



# Breastfeeding experiences of female physicians and the impact of the law change on breastfeeding

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**Cite this article as:** Eren T, Kural B, Yetim A, Boran P, Gökçay G. Breastfeeding experiences of female physician. Turk Pediatri Ars 2018; 53(4): 238-44.

## Abstract

**Aim:** A recent improvement was made on the law regulating maternity leave in 2011 in Turkey. The leave without pay period was increased, the right to stop working on night shifts was granted, and work hours were improved. It is a known fact that returning to work is a barrier against exclusive and total breastfeeding duration. Legal regulations have crucial importance on the ability of working mothers to breastfeed their infants. The aim of this study was to calculate the effect of the improved law on breastfeeding rates among female physicians. Moreover, the difference in the duration of exclusive breastfeeding and total breastfeeding were evaluated in relation to the new law.

**Material and Methods:** Three of the major hospitals in İstanbul were included in the study. A pilot study was planned and our questionnaire was tried. The actual study included 40 female physicians from each hospital. Mothers who went through antenatal or postnatal complications were excluded from the study. Infants who required intensive care after birth or were never breastfed were similarly excluded. A total of 109 female physician resident mothers' questionnaires were included in the study.

**Results:** The effects of the improvement in the law were statistically significant on the duration of maternity leave and improved working hours after returning to work (OR: 2.74 and OR: 2.52). Exclusive breastfeeding rates and total breastfeeding for more than 12 months significantly increased after the new law (OR: 4.47 and OR: 2.56).

**Conclusions:** This study showed that legal improvements did reflect on positive outcomes. There is more to be done, especially with condition of the work places and distributing rights equally to women practicing in surgical disciplines as well. If the physicians can breastfeed after they become mothers, their experience may affect their breastfeeding advocacy and the guidance they will provide for their patients.

**Keywords:** Breastfeeding, physicians, law

## Introduction

Turkey was one of the pioneer countries to acknowledge international lawmaking on workers' rights, acknowledging the International Labour Organisation's (ILO) regulations as early as 1919 (1). Laws regulating maternity leave for female workers were defined as early as 1936. For white-collar professionals, the right to maternity leave was established in the early 1950s (2). However, it was not until 2011 that the law for

white-collar employees was enhanced (3). This new law resulted in several changes. One such change was a revision in their working hours in the first six months after delivery, which allowed them to leave work 3 hours early and in the following sixth months 1.5 hours early. Secondly, as soon as a woman documented her pregnancy, she was withdrawn from night shifts until 24 months after delivery. Moreover, after receiving paid confinement leave of 16 weeks, women could choose unpaid leave for 24 months (3).

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**Received:** 23.03.2018

**Accepted:** 14.08.2018

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DOI: 10.5152/TurkPediatriArs.2017.6497

The fact that returning to work set a barrier to breastfeeding has been stated by many researchers (4). Longer maternity leave has been associated with longer breastfeeding periods (5). The flexibility of working hours and physical conditions at work are important determinants for mothers to continue breastfeeding (6). Nevertheless, even with adequate conditions, the drop out rate is very high in the first year after returning to work (7).

Mothers with administrative and manual occupations were shown to have lower breastfeeding rates than stay-at-home mothers (8). Accordingly, not many female physicians have the means to build positive breastfeeding experiences of their own. According to a study by Miller et al. (9), 80% of resident mothers who were not exclusively breastfeeding by 3 months stated that their work schedule made it impossible to keep up with breastfeeding. Furthermore, the ratio of the resident mothers with successful breastfeeding initiation fell from 80% to 40% with the cessation of the maternity leave (9). Sattari et al. (10) demonstrated that the initiation rates were as high as 97% among physician mothers, but that the breastfeeding rate at 12 months was a mere 34%. Maternal specialty was also stated to be a factor; physicians who practice medical sciences have a higher percentage of breastfeeding than those who practice surgical sciences (11, 12).

Personal experience is a strong predictor for the physician's advocacy of breastfeeding (13). The concept of anticipatory guidance defines the role of a physician in carrying out medical duties and in becoming a role model on the basis of personal experience and implementation (14). This study aims to evaluate the impact of the new law on a group of female physicians.

