




ARAŞTIRMA / RESEARCH

Determination of risk factors affecting fear of childbirth during pregnancy

Gebelik süresince doğum korkusunu etkileyen risk faktörlerinin belirlenmesi

Cenk Soysal¹ , Mehmet Murat Işıksalan² 

¹Kütahya University of Health Sciences, Department of Obstetrics and Gynecology

²Necmettin Erbakan University, Department of Obstetrics and Gynecology

Cukurova Medical Journal 2020;45(4):1340-1345:

Abstract

Purpose: We aimed to investigate the level of fear of childbirth in pregnant women in terms of factors such as age, number of births, education level, and immigration status.

Materials and Methods: This cross-sectional study was carried out by including 444 pregnant women who have 32-36 weeks of pregnancy and voluntarily agree to participate in the research, all of them are literate and applied to Kütahya Health Sciences University Evliya Çelebi Training and Research Hospital between 25.07.2019 - 01.11.2019. The data were collected using the Wijma Birth Expectation / Experience Scale (W-DEQ), and the questionnaire was administered to the immigrant patients by an outpatient doctor via an interpreter.

Results: The average age of the pregnant women was 31.65 ±6.83 years. 24.8% (n = 110) of all the participants had low levels of fear of childbirth, 21.8% (n = 97) had moderate fear, 27.9% (n = 124) had severe fear, and 25% (n = 113) were identified as having very severe fear of childbirth. The W-DEQ score increased as the education level increased, but there was no difference between university graduates and postgraduate pregnant women. Fear of childbirth in migrant women was found to be significantly lower compared to Turkish women.

Conclusion: Fear of childbirth is affected by age, education, immigration, and these conditions vary among societies. Pre-determining conditions that can increase fear of childbirth and implementing social support programs in selected patient groups may decrease the fear of childbirth and lower the number of cesarean sections in Turkey.

Keywords: Fear of childbirth, pregnancy, education level, immigration

Öz

Amaç: Çalışmanın amacı gebelerin yaşı, doğum sayısı, eğitim düzeyi ve göçmenlik durumu faktörlerinin doğum korkusu üzerine olan etkisini araştırmaktır.

Gereç ve Yöntem: Bu kesitsel çalışma 25.07.2019 – 01.11.2019 tarihleri arasında Kütahya Sağlık Bilimleri Üniversitesi Evliya Çelebi Eğitim Araştırma Hastanesi'ne başvuran, tamamı okuma yazma bilen, 32-36 hafta arasındaki araştırmaya gönüllü olarak katılmayı kabul eden 444 gebe dahil edilerek yapıldı. Veriler Wijma Doğum Beklentisi/Deneyimi Ölçeği (W-DEQ) ile toplanmıştır ve Göçmen hastalara tercüman eşliğinde poliklinik doktoru tarafından anket soruları soruldu.

Bulgular: Çalışma grubunu oluşturan gebelerde ortalama yaş 31,65±6,83 yıl idi. Tüm katılımcıların %24,8'i (n=110) düşük doğum korkusuna, %21,8'i (n=97) orta düzey doğum korkusuna, %27,9'u (n=124) şiddetli doğum korkusuna ve %25'inde (n=113) çok şiddetli doğum korkusuna sahip olarak belirlenmiştir. Katılımcıların eğitim düzeyi arttıkça W-DEQ skorunda arttığı görülürken, sadece üniversite mezunu ve lisansüstü mezunu gebeler arasında fark görülmemiştir. Göçmen gebelerde ise Türkiye vatandaşı ggebelere göre doğum korkusu anlamlı olarak az bulunmuştur.

Sonuç: Doğum korkusu yaştan, eğitim durumundan, göçmenlik durumundan etkilenmekte olup, bu koşullar toplumlara göre değişiklik göstermektedir. Doğum korkusunu arttıran koşulların önceden belirlenmesi ve seçilmiş hasta gruplarında sosyal destek programları uygulanması doğum korkusunu azaltıp, ülkemizde artan sezaryen oranlarını düşürebilir.

