

Fear of childbirth in women with normal pregnancy evolution

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Summary

Purpose of investigation: The authors aimed to research the prevalence of fear of childbirth (FOC) in women with a positive birth experience and some factors associated with FOC. **Materials and Methods:** The study sample consisted of 817 women with positive birth experience within the last month of their pregnancy from February 2012 to May 2013. The data were collected with a questionnaire form including women's demographic-obstetric information and the Turkish form of Wijma Delivery Expectancy Questionnaire. Whether it was a planned pregnancy and their preferable delivery method for the current pregnancy were recorded. **Results:** The total number of women with FOC was found to be 128 (15.6%). None of the patients had severe FOC. Fear of labour pain was found as the major cause for preferring cesarean section (73.5%). FOC was associated with preferring delivery methods (OR 5.91, 95% CI 3.96-8.84). FOC was associated with pregnancy planning status (OR 2.4, 95% CI 1.66-3.58). **Conclusion:** Fear of childbirth may be seen to some extent in women with a positive birth experience. However even with woman's positive birth experience, it is important to avoid severe FOC. The pregnancy planning status should be evaluated in the early stages of pregnancy and maternal education programs may be offered to reduce FOC level.

Key words: Fear of childbirth; Positive birth experience; Parous; Pregnancy planning status.

Introduction

Fear of childbirth (FOC) is a significant problem during pregnancy and in prenatal and the postnatal periods [1]. FOC may cause an increase in the rate of cesarean section on the mother's request due to the fear of labour pain, baby's death, woman's death herself, losing control during labour, vaginal instrumental birth, and third-degree perineal tear [2]. Its prevalence differs based on maternal factors such as parity, maternal age, delivery method, educational level, history of complicated pregnancy, and whether there are psychological problems [3, 4]. Due to these factors, prevalence of FOC in women has been reported to vary from 5% to 20% [5-7].

Experienced traumatic delivery (e.g. emergency cesarean section, vacuum extraction) has been found as a risk factor for the development of FOC in multiparous women [3, 8, 9]. Nilsson *et al.* [4] reported that a negative birth experience was the most important factor for explaining FOC during pregnancy and one year after birth. Although Nieminen *et al.* [8] found that nulliparous women had higher mean FOC scores compared to parous women. In another study, Fenwick *et al.* [10] showed that nulliparous women experienced more fear than parous women before birth, and there was no difference in postpartum fear levels between nulliparous and parous women.

The authors investigated whether FOC may occur in multiparous women with previously uncomplicated vaginal delivery or elective cesarean delivery. The primary aim of this study was to evaluate FOC prevalence in multiparous women with a positive birth experience. The secondary aim of this study is to detect the relationship among FOC, previous delivery method, planned pregnancy, preferred method of delivery in multiparous women with no history of negative delivery, and pregnancy experiences.

Materials and Methods

This descriptive study was approved by the Ethics Committee of the Medical Faculty, Atatürk University. This study was conducted at the Obstetrics Department of Nenehatun Hospital (mean annual delivery rate: 6,000 deliveries), Erzurum, Turkey, from February 2012 to May 2013. Initially, obstetric examination was performed and whether there was a maternal or fetal problem was detected. Women with first pregnancy, complicated pregnancies (e.g. placenta previa, oligohydramnios, and fetal congenital abnormalities), medical disease (e.g. hypertension, diabetes mellitus), psychiatric illness, multiple pregnancies, a complication in previous pregnancies (e.g. miscarriage, abortion), experienced traumatic delivery (e.g. emergency cesarean section, forceps or vacuum extraction), and using assisted reproductive technologies to become pregnant were excluded from the study. Patients were questioned about their birth experience and their answers analysed according to previous studies [4, 6].

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Table 1. — *The demographic and obstetric characteristics of women participating in the study.*

Characteristic	Group 1 (n = 472)	Group 2 (n = 345)	p value
Age (years)	28.74 ± 4.93	29.35 ± 4.39	> 0.05
Maternal BMI (kg/m ²)	29.28 ± 3.40	28.93 ± 2.98	> 0.05
Parity	2.45 ± 0.79	2.37 ± 0.63	> 0.05
Weeks of gestation	35 ± 4.34	36 ± 2.68	> 0.05

Group 1: Women with a previous uncomplicated vaginal delivery.

