



Prevalence of Fear of Childbirth and Its Associated Factors in Primigravid Women: A Cross- Sectional Study

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Abstract

Background and Objectives: Fear of childbirth is a common concern among pregnant women, which is why many women request Cesarean section. Therefore, this study aimed at determining the prevalence of fear of childbirth and its associated factors in primigravid women in Khorramabad, Lorestan province, Iran.

Methods: This cross-sectional study was conducted on 400 primigravid women (gestational age: 18 - 32 weeks), who referred to the health centers and stations of Khorramabad in 2014 for routine prenatal care. The participants were selected through multi-stage cluster sampling method. Childbirth attitude questionnaire (CAQ), demographic characteristics and pregnancy characteristics questionnaires, and Northouse social support questionnaire were used to collect data. The data were analyzed using chi-square test, t test, Mann-Whitney test, and multivariate logistic regression.

Results: The mean score for the fear of childbirth was 37.86 (\pm 9.44), and the prevalence of fear of childbirth was 80.8% (CAQ \geq 28). According to the results of multivariate logistic regression analysis, lack of sufficient income for living expenses ($P = 0.020$), not participating in childbirth preparation classes ($P = 0.040$), and preference for mode of delivery (vaginal delivery) ($P < 0.001$) were predictive factors for the fear of childbirth.

Conclusions: According to the results of this study, most primigravid women had experienced the fear of childbirth. Therefore, it is required the health care providers pay special attention to the fear of childbirth during pregnancy and the factors associated with it.

Keywords: Prevalence, Fear of Childbirth, Primigravid, Cross- Sectional Study

1. Background

Pregnancy, childbirth, and transition to parenthood are normal physiological processes that are accompanied by important social and emotional conflicts for any woman and her family (1). Most healthy women in developed countries should be able to experience childbearing as a positive life event that has very few adverse consequences (2). Although most of women have good health in Western countries, the rate of childbirth interventions such as cesarean-section is high among them; for instance, the rate of cesarean delivery was 32.8% in the United States in 2012 (3). According to information obtained from Lorestan University of Medical Sciences, the rates of ce-

sarean delivery in social security, private, and public centers were 43%, 93%, and 39%, respectively, in Khorramabad and 44% in Lorestan province. In Iran, the rate of cesarean delivery is 3 times as high as the world average (4), and with a prevalence of 45.55%, it is considered among the countries at risk for cesarean delivery (5). Furthermore, studies show that only 15% of deliveries need a cesarean-section (6-8).

Many studies reported the most common reason for choosing cesarean delivery by women who have not experienced childbirth is the fear of childbirth. The prevalence of fear of childbirth has been reported as 5% to 30% in Sweden, Switzerland, and Australia (9-14). Approximately 6% to 10% of women experience an intense fear of labor and birth

that is debilitating and disrupts the labor process (9, 15, 16). According to a study conducted on primiparous women in Tehran, 74.3% of women selected cesarean-section due to fear of labor pain (17).

Fear of childbirth in nulliparous women is more intense than in multiparous women (11, 18, 19). According to previous studies, if a pregnant woman experiences a higher fear of childbirth in the third trimester of pregnancy for whatever reason, the risk of cesarean-section increases, even if she is physically healthy. In women with tokophobia, the demand for abortion or a cesarean-section is the only way to avoid fear (20, 21).

According to various studies, personal and external conditions (environmental and contextual) play an important role in causing the fear of childbirth. Personal conditions reflect women's concerns about maintaining a sense of personal control. In a study, of the 100 women who suffered an intense fear of childbirth, over 65% were worried about their performance in labor and their bodies' abilities to give birth (22). These concerns were attributed to having little hope for overcoming the labor and achieving positive outcomes (23, 24). External conditions refer to the environment and context, where women give birth, and their interactions with health care professionals. For example, a study reported the lack of trust in the obstetric staff as the most common cause of fear of childbirth (9).