Anahtar kelimeler: Doğum korkusu, gebelik, eğitim düzeyi, göçmenlik

Yazışma Adresi/Address for Correspondence: Dr. Cenk Soysal, Kütahya University of Health Sciences, Department of Obstetrics and Gynecology, Kütahya, Turkey E- mail: cenk.soysal@ksbu.edu.tr

Geliş tarihi/Received: 22.04.2020 Kabul tarihi/Accepted: 06.09.2020 Çevrimiçi yayın/Published online: 30.12.2020

INTRODUCTION

Although pregnancy is a natural process in a woman's life, it brings about some physiological and psychological changes¹. Individual beliefs, experience, and personality can precipitate a sense of uncertainty or anxiety with regards to an impending birth, which is referred to as a fear of childbirth². It is known that a rise in the fear of childbirth increases cesarean rates³. Fear of childbirth varies between 8% and 27% in western countries⁴. In the last meta-analysis, despite marked heterogeneity, the prevalence of birth fear was found to be 14%⁵. Many factors such as maternal age, parity, miscarriage, stillbirth in previous pregnancies, history of operative delivery, previous cesarean section, an adverse perinatal outcome in a previous pregnancy, low education level, low socio-economic level and psychiatric problems have been emphasized in previous studies⁶⁻¹⁰. Evidence suggests that psychosocial education and social support provided by healthcare providers to pregnant women can significantly reduce fear of childbirth¹¹⁻¹³.

Many of the published studies on fear of childbirth are from Scandinavia and Europe. Since the backgrounds, ethnicities, religious perceptions, social structures and lifestyles of these regions are different, the results from those studies will not apply to the population in Turkey. The most comprehensive study done in Turkey concerning fear of childbirth, was conducted by Deliktas et al., whose systematic review and meta-analysis of 14 studies was carried out with various segments of the population of Turkey¹⁴. Because of the limited data on the immigrant population in earlier studies, we aimed to investigate the impact of demographic data and education level on the fear of childbirth in pregnant women as well as the level of fear of childbirth in the Syrian immigrant population.

In our study, we aimed to examine how this fear is related to education level and immigration using the W-DEQ questionnaire, which questions different aspects of birth fear, such as general anxiety, depression, prenatal attachment and expectations about impending birth.

MATERIALS AND METHODS

This cross-sectional study was carried out by including 522 pregnant women who had reached 32-36 weeks of pregnancy and voluntarily agreed to participate in the research. Eightytwo participant

were excluded from the study for various reasons (6 fetal chromosomal abnormality, 10 diabetes mellitus, 12 preeclampsia, 18 previous miscarriage, 19 illiteracy, 17 previous cesarean delivery). All of the participants are literate and applied to Kütahya Health Sciences University Evliya Çelebi Training and Research Hospital between 25.07.2019 and 01.11.2019. Ethical approval for the study was obtained by Kütahya Health Sciences University on 24.07.2019 with decision number 2019/08-5. Informed consent was obtained from all participants and the study was conducted according to the Helsinki criteria.

Inclusion criteria were based on participant literacy, 32-36 weeks of gestation and an uncomplicated pregnancy. Exclusion criteria included: detected fetal structural and chromosomal anomalies or complicated pregnancies due to gestational diabetes, preeclampsia, large fetus, maternal chronic diseases. Women who had psychiatric disorders a previous miscarriage, a previous cesarean delivery or planned to elective cesarean delivery were also excluded. The migrant patients were asked the survey questions by an outpatient doctor accompanied by an interpreter.

W-DEQ is a likert type scale consisting of 33 expressions that measure stress and fear of delivery. The scale was adapted to Turkish by Körükçü and Kukulcu, and the Cronbach alpha value of the scale was found to be 0.92¹⁵. The answers in the scale are numbered from 0 to 5 and are a six-point Likert type. The minimum score of the questionnaire is 0 and the maximum score is 165. High scores showed that women had a high fear of giving birth. Levels of fear of childbirth are categorised according to W-DEQ scores into low (<37), moderate (38-65), high (66-84) and severe (>85).