Group 2: Women with a previous elective cesarean section delivery.

Patients with numeric rating scale score (NRS) ≥ 9 were defined as a negative birth experience [6] and they were excluded from the study. Patients who had undergone previous cesarean section because of maternal request were also excluded. The inclusion criteria composed of multiparity, pregnancy between 35 and 37 weeks gestation, uncomplicated pregnancy, history no traumatic pregnancy or delivery and history, and no severe FOC in previous pregnancies.

After written informed consent was obtained from women, the data were collected with a questionnaire form. The questionnaire included women's demographic-obstetric information and the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) form A. W-DEQ form A measures FOC level with 33 items in pregnant women [11]. In this study, FOC was assessed with the Turkish form of W-DEQ version A that has been established as reliable and valid to measure the level of FOC among Turkish women by Korukcu *et al.* [12]. This form includes 33 items regarding women's cognitive appraisal and expectancies of childbirth. Answers are given on six scale steps per item ranging from 0 (not at all) to 5 (extremely) and the FOC level is detected according to total W-DEQ scores. W-DEQ scores ≥ 85 is defined as FOC and W-DEQ ≥ 100 is defined as severe FOC or phobic fear [6]. Participants completed W-DEQ form A and maternal age, gestational week, parity, educational level, previous delivery methods, whether planned pregnancy, and preferable delivery method for the current pregnancy were recorded.

A power analysis was calculated for this study using Russ Lenth's Power and sample size calculation application [13]; 323 patients are needed to calculate the probability of a condition with $p = 0.03$, alpha 5% with a power of 80%. However, the authors selected 900 prospective participants to improve the chances of accuracy.

Statistical analysis

SPSS 14 for Windows was used for statistical analysis of data. Data was initially assessed for normality using the Kolmogorov-Smirnov test. The analysis of participants for differences in demographic and obstetric characteristics was assessed with the unpaired t test. Presence (W-DEQ score ≥ 85) or absence (W-DEQ score < 85) of FOC was detected by calculating the total W-DEQ scores of the participants. The numbers of participants with FOC in two groups were compared using the Pearson chi-square test. The unpaired t test was conducted to compare FOC scores, previous delivery method, parity, planned pregnancy, and preferred delivery methods for the current pregnancy in two groups. In group 2, comparison of W-DEQ scores of the patients according to used anaesthetic technique were made with unpaired t test. The findings were calculated as mean \pm standard deviation and odds ratios (OR) with 95% confidence intervals (CI). A $p < 0.05$ was considered significant.

Table 2. — *Some factors associated with FOC and mean W-DEQ scores of women.*

	Fear of childbirth during pregnancy (W-DEQ score ≥ 85) n, %	W-DEQ scores (mean \pm SD)
Group 1 (n=472)	75, 15.9	70.42 \pm 12.67
Group 2 (n=345)	53, 15.4	71.21 \pm 11.79
Women with age ≥ 35 (n=125)	31, 24.8*	75.70 \pm 10.20*
Women with age < 35 (n=692)	97, 14.0	69.86 \pm 12.44
University graduates (n=129)	21, 16.3	70.73 \pm 12.42
Non-university graduates (n=688)	107, 15.6	70.75 \pm 12.29
Planned pregnancy (n=576)	69, 11.9	68.34 \pm 11.72**
Unplanned pregnancy (n=241)	59, 24.4	76.52 \pm 1.73
Women who previously had elective cesarean section with regional anaesthesia (n=204)	24***, 11.7	70.42 \pm 11.44
Women who previously had elective cesarean section with general anaesthesia (n=141)	26, 18.4	72.56 \pm 11.82

Group 1: Women with a previous uncomplicated vaginal delivery.

Group 2: Women with a previous elective cesarean section delivery.

* $p < 0.001$, compared to women with age < 35 years.