Fear of childbirth in multiparous women can be related to the previous experience of traumatic or negative delivery (12, 25-27). Although delivery is considered to be a natural phenomenon, women's labor experiences are not only dependent on interventions and medical complications during labor, but also are related to their traumatic and negative experiences (28, 29). Studies have shown that when women have pain during labor, it is highly important for them how the personnel deal with them (29-31).

Some women appear to be at greater risk for the experience of fear of childbirth compared to others. Sociodemographic characteristics such as low educational level, lack of social support, marital dissatisfaction, being young, unemployment, and having heard bad stories about pregnancy and childbirth are associated with fear of childbirth (14, 18, 32-34). Other risk factors include the history of negative experience of delivery, operative delivery, emergency Cesarean section, violence, and sexual abuse (11, 12, 35, 36).

Women with anxiety disorders and depression are at greater risk for experiencing fear of childbirth (14, 18, 34). Moderate to severe level of fear of childbirth is associated with some anxiety disorders such as panic and post-traumatic stress disorder (37). Some characteristics such as fear of pain and low level of pain tolerance are also known as the causes of fears of childbirth (13, 32, 38). Some other reasons include fear of mother's death, fear of losing con-

trol, or fear of expressing stupid behaviors during labor (32).

Other psychological and social factors affecting the fear of childbirth include fear of the unknown, desire for pain relief, physical and mental relaxation, mother's personality traits, genetic background that makes a person vulnerable to stress, unpleasant experience and receiving encouragement from others, concern about adverse complications for mother, inappropriate behavior of the medical staff, fear of dying and being alone, concern about the health of the baby, lack of adequate social support, being young, unemployment, and low education and income. The fear of labor pain is also a predictive factor of pain during labor that may increase the risk of emergency cesarean-section and the rate of elective cesarean-section (9, 15, 27, 34, 39, 40).

The results of studies on the causes of fear of childbirth show that many women are afraid of childbirth because they have no control over the actions which they are supposed to do. This causes the physiological process of labor to be transformed into a medical problem (32).

Known physical and emotional consequences associated with fear of childbirth include voluntary infertility, pregnancy complications, increased use of analgesics during labor, increased labor interventions, increased duration of labor (41), increased elective and emergency cesarean-sections, postpartum depression, post-traumatic stress disorder (PTSD), and impaired mother-infant bonding. The role of a woman as a mother and her relationship with her infant, other children, and the husband are influenced by these consequences (9, 16, 29, 42, 43).

It seems that the current situation should be investigated to design and implement appropriate intervention programs and provide strategies to promote women's health. The aim is to provide the best possible preventive strategies by determining the fear of childbirth among women and analyzing the relevant factors. Therefore, this study was conducted to determine the prevalence of fear of childbirth and its associated factors in primigravid women in Khorramabad, Lorestan province, Iran.

2. Methods

This cross-sectional study was conducted on 400 primigravid women who referred to 6 health centers and stations of Khorramabad from October 7 to March 16, 2014 for routine prenatal care. After the project was approved by the ethics committee of Tehran University of Medical Sciences and permission was obtained from Lorestan University of Medical Sciences, the multistage cluster sampling was performed. The sampling method was a multistage cluster method. To distribute the sample in the whole city,

the city was divided into 3 parts: north, center, and south. The number of deliveries in each of the 3 sections was 2042, 1288, and 1755, with a total of 5085 births. Then, to calculate the required number of samples in each section, the sample size ($n = 400$) was divided by the total number of deliveries in the 3 sections and the result was multiplied by the population covered by each section. The required sample numbers for the north, center, and south were calculated as 161, 101, and 138, respectively. In each section, the sample share of each section was determined among 6 health centers, which were randomly selected. Pregnant women, who referred to these centers, formed our research units.

Inclusion criteria were as follow: Primigravid women (gestational age: 18 - 32 weeks), who had no medical and obstetric problems in the current pregnancy. After explaining the objectives of the study and ensuring confidentiality, and obtaining written informed consent, the participants were asked to complete the childbirth attitude questionnaire (CAQ), demographic characteristics questionnaire, pregnancy characteristics questionnaire, and Northouse social support questionnaire.