Procedure

The pregnant women included in the study were asked to answer the questionnaire while waiting for a routine ultrasound examination between 32 and 36 weeks of gestation. They were informed verbally about the study and given the opportunity to ask questions. If any woman did not speak Turkish, the information was given through a third person (often a husband or friend) in the woman's native language (Arabic) and Turkish.

According to the purpose of the study, participants were asked questions about age, obstetric history, education level and immigration status and the data

was recorded. The 33-item questionnaire included questions on version A of the Wijma birth expectation and experience scale. Questions 2, 3, 6, 7, 8, 11, 12, 15, 19, 20, 24, 25, 27 and 31 in the questionnaire were calculated by inverting in the opposite direction to adapt to the measurement².

Statistical analysis

All data collected for statistical analysis were analyzed by the *Statistical Package for the Social Sciences* (SPSS), version 23, SPSS Inc., Chicago, IL. The Kolmogorov Smirnov test was used to determine whether the data were normally distributed for each group. Groups with normal distribution were compared using the student t test, while the Mann Whitney U test was used for data that did not fit the normal distribution. For multiple comparisons, the one-way analysis of variance (ANOVA test) was used for multiple analyses. The differences between groups were evaluated with the Tukey test. As for statistical

significance, values with $p < 0.05$ were defined as significant.

RESULTS

The ages of the pregnant women in the study group ranged between 18 and 43, and the mean age was 31.65 ± 6.83 years. The demographic data of the participants are shown in Table-1. The W-DEQ score of pregnant women under the age of 30 was significantly lower than pregnant women over the age of 30 ($p < 0.001$). The average W-DEQ score of immigrant pregnant women was found to be significantly lower than the Turkish citizens scores ($p < 0.001$). No significant difference was found between multiparous and nulliparous pregnant women ($p = 0.640$). In addition, there was no significant difference in terms of W-DEQ scores among the participants with their second, third and fourth births ($p = 0.106$).

Table 1. Demographic characteristics

Variable		n	%
Age (years)	24 years and under	103	23,2%
	25-29 years	79	8.17%
	30-34 years	91	20.5%
	35 years and over	171	38.5%
Education status	Primary school	195	43.9%
	High school	110	24.8%
	University	70	15.8%
	Master and above	69	15.5%
Previous normal births	0	160	36%
	1	151	34%
	2	48	10.8%
	3	38	8.6%
	4	47	10.6%
Immigration status	Turkish Citizen	395	89%
	Immigrant	49	11%

Table 2. W-DEQ score comparisons by group

	Mean W-DEQ score	Test value	Multiple comparisons
Age			
30 years and under	51(22-104)*	p<0.001	
>30 years	74(23-111)*		
Immigration status			
Turkish Citizen	71(22-111)*	p<0.001	
Immigrant	32(23-99)*		
Education status			
Primary (1)	29(22-35)*	p<0.001	1-2 p<0.001a
Secondary (2)	40.5(30-78)*		2-3 p<0.001 a
High school (3)	72(60-89)*		3-4 p<0.001 a
University (4)	89(76-109)*		4-5 p=0.72 a
College (5)	91(71-111)*		

* Median (minimum, maximum), significant p values are shown in bold; Multiple comparisons performed by the ANOVA test. Posthoc analyses performed by the Tukey test.

In terms of educational status, the difference in the W-DEQ scores was found to be significant ($p < 0.001$). The W-DEQ scores increased as the level of education increased, but there was no difference between a university graduate and post-graduate

pregnant women (Table-2). Those with a W-DEQ score of 85 or above were considered as having a severe fear of childbirth, and this rate was significantly lower in immigrants (Table-3).

Table 3. Comparison Turkish citizens and immigrants regarding severe fear of childbirth

	Participant number	W-DEQ score of 85 or above	%	p values
Turkish Citizen	395	106	26.8%	p<0.001
Immigrants	47	2	4.1%	

Table 4. Education levels by age

	Primary	Secondary	High school	University	Master and above
<30 years	21.5%	29.2%	32.8%	11.3%	5.1%
30 years and above	18.1%	20.5%	18.5%	19.3%	23.7%

While 24.8% ($n = 110$) of all the participants had a low fear of childbirth (those with a W-DEQ score of 37 or less), 21.8% ($n = 97$) of them had a moderate fear of childbirth, 27.9% ($n = 124$) of them had a severe fear of childbirth and 25% ($n = 113$) of them had a very severe fear of childbirth.