** $p < 0.0001$, compared to unplanned pregnancy.

*** $p < 0.05$, compared to women who previously had elective cesarean section with general anaesthesia.

Results

During the study period 2,300 multiparous women attended the clinic for antenatal control, of whom 2,100 agreed to participate. Among these women 1,000 were excluded from the study due to history of experienced traumatic pregnancy (emergency cesarean section 'n = 300'; forceps or vacuum extraction 'n = 100'; history of miscarriage, abortion, and fetal malformation 'n = 300', severe FOC in previous delivery 'n = 200', and deep perineal laceration 'n = 100'). Women who had become pregnant with assisted reproductive techniques (n = 150) were excluded from the study. Ten women with placenta previa, three women with twin pregnancies, five women with suspected fetal abnormality, ten women with gestational diabetes, and five women with psychiatric disease were also excluded. The remaining 917 patients were questioned about their previous birth experience and 100 patients were diagnosed as having had a negative birth experience (NRS score ≥ 9) were excluded from the study.

Eventually, the study sample consisted of 817 women who had completed the questionnaire form. Two groups were formed: group 1: women with a previous uncomplicated vaginal delivery (n = 472) and group 2: women with a previous elective cesarean section delivery (n = 345). Indications for cesarean section in group 2 were cephalopelvic disproportion (n = 70), previous cesarean section (n = 200), repeated cesarean (n = 50), non-cephalic presentation (n = 22), and genital herpes (n = 3). The demographic and obstetric characteristics of women are presented in Table 1. The total number of women with FOC in both groups (W-DEQ score ≥ 85) was 128 (15.6%). Women in group 1 had

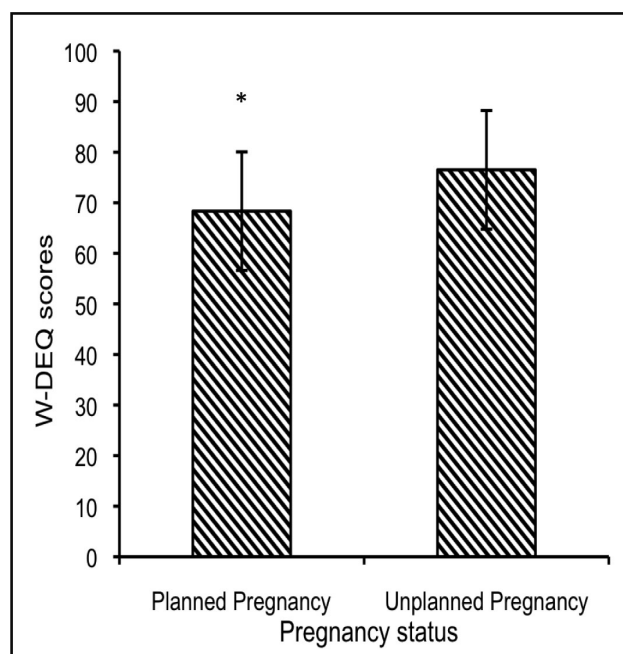


Figure 1. — Mean W-DEQ scores of women according to pregnancy status, * $p < 0.0001$, compared to unplanned pregnancy.

similar mean W-DEQ scores to group 2 (70.42 ± 12.67 , 71.21 ± 11.79 , respectively, $p > 0.05$). The percentage of women with FOC was found to be higher in women who previously had elective caesarean section with general anaesthesia (18.4%) than women with regional anaesthesia (11.7%) ($p < 0.05$, OR 1.87, 95% CI 1.02 - 3.43) (Table 2).

There was no correlation among FOC level and educational level ($p > 0.05$) (Table 2). Lower mean W-DEQ scores were found in women who had planned their pregnancy (68.34 ± 11.73) than unplanned pregnancy (76.52 ± 1.73), ($p < 0.0001$) (Figure 1). FOC was associated with pregnancy planning status (OR 2.4, 95% CI 1.66 - 3.58). Fifty-three women (41.4%) with FOC and 560 women without FOC (81.2%) preferred vaginal delivery for their current pregnancy and difference was significant ($p < 0.001$). Fear of labour pain was found as the major cause for preferring caesarean section (73.5%). The women who desired caesarean section ($n = 204$) had similar W-DEQ scores to the women who desired vaginal delivery ($n = 613$) for current pregnancy (72.55 ± 11.19 , 70.51 ± 12.45 , respectively, $p > 0.05$). FOC was associated with preferring delivery methods (OR 5.91, 95% CI 3.96 - 8.84) (Table 3). W-DEQ scores were found to be higher in participants over 35 years of age compared with the others (75.70 ± 10.20 , 69.86 ± 12.44 , respectively, $p < 0.001$) (Figure 2, Table 2). The odds ratio of FOC was 1.99 (95% CI 1.28 - 3.16) for age. In both groups, none of the patients had severe FOC (W-DEQ score ≥ 100). Women with W-DEQ score ≥ 85 referred to a specialist for psycho-education and psychosomatic support.