The childbirth attitude questionnaire was used to assess the fear of childbirth. This questionnaire had been revised by Lowe, and its reliability had been confirmed (Cronbach's alpha: 0.84) (44, 45). It includes 14 items based on the 4-point Likert scale (Not at all, too little, moderately, too much). In this questionnaire, the scores range from 14 to 56. The higher score represents higher fear. The median score, ie: 28, was considered for the fear of childbirth. The validity and psychometric properties of this questionnaire were examined by Khorsandi (2008) in Iran, and its reliability was confirmed with a Cronbach's alpha coefficient of 0.75 (4, 20, 46-48). To determine the factors associated with the fear of childbirth, Demographic characteristics, pregnancy characteristics questionnaires, and Northouse social support questionnaire were used.

Northouse social support questionnaire comprises 40 items in five 8-item domains (spouse, family members, friends, physician, and nurse) that assess the level of perceived social support from the spouse, family members, friends, the physician, and the nurses. Items are rated based on a 5-point Likert scale ranging from 1 to 5 (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree, and 5 = strongly agree). The score of perceived social support from each of the supportive sources is calculated separately based on the total scores obtained from each source. The scores for perceived social support from each source range separately from 8 to 40 and are classified into 3 levels of low (8 - 18), average (19 - 29), and high (30 - 40) (49, 50). In this study, the participants only responded to questions of perceived social support from the

spouse. To measure the internal consistency of the questionnaire, Cronbach's alpha was measured as 0.92 (50).

After completing the questionnaires, the data were analyzed using SPSS-21 and descriptive and analytical statistics. To determine the correlation between sociodemographic characteristics, pregnancy characteristics, perceived social support from the spouse, and the fear of childbirth, inferential tests such as chi-square test, t test, and Mann-Whitney test were used; and finally, the multivariate logistic regression analysis was used to predict the impact of each variable. Those independent variables whose p-values were less than 0.3 in the bivariate analysis were entered into the multivariate regression model. In this analysis method, those independent variables that did not have a statistically significant relationship with the dependent variable were excluded from the model, and significant variables remained in the model. Significance level was set at $P < 0.05$.

3. Results

This study was conducted on 400 primigravid women, most of whom (62.5%) aged from 15 to 25 years. The mean age of the participants was 24.44 ± 4.5 years; of the participants, 85.8% were unemployed and 43.8% had high school education (Table 1).

Most of the women (89.5%) received prenatal care, 28.8% had regular physical activity during pregnancy (at least 3 days a week), and 15.2% attended childbirth preparation classes. Most of them (77.2%) had knowledge about vaginal delivery and its stages. Most of the women (82.5%) trusted the health personnel, 79.2% had wanted pregnancies, and 70.8% preferred vaginal delivery (Table 2). Their mean gestational age was 23.70 ± 5.50 weeks.

The mean score for spousal support was 30.70 (± 4.2), and the participants' scores ranged from 11 to 40.

The mean score for the fear of childbirth was 37.86 (± 9.44), and the scores ranged from 14 to 56. Fear of childbirth was observed in most of the primigravid women (80.8% compared to 19.3%).

The results of the independent t test revealed no statistically significant correlation between perceived social support from the spouse and fear of childbirth ($P = 0.3$).

According to the results of the Mann-Whitney test, the variables of education, husband's education, and sufficient income for living expenses were not significantly correlated with the fear of childbirth. Moreover, the results of chi-square test revealed no statistically significant relationship between job, husband's job, and first source of support with fear of childbirth (Table 1).