DISCUSSION

All pregnant women have a fear of childbirth, albeit at varying levels. However, if this fear reaches a serious level, it has negative effects on mother and infant in many aspects during pregnancy, delivery and after birth. Previous studies have generally investigated the prevalence of birth fear experienced by pregnant women and the factors that may be associated with this fear.

In this study, the relationship between the educational level of pregnant women and fear of birth was investigated. Moreover, the fear of birth for immigrant pregnant women in a foreign country has been investigated. In our study, patients with a previous miscarriage, which is one of the most important factors that may affect fear of childbirth, were not included in the study. Many of the studies concerning fear of childbirth in the literature have been conducted in Scandinavian countries, studies on the fear of childbirth of migrant pregnant women are quite limited, so our study is important in this respect.

Deliktaş et al. reported that the fear of childbirth score was 67.26 ± 4.08 in a meta-analysis of the studies conducted in Turkey, and this result is similar to the result in our study¹⁴. The Koc et al. study involving 100 pregnant women reported that the fear of childbirth score was 77.26 ± 12.35 and the level of education did not affect fear of childbirth¹⁶.

In a study performed in uncomplicated single pregnancies in Thailand, fear of childbirth was found to be 51.9 ± 14.3 , which is lower than in our study¹. High fear of childbirth (WDEQ score ≥ 85) in our study was 24.3%, while it was only 4.5% in an Irish study¹⁷, 21% in a meta-analysis conducted in Turkey, 19.6% in an Iranian study¹⁸ and 20% in two Swedish studies^{19,20}. It may be that the high fear of childbirth rate in the Swedish studies is due to the large number of first pregnancies in those two studies. In general, the fear of childbirth in pregnant women in Turkey is higher than in other countries. Since studies on fear of childbirth were mostly done in western European and Scandinavian countries, it was thought that the fear of childbirth could be higher in women in our country due to socioeconomic differences.

When the variables that affect fear of childbirth were examined, a significant difference was observed between pregnant women under and over 30 years of age. A study conducted in Norway supports our study, stating that the age factor had an impact on fear of childbirth²¹. However, it has been shown in

the literature that age is mostly ineffective on fear of childbirth^{1,22}. In a study conducted on Iranian women in recent years, it was suggested that advanced maternal age may increase fear of childbirth¹⁸. In our study, since the education level was significantly higher in pregnant women over 30 years old, the fear of childbirth was higher in pregnant women over 30 years old, indicating that fear of childbirth increased with education level.

In our study, the WDEQ value of immigrant patients regarding fear of childbirth was 3223-25 and the high fear of childbirth rate was 4.1%. In the two studies conducted in Sweden, unlike our study, this rate was found to be higher (37% and 30%). It was suggested that this high rate could be due to living in a foreign country and the related language problems^{24,25}. In our study, contrary to the literature, the rate of birth fear among migrants is lower. This may be since migrant pregnant women, mostly Syrian victims of war, are going to give birth in a country where there is no war and that they will give birth to their children in a better country in terms of the health system. The high birth rates of migrant women in studies supports the low fear of childbirth.

Another important aspect of our study concerns the relationship between education level and fear of childbirth. Fear of childbirth increases significantly as the level of education increases. In studies conducted in Hungary, Denmark and Finland, the education level was divided into two groups as primary and post-primary education and the difference between them was examined. It was found that the level of fear of childbirth increases as the level of education decreases in all three studies^{10,23,26}. In our research, the relationship between fear of childbirth and the level of education contradicts the literature. The probable reason for this is that the impact of social media and the rate of internet access in our country is higher in educated pregnant women. As a result, educated pregnant women are more knowledgeable about birth complications, are afraid of body deformation and are exposed to visual and written documents referring to traumatic births.

This study has some limitations. Possibly skewed selection of participants may have caused erroneous estimates regarding prevalence. The low number of immigrants is another limitation of our study.