## Material and Methods

The study group encompassed female physicians working in three major hospitals in Istanbul in August 2014. Only residents with at least one child were included. A pilot study was conducted to construct a questionnaire. The necessary institutional and ethical approvals were obtained at the beginning of the study in accordance with the Helsinki declaration (08/08/2014-13). A written consent form was completed by each participant. Only data for the first-born child were sought to avoid bias that would be caused by mothers being more experienced with subsequent children. Those who had

experienced complications during pregnancy, labor or after delivery were excluded from the study. Physicians whose infants were admitted to the neonatal intensive care unit (NICU) were not included.

A total of 135 resident mother physicians were identified according to the inclusion criteria of the study and 109 female physicians agreed to join the study. The physicians were asked to complete the questionnaires, which asked about their personal experience on breastfeeding and working conditions.

## Statistical Analysis

Number Cruncher Statistical System (NCSS) 2007 and Power Analysis and Sample Size (PASS) 2008 Statistical Software (Utah, USA) programs were used for statistical analysis. Descriptive statistics such as "mean, standard deviation, median, frequency, odds ratio (OR)" were indicated. The Kruskal-Wallis test was applied for parameters without normal distribution such as returning to work and the specialty of the physician. The Mann-Whitney U test was used to determine possible variations due to delivering the baby before or after the improvement in the law, as an intersection of covariates of the different categories such as the breastfeeding period and the specialty of the female physician. Pearson's Chi-square test and Yates's continuity correction were applied in a comparison of the qualitative data for the parameters in relation to the new law. Multivariate analyses were performed to evaluate short breastfeeding periods (for less than four months) in relation to the data about the workplace, colleagues, the old law, and the employer's attitude towards breastfeeding.

## Results

Among the participants, 60.6% were from Internal Medicine (IM) and Pediatrics, 27.5% were from Surgical Sciences, and 11.9% from Basic Sciences. The mean age of the female physicians who became mothers was  $31.6 \pm 4.18$  years. The group of participants consisted of those who had given birth before the new law (81%) and those who had given birth later (28%) (Table 1).

A high proportion of the female physicians (78%) were aware of their legal rights. However, 35.8% of these physicians' continued to work without a revision in their working hours. The infants' mean age when their mothers returned to work was  $4.21 \pm 4.23$  months, and

4.6% of the mothers returned within 45 days after delivery. Almost 36% of the participants returned to work by their own choice and 67% felt bad, upset or guilty in relation to terminating their maternity leave. Expressing milk during working hours was not available for 66% of the subjects (Table 2).

Most of the clinics (81.7%) had no lactation rooms. Although the percentage taking maternity leave was high (88.1%), legal rights such as leaving work 1.5 hours early or working only 4 days per week were accessible to a minority (29.4%). Social support for the working mothers came from colleagues and parents. Many participants defined the attitude from their co-workers as supportive and positive (75.5%) and more than half of them left their children with their grandmothers when they returned to work (50.5%).

Further evaluations performed on the duration of maternity leave and breastfeeding after the amelioration in the law were adjusted using the Mann-Whitney U test taking into consideration the mother’s specialty. The duration of maternity leave was significantly longer for physicians specialized in Internal Medicine and Pediatrics compared with that of surgical sciences specialists (p=0.002) (Table 3). Moreover, the breastfeeding period was significantly longer for Internal Medicine and Pediatrics specialists than for specialists in surgical sciences for both exclusive and total breastfeeding periods (p=0.043 and p=0.024) (Table 3).

After the new law, the maternal leave duration increased (p=0.048), as did the period of total breastfeeding (p=0.016) for physicians in internal medicine and pediatrics. Exclusive breastfeeding period also benefited from a positive effect (p=0.001) (Table 3).

Physicians specialized in surgical medicine did not show a statistically significant finding by means of maternal leave duration or breastfeeding period, total and exclusive (Table 3).

Use of maternity leave and the new law were statistically related (p=0.037) with odds ratio (OR) of 2.74 times (Table 4). Likewise, the relation between the new law and the revised working hours for expressing breast milk was statistically significant (p=0.023) and the OR was 2.52 times higher (95% CI: 1.04-6.11) (Table 4).

