participants. The validity of FAQ was examined by Khorsandi et al. (2008) and the reliability of which was calculated equal to 0.84% using Cronbach's alpha in the present study. In this 14 item questionnaire, the responses are considered in terms of Likert scale: "No fear," "Very low fear," "Moderate fear," and "High fear," and each question is scored from 1 (at all) to 4 (high). Accordingly, the scores of the domains range from 14 to 56 so that higher scores indicate higher fear. Furthermore, the score of 28 is considered as the cutoff point. The demographic and obstetric characteristics questionnaire included women's age, education level, women's occupation, husband's occupation, housing status, gestational age, household income, type of delivery in relatives, familiarity with delivery process, and pre-pregnancy care. The obtained data were analyzed using SPSS/19 (SPSS Inc., Chicago, Illinois, USA) through chi-square test,

ANOVA, and Pearson's correlation test; where appropriate, the Tukey test was used for post-hoc tests of significant differences between means as indicated.  $p < 0.05$  was considered significant.

### 3. Results

The mean age and gestational age of the pregnant women were  $26.5 \pm 4.9$  years old and 26.52 weeks, respectively. Table 1 shows other demographic and obstetric characteristics of the subjects. The majority of the studied pregnant women (89.3%) reported fear of childbirth, and the mean score of fear of childbirth was  $38.33 \pm 8.3$  (with the minimum score of 14 and maximum score of 55), respectively.

**Table 1.** Demographics and obstetrics characteristics of participants

Demographics characteristics		n	%
Education	Under diploma	104	31.0
	Diploma	128	38.2
	University	103	30.7
Occupation	Householder	300	89.6
	Employed	35	10.4
Husband's occupation	Staffer	52	15.5
	Worker	263	78.5
	Shopkeeper	20	6.0
Housing status	Private	165	49.3
	Rental	170	50.7
Household income	poor	55	16.4
	Average	178	53.1
	Good	92	27.5
	Very good	10	3.00
Gravidity	1	250	74.6
	2	57	17.0
	$\geq 3$	28	8.4
Familiarity with delivery process	Yes	132	39.4
	No	203	60.9
Type of delivery in relatives	Normal vaginal delivery	256	76.4
	Cesarean section	79	23.6

Table 2 shows the pregnant women's mean score of fear of childbirth in terms of the demographic and obstetric characteristics. Among the demographic characteristics, the maximum mean scores of fear of childbirth belonged to pregnant women with weak household income ( $40.50 \pm 7.9$ ). Besides, the women with the education level of under high school diploma obtained the minimum mean scores of fear of childbirth ( $36.45 \pm 8.8$ ). In terms of obstetric characteristics, the women with no information on the delivery process and also the women without pre-pregnancy care obtained the maximum mean scores of fear of childbirth ( $39.85 \pm 7.4$  and  $39.17 \pm 8.51$ , respectively). In contrast, the women with more than three pregnancy had the minimum mean scores of fear of childbirth ( $30.50 \pm 9.2$ ). The relationship between variables and fear of childbirth was assessed using Pearson's correlation test. The results revealed a significant, negative, reverse relationship between the mean scores of fear of childbirth and women's education level ( $p = 0.008$ ), household income, ( $p = 0.047$ ) gravidity ( $p = 0.03$ ), familiarity with delivery process ( $p = 0.001$ ), and pre-pregnancy care ( $p = 0.02$ ). However, the linear relationships among fear of childbirth and age ( $p = 0.08$ ), education level ( $p = 0.14$ ), and gestational age ( $p = 0.65$ ) were not statistically significant. For pair comparisons within groups, the Tukey's test was applied. Turkey's test showed a significant relationship between fear of childbirth and all groups of mentioned variables; however, no statistically significant differences were found with respect to the other variables (Table 3).

**Table 2.** Mean score of fear of childbirth according to demographics and obstetrics characteristics of Participants

Characteristics		Fear of Childbirth (Mean ± SD)	p-value
Education	Under diploma	38.54±8.8	0.008
	Diploma	39.85±7.7	
	University	38.33±8.17	
Occupation	Householder	38.71±8.46	0.319
	Employed	39.65±6.71	
Husband's occupation	Staffer	38.05±9.82	0.866
	Worker	38.45±8.08	
	Shopkeeper	37.80±8.91	
Housing status	Private	37.53±8.6	0.083
	Rental	39.10±7.8	
Household income	poor	40.50±7.9	0.047
	Average	38.56±8.3	
	Good	36.60±8.3	
	Very good	38.00±7.4	
Gravidity	1	38.74±7.8	0.03
	2	38.59±8.7	
	3≥	30.05±9.2	
Familiarity with delivery process	Yes	36.58±8.8	0.001
	No	39.58±7.4	
Prepregnancy Care	Yes	37.03±8.72	0.02
	No	39.58±7.4	
Type of delivery in relatives	Normal vaginal delivery	38.48±8.46	0.534
	Cesarean section	37.82±7.76	

**Table 3.** Correlation between obstetrics and demographic characteristics of women with fear of childbirth

Variables	Fear of childbirth	
	Pearson correlation	p-value
Gestational age	0.025	0.65
Age	-.095	0.08
Occupation	0.046	0.45
Husband's Occupation	-.023	0.67
Familiarity with delivery process	0.260	0.00
Prepregnancy Care	-0.245	0.00
Type of delivery in relatives	0.042	0.44
Education	0.082	0.14
Housing status	-.082	0.13
Household income	-.0158	0.00

#### 4. Discussion

The main importance of fear of childbirth is that this phenomenon can increase rate of elective and emergency cesarean section, both directly through demanding for cesarean section and indirectly through physiological and psychological mechanisms. Therefore, identifying the relevant factors and trying to eliminate or reduce their impacts can have major contributions to reducing cesarean section rate and, as a result, maternal morbidity and mortality rates. In the present study, the majority of the pregnant women (89.3%) suffered from fear of childbirth, indicating a significant increase compared to other statistics published by other studies in Iran.