Fear of childbirth is affected by age, education and immigration, but these conditions vary among societies. Pre-determining conditions that increase

fear of childbirth and implementing social support programs in selected patient groups may decrease the fear of childbirth and decrease the rate of increased cesarean sections in our country.

Yazar Katkıları: Çalışma konsepti/Tasarımı: CS, MMI; Veri toplama: CS, MMI; Veri analizi ve yorumlama: CS, MMI; Yazı taslağı: CS, MMI; İçeriğin eleştirel incelenmesi: CS, MMI; Son onay ve sorumluluk: CS, MMI; Teknik ve malzeme desteği: CS, MMI; Süpervizyon: CS, MMI; Fon sağlama (mevcut ise): yok.

Etik Onay: Bu çalışma için Çukurova Üniversitesi Tıp Fakültesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulundan etik onay alınmıştır. (6.3.2020 tarih ve 97/1 sayılı ile).

Hakem Değerlendirmesi: Dış bağımsız.

Çıkar Çatışması: Yazarlar çıkar çatışması beyan etmemişlerdir.

Finansal Destek: Yazarlar finansal destek beyan etmemişlerdir.

Yazarın Notu: İngilizce düzeltmeye katkılarından dolayı Dr. Anita L. Akkas'a (Orta Doğu Teknik Üniversitesi (İngilizce Bölümü) (ret), Ankara, Türkiye) teşekkür eder.

Author Contributions: Concept/Design : CS, MMI; Data acquisition: CS, MMI; Data analysis and interpretation: CS, MMI; Drafting manuscript: CS, MMI; Critical revision of manuscript: CS, MMI; Final approval and accountability: CS, MMI; Technical or material support: CS, MMI; Supervision: CS, MMI; Securing funding (if available): n/a.

Ethical Approval: Ethical approval was obtained from Çukurova University Faculty of Medicine Non-Interventional Clinical Research Ethics Committee for this study. (With the date 6.3.2020 and the number 97/1).

Peer-review: Externally peer-reviewed.

Conflict of Interest: Authors declared no conflict of interest.

Financial Disclosure: Authors declared no financial support

Acknowledgement: The authors would like to thank Dr. Anita L. Akkas (Middle East Technical University (English Department) (ret), Ankara, Turkey) for contributing to the English editing.

REFERENCES

1. Phunymmalee M, Buayaem T, Boriboonhirunsarn D. Fear of childbirth and associated factors among low-risk pregnant women. *J Obstet Gynaecol.* 2019;39:763-7.
2. Wijma K, Wijma B, Zar M. Psychometric aspects of the W-DEQ; a new questionnaire for the measurement of fear of childbirth. *J Psychosom Obstet Gynaecol.* 1998;19:84-97.
3. Ryding EL, Lukasse M, Parys ASV, Wangel AM, Karro H, Kristjansdottir H, et al. Fear of childbirth and risk of cesarean delivery: a cohort study in six European countries. *Birth.* 2015;42:48-55.
4. Toohill J, Fenwick J, Gamble J, Creedy DK, Buist A, Turkstra E et al. A randomized controlled trial of a psycho-education intervention by midwives in reducing childbirth fear in pregnant women. *Birth.* 2014;41:384-94.
5. O'Connell MA, Leahy-Warren P, Khashan AS, Kenny LC, O'Neill SM. Worldwide prevalence of tocophobia in pregnant women: systematic review and meta-analysis. *Acta Obstet Gynecol Scand.* 2017;96:907-20.
6. Fenwick J, Gamble J, Nathan E, Bayes S, Hauck Y. Pre-and postpartum levels of childbirth fear and the relationship to birth outcomes in a cohort of Australian women. *J Clin Nurs.* 2009;18:667-77.
7. Räisänen S, Lehto S, Nielsen H, Gissler M, Kramer M, Heinonen S. Fear of childbirth in nulliparous and