According to the results of chi-square test, performing exercise during pregnancy, participating in childbirth

Table 1. Relationship of Sociodemographic Characteristics with Fear of Childbirth in Primigravid Women^a

Fear of Childbirth/Variable	No	Yes	Total	P Value
Education				0.06
Illiterate	5 (6.5)	7 (3.2)	12 (3)	
Elementary	6 (7.8)	15 (4.6)	21 (5.2)	
Secondary	5 (6.5)	25 (7.7)	30 (7.5)	
High school	36 (46.7)	139 (43)	175 (43.8)	
College	25 (32.5)	137 (42.5)	162 (40.5)	
Total	77 (100)	223 (100)	400 (100)	
Job				0.718
Unemployed	65 (84.4)	278 (86.1)	343 (85.8)	
Employed	12 (15.6)	45 (13.9)	57 (14.2)	
Total	77 (100)	323 (100)	400 (100)	
Husband's education				0.09
Illiterate	2 (2.6)	4 (1.2)	6 (1.5)	
Elementary	8 (10.4)	14 (4.3)	22 (5.5)	
Secondary	16 (20.8)	41 (12.7)	57 (14.3)	
High school	24 (31.2)	145 (44.9)	169 (42.2)	
College	27 (35.1)	119 (36.9)	146 (35.6)	
Total	77 (100)	323 (100)	400 (100)	
Husband's job				0.650
Unemployed	5 (6.5)	29 (9)	34 (8.5)	
Employed	72 (93.6)	294 (91)	366 (91.5)	
Total	77 (100)	323 (100)	400 (100)	
The first source of support	17 (22.1)	88 (27.2)	105 (26.3)	0.405
Parents				
Spous	56 (72.7)	226 (70)	282 (70.5)	
Others	4 (5.2)	9 (2.8)	13 (3.2)	
Total	77 (100)	323 (100)	400 (100)	
Sufficient income for living expenses				0.126
Not at all	18 (23.4)	69 (21.4)	87 (21.8)	
Somewhat	50 (64.9)	236 (73.1)	286 (71.5)	
Completely	9 (11.7)	18 (5.6)	27 (6.8)	
Total	77 (100)	323 (100)	400 (100)	

^aValues are expressed as No. (%).

preparation classes, and preferred mode of delivery were significantly correlated with fear of childbirth (Table 2).

Those independent variables whose P values were less than 0.3 in the bivariate analysis were entered into the multivariate regression model. In this analysis method, those independent variables that had no statistically significant correlation with the dependent variable were ex-

cluded from the model, and significant variables were remained in the model.

Variables of sufficient income for living expenses, participating in childbirth preparation classes, and a preference for mode of delivery were predictors of fear of childbirth. Fear of childbirth in women, who were not satisfied with their income was 3.7 times more than those who were

Table 2. Relationship Between the Current Pregnancy Characteristics and Fear of Childbirth in Primigravid Women^a

Fear of Childbirth/Variable	No	Yes	Total	P Value
Prenatal care				0.413
Yes	67 (87)	291 (90.1)	358 (89.5)	
No	10 (13)	32 (9.9)	42 (10.5)	
Total	77 (100)	323 (100)	400 (100)	
Exercise during pregnancy				0.003
Yes	33 (42.9)	82 (25.4)	115 (28.8)	
No	44 (57.1)	241 (74.6)	285 (71.2)	
Total	77 (100)	323 (100)	400 (100)	
participation in childbirth preparation classes				0.007
Yes	20 (26)	41 (12.7)	61 (15.2)	
No	57 (74)	282 (87.3)	339 (84.8)	
Total	77 (100)	232 (100)	400 (100)	
Information about childbearing process				0.99
Yes	60 (77.9)	249 (77.1)	309 (77.2)	
No	17 (22.1)	74 (22.9)	91 (22.8)	
Total	77 (100)	323 (100)	400 (100)	
Trust in health personnel				0.506
Yes	67 (87)	263 (81.4)	330 (82.5)	
No	1 (1.3)	7 (2.2)	8 (2)	
Somewhat	9 (11.7)	53 (16.4)	62 (15.5)	
Total	77 (100)	323 (100)	400 (100)	
Wanted pregnancy				0.063
Yes	67 (87)	250 (77.4)	317 (79.2)	
No	10 (13)	73 (22.6)	83 (20.8)	
Total	77 (100)	323 (100)	400 (100)	
Preference for mode of delivery				< 0.001
Vaginal	72 (93.5)	211 (65.3)	283 (70.8)	
Cesarean	5 (6.5)	112 (34.7)	117 (29.2)	
Total	77 (100)	323 (100)	400 (100)	