The availability of lactation rooms did not reveal a meaningful value in correlation with the new law

**Table 1. Characteristics of the female physicians**

Hospital Name	n (%)
1 <sup>st</sup> Hospital	39 (35.8)
2 <sup>nd</sup> Hospital	35 (32.1)
3 <sup>rd</sup> Hospital	35 (32.1)
Speciality	n (%)
Internal Medicine	66 (60.6)
Surgery	30 (27.5)
Basic Sciences	13 (11.9)
Age at Delivery (year) Mean±SD (min-max)	(23-43) 31.61±4.18
Year of Delivery	n (%)
2011 or before	81 (74.3)
2012 or after	28 (25.7)

**Table 2. Distribution of work related parameters**

Awareness of legal rights; n (%)	85 (78,0)
Revised working hours; n (%)	39 (35,8)
<b>Infant age at returning to work (months);</b> Mean±SD (min-max)	4,21±1,23 (15 d-20 months)
≤4 months	71 (65,7)
4-6 months	15 (13,9)
>6 months	22 (20,4)
<b>Total breastfeeding period:</b> Mean±SD (min-max)	13,66±6,69 (3-36 months)
≤6 months	22 (20,2)
7-12 months	27 (24,8)
≥13 months	60 (55,0)
<b>Reason for returning to work; n (%)</b>	
Financial	20 (18,3)
Employer’s summons	31 (28,4)
Own choice	36 (33,0)
Sense of duty	22 (20,2)
<b>Emotions related to returning work; n (%)</b>	
Good	36 (33,0)
Bad, upset or guilty	73 (67,0)
<b>Expressing milk during work hours; n (%)</b>	37 (33,9)

**Table 3. Before and after 2011; Time of returning work and breast feeding (BF) periods in relation to specialty**

Specialty			Returning to work (months)	Exclusive BF (months)	Total BF (months)
2011 or before	IM&Pediatrics (n=45)	Mean	810	4.50	12.39
		SD	5.76	1.66	6.67
		Median	6	5	12
		Min-Max	1.5 -26	0-6	3-25
	Surgical Sciences (n=24)	Mean	7.75	4.63	13.65
		SD	8.05	1.70	7.98
		Median	4.5	5.25	12.5
		Min-Max	1-36	1 -6	3-36
		p	0.300	0.589	0.579
2012 and after	IM&Pediatrics (n=21)	Mean	9.50	5.79	16.52
		SD	3.12	0.37	5.01
		Median	10	6	18
		Min-Max	5-16	5-6	6-24
	Surgical Sciences (n=6)	Mean	4.92	4.75	10.50
		SD	1.46	1.41	5.28
		Median	5.25	5.25	10
		Min-Max	2.5-6.5	3-6	4-18
		p	0.002 <sup>b</sup>	0.043 <sup>a</sup>	0.024 <sup>a</sup>
IM&Pediatrics (2011 or before 2012 and after)		p	0.048 <sup>a</sup>	0.001 <sup>b</sup>	0.016 <sup>a</sup>
Surgical Sciences (2011 or before 2012 and after)		p	0.917	0.892	0.406

Mann Whitney U test  
<sup>a</sup>p<0.05  
<sup>b</sup>p<0.01  
 BF: breast feeding

**Table 4. Effects of betterment in the Law**

	Before the Law (n=81)	After the Law (n=28)	p	OR (95% CI)
Maternity leave; n (%)	23 (28.4)	14 (50.0)	0.037 <sup>a</sup>	2.740 (1.13-6.62)
Revised working hours; n (%)	24 (29.6)	15 (53.6)	0.023 <sup>a</sup>	2.522 (1.04-6.11)
No lactation room	69 (85.2)	20 (71.4)	0.105	2.300 (0.82-6.40)
Exclusive BF (>4 mo)	52 (64.2)	25 (89.3)	0.023 <sup>a</sup>	4.647 (1.29-16.72)
Exclusive BF (6 mo)	34 (42.0)	17 (60.7)	0.135	2.136 (0.88-5.14)
Total BF (>12 mo)	40 (49.4)	20 (71.4)	0.043 <sup>a</sup>	2.563 (1.01-6.48)

Pearson/Yates Continuity Correction test  
<sup>a</sup>p<0.05

( $p>0.05$ ). Exclusive breastfeeding for longer than four months and total breastfeeding for longer than 12 months showed an apparent increase with the application of the new law (OR: 4.340 and OR: 2.927, consecutively). Exclusive breastfeeding for the first 6 months was not found to be statistically meaningful ( $p>0.05$ ), but the increase in the value should be noted.

