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## Women's Birth Choice Request Changes in Ten Years: A Single Primary Care Center Experience

Arda Borlu , Fevziye Çetinkaya 

### ABSTRACT

**Objective:** Normal birth is the most cost-effective and healthiest form of birth for mother and baby, but it has become less preferable in recent years. This study has two goals: first, to examine the change in the rate of women's normal birth requests, and second, to examine the changes in factors that may affect this request within a ten-year time period.

**Materials and Methods:** The results of two descriptive cross-sectional researches done in the same primary health care center region in 2007–2008 and 2017–2018 were presented. Data were collected by questionnaire form with face-to-face interviews with women who gave birth in the last year. The chi-square test and t-test were used for statistical comparison.

**Results:** It was observed that women's normal birth request rate decreased. The normal birth request rates of women who were under 25 years, high school graduates, unemployed, and in the middle economic level decreased more than of the others. The rate of women who think that "women who give birth normally get more pain" increased.

**Conclusion:** In a period in which cesarean rates have increased instead of the desired decrease, the rate of women wishing normal birth has decreased. In the ten-year comparison, it was found that women who did not have sociodemographic characteristics associated with cesarean delivery request (high economic status, employed, higher age, university graduate) in previous studies were also shying away from normal birth. Studies should be conducted on women overcoming their concerns about pain during normal birth.

**Keywords:** Delivery; cesarean; normal birth.

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### INTRODUCTION

Normal birth (NB), which has happened for millions of years, has become less preferable in recent years, despite the fact that it is the most cost-effective and healthiest form of birth for mother and baby when there is no special risk. Babies need to be delivered by cesarean delivery (CD) in some situations such as head-pelvis discomfort, baby's postural disturbances, fetal distress, dystocia, big baby, and previous cesarean section. NB can be risky for these cases. The World Health Organization (WHO) has set the highest acceptable CD rate for each world region at 15.0% (1). The fact that this rate has already been exceeded in both developed and developing countries is one of the important subjects of international public health. Turkey is experiencing a fast growth rate for cesarean sections. The CD rate was reported to be 37% in the Turkish Population and Health Survey (TPHS) in 2008 and 48% in the TPHS in 2013 (2). The Turkish Ministry of Health reported the cesarean section rate for Turkey as 54.2% in 2017 (3).

To reduce the rising CD rates, it is important to determine why NB is less preferred over time. Development of anesthesia and surgical techniques and reduction of postoperative complications are well-known reasons, but they are not enough to explain these high rates (4, 5). Mothers' choice is an important determinant for this issue. Mothers must be actively involved with the decision about their ways of delivery, but this decision is often difficult because there are many confusing factors. Pregnant women must be adequately informed by the right sources, to participate in their decision of way to give birth to end with a healthy mother and baby. Many factors affect mothers' choice about their ways of giving birth such as demographic factors, the expectation of childbirth, previous birth experience, and concerns over the health and safety of themselves and their babies (6). In addition, medicalization of life and representation of CD as safer, faster, cleaner, and less painful than NB lead women to CD.

This study was planned by considering that changes in women's NB request rates and related factors over time will shed light on efforts to reduce high cesarean rates. Although some studies in the literature examine the mothers' opinions about the ways of delivery, not many studies examine these opinions' changes by time. The study has two goals. First, to examine the change in the rate of women's NB request during pregnancy, and second, to examine changes in the related factors of this request within ten years.

Department of Public Health,  
Erciyes University Faculty of  
Medicine, Kayseri, Turkey

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**Correspondence**  
Arda Borlu,  
Department of Public Health,  
Erciyes University Faculty of  
Medicine, Kayseri, Turkey  
Phone: +90 352 437 49 10  
e-mail: ardab@erciyes.edu.tr

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**Table 1.** Comparison of characteristics of women who gave birth