^aValues are expressed as No. (%).

completely satisfied with their income ($P = 0.02$). Fear of childbirth in women who participated in childbirth preparation classes was almost twice as that of those who did not ($P = 0.040$). Also, the level of fear in women, who preferred vaginal delivery was 6.6 times more than those who preferred cesarean- section ($P < 0.001$) (Table 3).

4. Discussion

Pregnancy is one of the most important events in every woman's life, and fear of childbirth is a common con-

cern in primigravid women. Demographic and psychological characteristics of pregnant women and their relationship with their husbands affect their attitudes toward pregnancy and fear of childbirth and often lead to request for cesarean- section (46). In this study, of the 400 primigravid women, 80.8% had experienced fear of childbirth. The results revealed significant correlations between sufficient income for living expenses ($P = 0.02$), participation in childbirth preparation classes ($P = 0.040$), and preference for mode of delivery ($P < 0.001$), and fear of childbirth.

Table 3. Correlation Between Sufficient Income for Living Expenses, Participation in Childbirth Preparation Classes, and Preference for Mode of Delivery and fear of Childbirth in the Primigravid Based on Multivariate Logistic Regression Model

Variables	B	S.E	OR (95%CI)	P Value
Sufficient income				
Not at all	1.307	0.563	3.696 (1.227 - 11.138)	0.020
Somewhat	1.227	0.469	3.410 (1.360 - 8.552)	0.009
Completely (reference)	-	-	-	-
Participation in childbirth preparation classes				0.040
Yes (reference)	-	-	-	-
No	0.636	0.324	1.889 (1.002 - 3.561)	-
Preference for mode of delivery				< 0.001
Vaginal	1.887	0.481	6.597 (2.570 - 16.398)	-
Cesarean (reference)	-	-	-	-

In a study conducted by Negahban and Ansari (2004), to determine the correlation between fear of childbirth and the risk of emergency cesarean-section in primigravid women, it was found that 93% of women had experienced fear of childbirth to some extent (51).

Fenwick et al. (2009) conducted a study in Western Australia to determine the levels of fear of childbirth before and after delivery in pregnant women and its relationship with birth outcomes. According to the findings, 26% of women had mild fear, 48% moderate fear, and 26% intense fear of childbirth. In general, the mean score for fear of childbirth at the 36th week of pregnancy in the nulliparous women was higher than in parous women ($P < 0.001$) (9).

Nilsson et al. (2012) conducted a study in Sweden to determine the fear of childbirth during pregnancy and 1 year after childbirth and its relationship with the experience and mode of delivery. Based on their findings, no correlation was found between fear of childbirth and sociodemographic factors (age, marital status, place of birth, education level, and smoking habits). Moreover, they found no correlation between the fear of childbirth during pregnancy and parity. However, it was reported that the fear of childbirth was higher in primiparous women 1 year after delivery (12).