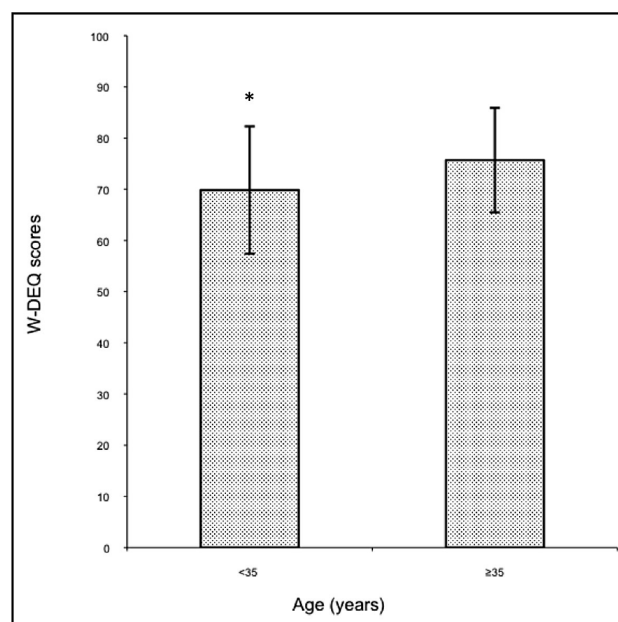


Figure 2. — Mean W-DEQ scores of women according to age, * $p < 0.001$, compared to age < 35 years.

Table 3. — Distribution of women according to preferred delivery methods for their current pregnancy and causes for preferring delivery methods.

	Women who desired cesarean section for their current pregnancy (n=111)	Women who desired vaginal delivery for their current pregnancy (n=706)
Women with FOC in both groups (n=128)	75, 58.6%	53*, 41.4%
Women without FOC in both groups (n=689)	129, 18.7%	560**, 81.2%
Mean W-DEQ scores (mean±SD)	72.55±11.19	70.51±12.45

	n, %
Women's reasons for preferring vaginal delivery (n=613)	
- Post-delivery recovery is easier	100, 16.3
- It is a natural way	400, 65.2
- It is safer for the baby and mother	80, 13.0
- It is my doctor's advice	33, 5.38
Women's reasons for preferring elective cesarean section (n=204)	
- Fear of labour pain	150, 73.5
- Wanted control of delivery time	20, 9.8
- Fear of vaginal lacerations	30, 14.7
- Tubal ligation request	4, 1.96

* $p < 0.005$, compared to the women with FOC who desired cesarean section for their current pregnancy. ** $p < 0.001$, compared to the women without FOC who desired cesarean section for their current pregnancy.

Discussion

This study shows a high prevalence (15.6%) of FOC in the 817 multiparous women with positive birth experience. The women with previous elective cesarean section delivery had similar mean W-DEQ scores to women with previous uncomplicated vaginal delivery. There was no association between educational level and FOC. However, a strong association was found among FOC, age, and whether the pregnancy was planned in this study. FOC was found to be associated with maternal request for cesarean section in this study.

There are many studies researching the causes of FOC [3-7]. A strong association was found between FOC and negative birth experiences by Nilsson *et al.* [4]. Nieminen *et al.* [8] reported higher W-DEQ scores in women who had experienced a vacuum extraction or forceps delivery than women with no experience of instrumental delivery. They also found no association between maternal education and marital status with FOC. Saisto *et al.* [4] analysed the first deliveries of 100 primiparas who reported severe FOC during their second pregnancies. They found a significant association between emergency cesarean section, vacuum extraction, and FOC.