## Discussion

Breastfeeding is the basis for a child's health and development. It is recommended by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) that newborns are exclusively breastfed for the first six months of life (15). Extended breastfeeding is recommended until 24 months of age. As for Turkey, breastfeeding is very common, but exclusive breastfeeding rates decreased by 10% from 2008 to 2013 (16). After the birth, the physician mothers in Istanbul were faced with many challenges related with breastfeeding. The data show that most of them returned to work before 4 months postpartum and the same proportion described their emotions as being upset or filled with guilt. These were similar findings to those in the current literature (17, 18). The short duration of maternity leave, compromised conditions for expressing milk and/or long working hours that separated the babies from their mothers for long hours create the risk that breastfeeding will have to be curtailed too soon.

After they were granted improved rights in 2011, female physicians, in particular those working outside of the surgical sciences, returned to work later. The exclusive and total breastfeeding periods were prolonged. Being exempted without loss of seniority from night shifts for a total of 24 months after delivery, with extended paid hours off work for a year, a paid leave period set at 16 weeks and an unpaid leave possible for up to 24 months all seem to have paid off. Even though the number of physicians that became mothers after the new law is limited, the results are suggestive in the direction that the new law had some effect.

Improvements were reflected in the findings. Revisions to allow working time in which to express milk and prolonged maternal leave resulted in higher rates for both after 2011. Public policies that ameliorate employment conditions improve the duration of breastfeeding, as shown by previous studies (19, 20).

An issue that needs further attention according to the findings of the study was that in spite of the better conditions brought by the law, specialists in the surgical sciences were still faced with shorter periods of maternity leave, no revision of working hours to allow time to express milk, and no advantage taken of the paid hours off work that should have been available. This may be due to the limited number of physicians in the group. It may also be the result of the strenuous nature of the surgical specialties. The mother's specialty was reported in various studies to be a risk factor for breastfeeding duration (21, 22). The factors affecting the breastfeeding duration of the physicians in the surgical sciences could be a subject for further research, preferably with a larger sample size.

Furthermore, in spite of the new law, many clinics and hospitals were not yet equipped with lactation rooms. A working environment providing support for continued breastfeeding should also support the expression of milk (23). In our study, only one of the hospitals had a daycare unit to keep the babies near the nursing mothers. Childcare and lactation facilities in the workplace or even leaving work early to feed the baby rather than expressing are known to have a positive effect on the breastfeeding duration of a working woman (24, 25). In the future, new regulations addressing this issue may be included in the maternity law.

Turkey has been very deeply involved with policies concerning the benefits of breastfeeding and these benefits are well established (16, 26). When a law is about breastfeeding, its effects are even more marked because the results involve mothers, children, and society in general. Bringing in obligatory measures for employers to protract maternity paid leave and making sure that female surgeons benefit, like their counterparts in the internal medical sciences, should all be considered by the government.

Making changes through policy for the entire country is a big step. However, its positive implications are not complete unless the outcomes are brought to life in practice. Follow-up is essential in particular for women whose work is very demanding and for whom liability is an issue. Female physicians stand out in this sense because any improvement in their employment conditions is reflected in their families and also in their patients' families. A female physician's advocacy of breastfeeding can only get stronger with satisfactory personal

experience. Her anticipatory guidance will inspire all those that she is in touch with while personal memories may promote breastfeeding, already a subject of importance for our culture.

### Limitations

This study may be considered as preliminary in the sense that the group size of the physicians that became mothers from 2012 onwards was smaller than the counterpart. Due to the positive findings, the subject may be reconsidered with a larger group.

**Ethics Committee Approval:** Ethics committee approval was received for this study from the Ethics Committee of İstanbul University İstanbul School of Medicine (08/08/2014-13).

**Informed Consent:** Written informed consents were obtained from patients who participated in this study.

**Peer-review:** Externally peer-reviewed.

**Author Contributions:** Concept - T.E., P.B., B.K.; Design - T.E.; Supervision - B.K., A.Y.; Data Collection and/or Processing - A.Y., B.K.; Analysis and/or Interpretation - T.E.; Literature Review - P.B.; Writing - T.E.; Critical Review - G.G.

**Conflict of Interest:** The authors have no conflicts of interest to declare.

**Financial Disclosure:** The authors declared that this study has received no financial support.

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