In the present study, no significant correlations were observed between age, job, education level of the pregnant woman, and perceived social support from the spouse, and the fear of childbirth, but significant correlations were found between sufficient income for living expenses, participation in childbirth preparation classes, and preference for mode of delivery and the fear of childbirth. These results are consistent with the findings of Akhlaghi et al. (2012), who reported no correlation between age, educa-

tion level of the pregnant woman, and the fear of childbirth (46). Heimstad and Norum also reported no significant correlations between education level, age, mother's job, and the fear of childbirth (35, 52). However, Laursen et al. concluded that the factors affecting the fear of childbirth in primiparous women including low education level, lack of social support, being housewives, and being young are significantly associated with increased fear of childbirth (33). In the study of Akhlaghi et al. (2012), no significant correlation was observed between the income and fear of childbirth (46), which is not consistent with our study. This may be because it did not cover all strata of the society and was limited only to those who referred to public hospitals. This issue can be clarified by further investigation on private and public hospitals. A study conducted on 279 women and their husbands revealed that the anxiety associated with pregnancy and fear of childbirth are higher among women with high anxiety, tension, vulnerability, depression, and low self-esteem, who do not have marital satisfaction and social support (53). In the present study, no correlation was observed between perceived social support from the spouse and the mother's fear of childbirth, which can be due to the significant role of other factors such as personality traits of the mother and the effect of her knowledge on the fear of childbirth.

The results of this study indicated that the fear of childbirth in women, who did not participate in childbirth preparation classes was almost twice as that of those who did. This is consistent with the results of a study conducted in Turkey, which revealed a significant negative correlation between the women's proper knowledge of childbirth, and their cooperation with medical staff during childbirth, and the fear of childbirth. It means that as the women's awareness of childbirth increased, their fear of childbirth

and their request for cesarean-section decreased (54).

Inadequate childbirth-related training during pregnancy is one of the issues that should be taken into consideration. In this study, only 15.3% of women received training, while most of them did not participate in childbirth preparation classes. Training during pregnancy is an appropriate way to reduce fear of childbirth because it gives the opportunity to pregnant women to raise their awareness of pregnancy and childbirth (26).

This study indicated that the fear of childbirth among women who preferred vaginal delivery was 6.6 times more than that of those who preferred cesarean-section. Several studies reported that women who tend to have a cesarean-section fear labor pain more (17, 55-57). This can suggest that these mothers regard cesarean delivery as a painless childbirth and this might be the reason why they feel less fear than women who have preferred vaginal delivery.

In the study of Johanson et al. the highest percentage of agreement about the pregnant mothers' attitude toward cesarean delivery was that cesarean delivery was more convenient than vaginal delivery (58). In the study of Ryding et al. most of women have expressed fear of pain as the main reason for choosing cesarean-section (59).

Liu et al. (2013) conducted a qualitative study entitled as "Understanding Women's Preferences and Motivational Factors in Choosing Mode of Delivery" on nulliparous women in Argentina. The findings revealed that most research units preferred natural childbirth due to cultural, individual, and social factors. They considered childbirth as a natural and healthy way for passing through the stage of femininity to the maternal stage. In contrast, cesarean-section was considered as a medical decision and often submission to medical staff decisions in the presence of medical indications. According to the results of this study, women's preference for choosing mode of delivery depends on cultural, individual, and social factors. Therefore, in a woman who chooses cesarean delivery, the first step is to listen to her dialogues to determine her awareness of natural childbirth and cesarean-section, her information resources as well as her thoughts about her personal abilities and capabilities, and what have occurred in previous deliveries (1). Health workers must be sensitive to the fact that the information needs of all women are not the same, and their information plays a role in deciding about the mode of delivery (60).

The results of this study indicated that most of the primigravid women feared childbirth. Given that the factors associated with fear of childbirth are different in different cultures and societies, identifying these factors can be useful for planning and providing prenatal services and helping the health personnel provide better services to pregnant women. Since fear of childbirth is one of the

main reasons for the increased cesarean delivery worldwide and the rate of cesarean delivery is high in Lorestan province, holding childbirth preparation classes focusing on pregnant women with fear of childbirth can be an effective measure to reduce the fear of childbirth and reinforce vaginal delivery.

The only limitation was that the study was conducted based on questionnaires with closed-ended questions and it seems that qualitative studies or open-ended questions can more deeply examine the factors associated with fear of childbirth. Therefore, due to cultural factors affecting the fear of childbirth, qualitative research is also highly recommended.

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Footnote

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