- multiparous women: a population-based analysis of all singleton births in Finland in 1997–2010. *BJOG*. 2014;121:965-70.
8. Rouhe H, Salmela-Aro K, Halmesmäki E, Saisto T. Fear of childbirth according to parity, gestational age, and obstetric history. *BJOG*. 2009;116:67-73.
 9. Saimonka W, Anusornteerakul S, Ungpansattawong S. Factors Related to Fear of Childbirth during the First Stage of Labor. *J Nurs Sci*. 2012;35:34-42.
 10. Saisto T, Salmela-Aro K, Nurmi JE, Halmesmaki E. Psychosocial characteristics of women and their partners fearing vaginal childbirth. *BJOG*. 2001;108:492-8.
 11. Güleç DRÖ, Sevil Ü, Kazandı M. The relationship between fear of birth and perceived social support of pregnant woman. *Türkiye Klinikleri J Gynecol Obst*. 2014;24:36-41.
 12. Fenwick J, Toohill J, Gamble J, Creedy DK, Buist A, Turkstra E et al. Effects of a midwife psycho-education intervention to reduce childbirth fear on women's birth outcomes and postpartum psychological wellbeing. *BMC Pregnancy Childbirth*. 2015;15:284.
 13. Klabbers GA, Wijma K, Paarlberg KM, Emons WH, Vingerhoets AJ. Hypnotherapy as a new intervention for treating fear of childbirth: a randomized controlled trial. *J Psychosom Obstet Gynecol*. 2019;40:38-47.
 14. Deliktas A, Kukul K. Pregnant women in turkey experience severe fear of childbirth: a systematic review and meta-analysis. *J Transcult Nurs*. 2019;30:501-11.
 15. Korukcu O, Kukul K, Firat M. The reliability and validity of the Turkish version of the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) with pregnant women. *J Psychiatr Ment Hlt*. 2012;19:193-202.
 16. Koc AE, Colak S, Colak GV, Pusuroglu M, Hocaoglu C. Investigating fear of childbirth in pregnant women and its relationship between anxiety sensitivity and somatosensory amplification. *J Obstet Gynaecol*. 2020:1-7.
 17. O'Connell MA, Leahy-Warren P, Kenny LC, O'Neill SM, Khashan AS. The prevalence and risk factors of fear of childbirth among pregnant women: A cross-sectional study in Ireland. *Acta Obstet Gynecol Scand*. 2019;98:1014-23.
 18. Mortazavi F, Agah J. Childbirth Fear and Associated Factors in a Sample of Pregnant Iranian Women. *Oman Med J*. 2018;33:497-505.
 19. Nieminen K, Stephansson O, Ryding EL. Women's fear of childbirth and preference for cesarean section—a cross-sectional study at various stages of pregnancy in Sweden. *Acta Obstet Gynecol Scand*. 2009;88:807-13.
 20. Salomonsson B, Bertero C, Alehagen S. Self-efficacy in pregnant women with severe fear of childbirth. *J Obstet Gynecol Neonatal Nurs*. 2013;42:191-202.
 21. Henriksen L, Borgen A, Rislokken J, Lukasse M. Fear of birth: Prevalence, counselling and method of birth at five obstetrical units in Norway. *Women Birth*. 2018.
 22. Khwepeya M, Lee GT, Chen SR, Kuo SY. Childbirth fear and related factors among pregnant and postpartum women in Malawi. *BMC Pregnancy Childbirth*. 2018;18:391.
 23. MoghaddamHosseini V, Makai A, Varga K, Acs P, Premusz V, Varnagy A. Assessing fear of childbirth and its predictors among Hungarian pregnant women using Wijma Delivery Expectancy/Experience Questionnaire subscales. *Psychol Health Med*. 2019;24:879-89.
 24. Ternstrom E, Hildingsson I, Haines H, Rubertsson C. Higher prevalence of childbirth related fear in foreign born pregnant women—findings from a community sample in Sweden. *Midwifery*. 2015;31:445-50.
 25. Waldenstrom U, Hildingsson I, Ryding EL. Antenatal fear of childbirth and its association with subsequent caesarean section and experience of childbirth. *BJOG*. 2006;113:638-46.
 26. Laursen M, Hedegaard M, Johansen C, Danish National Birth C. Fear of childbirth: predictors and temporal changes among nulliparous women in the Danish National Birth Cohort. *BJOG*. 2008;115:354-60.