	Year of birth				x <sup>2</sup>	p
	2007 (n=408)		2017 (n=650)			
Age at giving birth						
25 years and lower	217	43.4	120	18.5	137.65	<0.001
26–35 years	195	47.8	398	61.2	17.83	<0.001
36 years and above	36	8.8	132	20.3	23.90	<0.001
Education level						
Lower than high school	233	57.1	166	25.5	105.01	<0.001
High school	108	26.5	222	34.2	6.54	0.001
Higher than high school	67	16.4	262	40.3	65.64	<0.001
Working status						
Employed	49	12.0	255	39.2	89.38	<0.001
Unemployed	359	88.0	395	60.8		
Economic status						
Low	22	5.5	22	3.4	2.06	0.151
Moderate	270	66.2	440	67.7	0.20	0.657
High	116	28.4	188	28.9	0.01	0.918
Status of having given birth before						
No	176	43.1	211	32.5	11.86	0.000
Yes	232	56.9	439	67.5		
Previous ways of deliveries (n=232, n=439)						
NB	160	69.0	253	57.6	8.71	0.012
CD	58	25.0	142	32.3		
NB and CD	14	6.0	44	10.0		
Status of living problem at previous birth (n=232, n=439)						
Yes	18	7.8	31	7.1	0.03	0.861
No	214	92.2	408	92.9		

NB: Normal birth; CD: Cesarean delivery; \*Women with past CD and believing they had to do their next births by CD were not included

## MATERIALS and METHODS

These descriptive cross-sectional studies were carried out at Gulduglu Primary Health Care Center region in 2008 and 2018. Gulduglu Health Care Center is located at the center of Kayseri province. The center cared the population of 29,000 in 2007 and 35,000 in 2017. Data were obtained by the researchers in a questionnaire form with face-to-face interviews with women who gave birth in the last year.

The populations of the studies constitute women who were registered in the same primary health care center (PHCC) in Kayseri Provincial Center and who gave birth in the last year. No samples were selected for the studies. All the women who met the criteria were planned to be included in the study (n=409 in 2007, n=672 in 2017).

The Erciyes University Ethics Board approved both studies; and the Kayseri Provincial Health Directorate gave the administrative permits. The questionnaire forms consisted of three parts. In the first part was women's descriptive characteristics; in the second part, women's requests about their ways of giving birth and their obstetric experience; and in the third part, women's opinions about

NB and CD were asked. The survey used in 2008 consisted of 42 questions, and the survey used in 2018 consisted of 36 questions. Questionnaires were given to the women during their applications to the PHCC; those who could not be reached this way were visited at home. Some women could not be reached at the PHCC for various reasons (migration from the region, severe depression). As a result, 408 women (95%) who gave birth in 2007 and 650 women (96.7%) who gave birth in 2017 were interviewed.

Women's status of requesting NB during their pregnancy period compared with women's sociodemographic characteristics and birth experiences by chi-square test and t-test was used to compare the mean age at which women first married and delivered their last birth. P<0.05 was considered to be statistically significant.

## RESULTS

Women's mean age of first marriage (from 20.7±3.5 to 22.3±3.0) and last birth (from 26.9±5.5 to 30.7±5.5) increased from 2007 to 2017 (p<0.05). A comparison of sociodemographic characteristics of the women who gave birth in 2007 and 2017 is shown in Table 1.

**Table 2.** Comparison of women's decisions about their ways of delivery during their pregnancies

	Year of birth						x <sup>2</sup>	p
	2007 (n=336)*			2017 (n=532)*				
	n	n	%	n	n	%		
Status of women having a decision regarding delivery during their pregnancies*								
Had	336*	298	88.7	532	479	90.0	0.99	0.320
Had not	336	42	12.4	532	53	10.0		
Ways of delivery that women want during their pregnancies								
Normal	298	251	84.3	479	347	72.4	13.73	<0.001
Cesarean	298	47	15.8	479	132	27.6		
Status of women getting information about ways of delivery during their pregnancy								
Yes	408	232	56.9	650	607	93.4	201.47	<0.001
No	408	176	43.1	650	43	6.6		

CD: Cesarean delivery; \*Women with past CD and believing they had to do their next births by CD were not included

**Table 3.** Comparison of women's opinions about normal birth

Opinions	Year of birth						x <sup>2</sup>	p
	2007 (n=408)			2017 (n=650)				
	n	n	%	n	n	%		
Normal birth is safer for mother	365	89.5	575	88.5	0.16	0.687		
Normal birth is safer for baby	282	69.1	506	77.8	9.59	0.001		
Women who give birth normally recover faster	356	87.3	593	91.2	3.87	0.049		
Women who give birth normally get more pain	137	33.6	544	83.7	272.28	0.000		

The rate of women requesting NB during pregnancy decreased from 84.3% to 72.4% over ten years (Table 2).