In this study, the women with previous elective cesarean section delivery had similar mean W-DEQ scores to women with previous uncomplicated vaginal delivery. In contrast to this study, Rouhe *et al.* [3] found higher mean W-DEQ scores in women with previous cesarean section compared to women with previous vaginal delivery. However, they had not asked the women about indications for cesarean section in previous deliveries, whereas emergency cesarean section has been reported as an important cause of FOC in previous studies [4, 8]. Women who had had previously emergency cesarean section were excluded from this study. The authors researched the effect of previously delivery method on FOC in women with no history of negative delivery and pregnancy experience. A similar FOC level was found in previous elective cesarean section delivery group compared to the previous uncomplicated vaginal delivery group in this study. Interestingly, women with general anaesthesia experience had similar mean W-DEQ scores compared with women with regional anaesthesia experience in previous elective cesarean delivery group. However, the number of women with FOC was higher in women with general anaesthesia than regional anaesthesia. The reason for this situation may be due to the women's fear of not waking up after general anaesthesia. If the patient is conscious in regional anaesthesia during surgery, there is no fear of waking up and she is calm because she could see her baby.

The present study is the first research investigating FOC level in a large sample selected multiparous women with no negative history of delivery and pregnancy experience. Nilsson *et al.* [4] discovered FOC in 50 of 369 women with a positive birth experience. Their study group was created

from patients who previously had spontaneous vaginal delivery, vacuum extraction delivery, and emergency or elective cesarean section delivery. In the current study, FOC was observed in 128 of 817 women, and the study sample was created using patients with a positive birth experience who previously had elective cesarean or uncomplicated vaginal delivery. FOC was reported in 61 of 1,179 patients with positive birth experience by Storksen *et al.* [6]. However, there were no inclusion criteria in their study. Although women with previous complicated pregnancies or deliveries and obstetric complications for their current pregnancy were excluded from the present study, FOC prevalence was found higher in this study than in the studies of Nilsson *et al.* [4] and Storksen *et al.* [6]. The most important reason for this result may be lack of information regarding the delivery of Turkish women because of inadequate prenatal education. Another factor is that regional anaesthesia methods for labour pain relief are not used routinely in the present clinic. Also, Turkish women had insufficient support from their partner during pregnancy [14].

Rouhe *et al.* [3] found that severe FOC (W-DEQ scores > 100) was more common in nulliparous women than parous women. Additionally, they reported that incidence of severe FOC was more in women beyond 21 weeks of gestation compared with those before. None of the women had severe FOC in the present study. This reveals the importance of a positive birth experience to reduce the level of FOC. Indeed, it was reported that for explaining subsequent FOC, women's negative overall birth experience was a more important factor than the delivery method [4]. The present authors found higher W-DEQ scores in participants over the age of 35 compared to participants under the age of 35. In contrast to these results, Nilsson *et al.* [4] found no association between FOC and maternal age during pregnancy or one year after childbirth.

In another study, it was shown that women with an unplanned pregnancy experienced had more depressive symptoms during pregnancy than women with a planned pregnancy [15]. The present authors have previously reported a higher rate of hyperemesis in patients with an unplanned pregnancy compared to patients with a planned pregnancy [16]. In the current study, W-DEQ scores were found to be significantly lower in women with planned pregnancy than unplanned pregnancy.

Previously studies showed that patients with FOC had preferred cesarean section for current pregnancy [17, 18]. The present results supported these findings; cesarean section delivery was chosen by most women with FOC. Fear of labour pain was the most significant reason the preference for cesarean section delivery. It has been revealed that the request for cesarean section due to fear may be reduced by psychological support, psycho-education, and relaxation exercises [19].

Regarding the limitations of this study, the authors did not establish a group of patients with a negative birth experience

for comparison to patients with positive birth experience. Another limitation is the failure to include patients with first pregnancy. A comparison may be done in terms of FOC level between primiparous and multiparous Turkish women.

Conclusion

FOC may be seen to some extent in women with a positive birth experiences; however women's positive birth experience is important to avoid severe FOC. Pain relief methods in labour should be effectively implemented to reduce the cesarean section rate due to maternal request. In addition, pregnancy planning status should be evaluated in the early stages of pregnancy and maternal education programs may be offered to support their psychological health and to reduce FOC. To reduce the prevalence of FOC, women may be encouraged to complete their family before the age of 35. Larger population studies are needed to identify the underlying causes of fear of childbirth in women with a positive birth experience.

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