Previous studies conducted in Iran have reported the prevalence of fear of childbirth as 55.8% (8), 59% (29) and 48.2% (30). In addition to the diversity of the studied pregnant women, the use of different fear of childbirth assessment questionnaires can be one of the reasons for higher levels of fear of childbirth in the present work. Most of the studies have indicated higher fear among nulliparous women than the multiparous ones; the opposite results have been reported as well (20, 22-24, 30). In the present study, fear of childbirth among the nulliparous women was

higher than that among the multiparous women. Besides, among the multiparous women, the increased parity was inversely related to fear of childbirth so that the women with four or more pregnancies had minimum fear. It is reasonable that the women with a history of at least one delivery have less worry than the nulliparous ones because they have more experience and information about the whole process. In a recent study conducted by Matinnia et al. on 342 nulliparous women, all of the nulliparous women reported some degrees of fear so that 48.2% reported intense fear of childbirth and 62.6% mentioned their fear of childbirth as the reason for their demand for cesarean section (31). Toohill et al. reported fear of childbirth among the Australian nulliparous women as 10 times more than that among the multiparous women and believed that the multiparous women reported their fear of childbirth mostly due to a traumatized or negative delivery experience. On this basis, it seems that nulliparous women are commonly afraid of the unknown, pain, and loss of control, while multiparous women are afraid due to their previous experiences (11). Among other obstetric factors related to fear of childbirth in the present study were unfamiliarity with delivery stages and lack of pre-pregnancy care. In another study, Najafi showed the effect of delivery preparation classes on the reduction of fear of childbirth in pregnant women in Gilan Province (32). Khorsandi et al. found that the relaxation exercises, which were a part of the delivery preparation classes, reduced fear of childbirth (33). It seems that one of the most important points in reducing cesarean section demand rate is to create a positive attitude toward natural delivery during prenatal trainings.

As shown in some studies, the main reason for fear of childbirth is lack of a positive attitude toward natural delivery. Furthermore, it has been shown that the women who do not tend to vaginal delivery are more likely to prefer elective cesarean section, and even their attitude might affect the practitioners' medical decision on selecting type of delivery during the labor. On the other hand, the women faced with vaginal delivery have the ability to endure more risks and problems. Haines et al.'s cohort study showed that the attitude stating that "birth is a natural phenomenon" is associated with fewer elective cesarean section (34). In contrast with the public supposition that increase in gestational age and approaching the time of delivery are associated with increased fear of childbirth, the present study indicated no relationship between gestational age and fear of childbirth. Although fear of childbirth is not a fixed structure, and there is no confirmatory evidence on its increase with the progress of pregnancy, it is assumed that because anxiety is increased in the third trimester of pregnancy, fear of childbirth is increased in the same period as well (15, 18). In the present study, two demographic features, namely, education level and household income, were related to fear of childbirth. Some studies have emphasized education level, occupational status, employment status, or living place as the health indices (15-16, 20), but only few works have explicitly questioned household income. Furthermore, in Toohill et al.'s study on 1410 Australian pregnant women, the women's income was the only demographic characteristic related to fear of childbirth (11). Besides, Najafi's investigation represented a significant relationship between household income level and fear of natural childbirth so that the subjects with higher income had less fear of natural childbirth (32).

Accordingly, it can be considered that women with lower economic level report higher levels of fear and worry because they cannot afford cesarean section and, thus, are forced to choose vaginal delivery. Researchers have reported different results on the relationship between pregnant women's education level and fear of childbirth (32, 34). Zafarghandi et al. showed that aging led to a reduction in anxiety and fear of childbirth (35), but Akhlaqi et al.'s work showed no significant relationship among age, education level, and household income, on the one hand, and fear of childbirth on the other (36). Furthermore, Salomonson et al. found a relationship between lower education level and fear of childbirth (16), while Størksen et al. observed a relationship between less social support and fear of childbirth (37). Generally, our consistent results with other studies made in Iran or other countries, as well as inconsistent results, could be due to some differences such as methodology and data collection methods, grouping of variables, gestational age of pregnant women and socio-cultural differences. The main limitation in the present study is its cross-sectional nature, which limits the possibility of establishing a causal relationship between variables. Conducting longitudinal or even experimental studies to investigate the relationship between obstetrics and demographic factors, and fear of childbirth among Iranian pregnant women is required.

## **5. Conclusions**

The present study emphasized the importance of pre-pregnancy and prenatal training and preparation as well as providing the necessary services for pregnant women, especially the nulliparous ones. Besides, health caregivers must take into consideration the vulnerable groups in terms of economic, social, and cultural levels in order to identify the pregnant women exposed to fear of childbirth and provide appropriate services to reduce the chance of elective cesarean section among them.

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#### **Conflict of Interest:**

There is no conflict of interest to be declared.

#### **Authors' contributions:**

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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