Within ten years, we found a significant increase in the perception that women had more pain during NB (Table 3). In 2007, while the rate of requesting NB was found to be higher among women who were employed and with middle income, there was no relationship between age and education level of women and their rate of wishing for NB (Table 4).

In 2017, it was determined that NB requests decreased with increasing age and increased with increasing education and economic levels. It was also observed that most of the women who changed their decision during pregnancy were the women who wanted NB; and the rate of desiring NB was higher among the women who got information about the types of delivery from health personnel (Table 4).

Considering the change over ten years, it is noticeable that the NB desired rate decreased more among the women who were unemployed, aged 25 years and under, high school level educated, and with moderate income (Table 4).

## DISCUSSION

In this study, ways of deliveries that women want performed during pregnancies and the related factors were compared in the same

region over a ten-year time interval. It was found that the rate of women who were employed, had higher than high school education, and their first marriage age has increased in ten years.

Women's participation in the decision about their ways of delivery is desirable for a healthy birth. It was observed that most women had a decision about their way of delivery, only about 10% were unstable in both years. The rate of instability was reported as 19.7% in women in a study from the UK (7).

In many studies, it was observed that during pregnancy, women prefer NB than CD (7–9). In a study conducted in pregnant Turkish women, 84.1% of them stated that they wanted to give birth normally (10). In accordance with the literature, we found that women were more likely to give birth normally both in 2007 (84.3%) and in 2017 (72.4%), but the rate decreased over ten years.

We thought that comparing women's opinions about NB in ten years could help us to understand why they are changing their mind about NB. In two types of research, most women believed that "NB is safer for mother and baby," and "women who give birth normally recover faster." However, increasing rates of women thinking that "NB is safer for baby" and "women who give birth normally recover faster" have not prevented the decline of NB request in ten years. Although the rates were different in the studies, most women stated that they believed "women who had NB recover more quickly": 91.5% of women in Singapore, 89% in Turkey

**Table 4.** Comparison of NB request status of women who gave birth in 2007 and 2017 according to some of their characteristics

	Years						X <sup>2</sup>	p
	2007			2017				
	Women having decision about their way of delivery		Women who want to give NB	Women having decision about their way of delivery		Women who want to give NB		
	n (298)	N (251)	%	n (479)	N (347)	%		
Age group								
25 and below	139	122	87.8	90	55	61.1	20.63	0.000
26–35 ages	133	108	81.2	275	205	74.5	1.87	0.171
36 and over	26	21	80.8	114	87	76.3	0.05	0.818
	x <sup>2</sup> =2.46	p=0.2918		x <sup>2</sup> =8.20	p=0.0165			
Education level								
Lower than high school	172	147	85.5	119	99	83.2	0.13	0.717
High school	80	68	85.0	159	117	73.6	3.95	0.046
Higher than high school	46	36	78.3	201	131	65.5	2.36	0.124
	X <sup>2</sup> =1.47	p=0.480		X <sup>2</sup> =12.31	p=0.00			
Working status								
Employed	38	27	71.1	186	123	66.1	0.16	0.690
Unemployed	260	224	86.2	293	224	76.5	7.81	0.005
	X <sup>2</sup> =4.61	p=0.031		X <sup>2</sup> =5.57	p=0.018			
Economic status								
Low	14	11	78.6	15	12	80.0	Fisher	0.639
Moderate	200	180	90.0	315	238	75.6	15.76	0.000
High	84	60	71.4	149	97	65.1	0.71	0.398
	X <sup>2</sup> =15.71	p=0.003		X <sup>2</sup> =5.98	p=0.050			
Number of pregnancies								
First	127	107	84.3	187	127	67.9	9.79	0.001
Not first	171	144	84.2	292	220	75.3	4.53	0.033
	x <sup>2</sup> =0.02	p=0.879		x <sup>2</sup> =2.79	p=0.094			
Status of women getting information about ways of information from healthcare professionals								
Yes	137	113	82.4	419	298	71.2	6.33	0.011
No	161	138	85.7	59	30	50.8	27.18	0.000
	x <sup>2</sup> =0.582	p=0.445		x <sup>2</sup> =6.86	p=0.008			
Status of living problem at previous birth (n=148, n=286)								
	n (148)	N (128)	%	n (286)	N (216)	%		
Yes	18	17	94.4	43	31	72.1	Fisher	0.047
No	130	111	85.4	243	185	76.1	4.01	0.045
	Fisher	p=0.468		x <sup>2</sup> =0.14	p=0.707			

NB: Normal birth

(11, 12). Unlike our results, a study in the literature has found that most women believed that “CD was safer for the baby” (13). In our study, an increase in the rate of women thinking “women giving birth normally suffer more from pain” may be an effective factor

in the decreasing of NB wishes. Pain at NB was also appointed as an important factor leading women to CD in the literature (14–18).

There was no difference in the rate of women's NB requests according to their age groups in 2007. Surprisingly in 2017, we

found that the rate of demanding NB increased as age increased because in the literature, advanced maternal age was often associated with increased cesarean rates (19–21). We also found a study in the literature that has a similar result to ours. Young people preferred more CD in a study conducted in Italy (22). In the ten-year comparison, while the desire to give birth normally decreased in all age groups, this decrease was significant among the women under 25 years of age.

We found no relationship between the rate of women wishing NB and their education level in 2007, and the rate of women wishing NB decreased as the level of education increased in 2017. In a review based on the meta-analyses of 41 studies related to CD mother's high level of education and employment were defined as the most effective individual and social factors in the prevalence of CD (23). In two other studies, it was observed that women with higher education levels were more likely to prefer vaginal delivery (21, 24). In ten years, the rate of wishing NB among high school graduated women has decreased. It is known that women with higher education are considered less willing to have NB, we found that high school graduated women are also distancing themselves from NB.

Employed women's rates of wishing NB were lower in both years. However, the rate of wishing NB among unemployed women has also decreased in ten years. Contrast to our result, studies have found that employed pregnant women preferred NB compared to those who were housewives (18, 24). However, in some studies, employed women requested CD more (25, 26).

Since CD is more costly than NB, it can be considered that those with a better income generally prefer it. In a study performed in 2003 in Turkey, it was found that CD is closely related to high income (27). However, this was not the case with our findings. The rate of demanding NB by women with middle income was higher than the others in 2007. After ten years, this rate was found to be decreased. In 2017, women's rate of demanding NB was decreasing as their level of income increased. In a study conducted in Italy, women with low income were more likely to have a cesarean section (22).

There was no difference in the rate of requesting NB with first or subsequent pregnancies in both years. In ten years, NB request decreased in both first and subsequent pregnancies. We have reached different results about this subject in the literature: multiparous women stated that they wanted more CDs in a study conducted in Sweden, while they stated that they wanted more NB in another study in Italy (19, 22). In a cohort study, 2.1%–4.3% of primiparous women and 6.9%–11.9% of multiparous women preferred CD (21). Differences between studies are probably based on differences in the evaluated study groups.

In the literature of many studies, negative birth experience has been described as an important determinant of CD request (16, 17, 19). No relationship was found between women's negative birth experience and NB request in both years of the study. This difference was probably caused by the fact that women with a CD were excluded from the study.

There was no difference in the rate of requesting NB between the women who got or did not get information about ways of delivery

from healthcare professionals in 2007, but in 2017, the rate of requesting NB was higher among the women who got information about ways of delivery from healthcare professionals. Looking at the change over ten years, it was determined that the rate of requesting NB was decreased among both the women who got or did not get information about ways of delivery from healthcare professionals but the decrease in those who did not get information was more common.

## CONCLUSION

Most of the women were worried about pain during NB. Studies should be carried out on women overcoming their concerns about their pain during NB.

In a period in which cesarean rates increased instead of the desired decrease, the rate of women wishing NB decreased. In the comparison of ten years, it was found that women who did not have the sociodemographic characteristics associated with CD request (good economic status, employed, higher age, university graduated) in previous studies also rejected NB.

Women are probably affected by the fact that women with higher social status prefer less common NB and have a negative perception about NB. It is important to consider this situation when giving information and counseling services for pregnant women.

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