

## **Breastfeeding Duration in Mothers Returning to Employment in Greece**

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### **Abstract**

Breast milk benefits are many and not only for the neonatal and infancy but cover the protection of maternal health and family welfare. Breast milk is a unique treasure of life, health and wellbeing of the child, mother, family and society in general. The purpose of this study was to investigate working mother's return to work influence on duration breastfeeding. This descriptive study was conducted in Greece during 2012. The population of the study consisted of the 645 Greek women (n=508) and non Greek (n=136) who reside in Greece. The data were collected using a questionnaire form developed by the researcher consisting of 48 variables. 67.3% of the questionnaire participants were employees. 68.8% of participants took pregnancy leave, 5.1% unpaid leave and 24.6% worked part time. 10.5% of participants worked in facilities that accommodated a private area and/or specific time slots to facilitate breastfeeding mothers to collect their milk during their working hours. It was found that employees participate exclusively breastfed for significantly longer (4 months / average  $6,1 \pm 6,9$ ) than those who were not working (3 months /  $5 \pm 6,7$ ). The participants who took pregnancy leave, unpaid leave and those working part-time exclusively breastfed for five months, three months and three months respectively. Also, participants who worked in a place no special place or specific time to facilitate breastfeeding mothers to collect milk during working hours to breastfeed exclusively for significantly longer (5 months) compared with participants working without specific time or in a place where there was this possibility (3 months). Breastfeeding is more likely to be maintained as late mother returned to work or work part time. It is very important to promote breastfeeding, provide maternity leave be given to mothers who return to work opportunities and facilities for smooth adjustment.

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**Keywords:** Breastfeeding duration, exclusively breastfed, employees

## 1 Introduction

Many mothers believe that breastfeeding and work are incompatible. One of the most common causes to which they attach mothers discontinue breastfeeding is that mothers must return to work. The information of the mother and the position of the society towards the working mother who is breastfeeding is a very important factor for this purpose. While the number of new mothers at work increases, early return to work discourages women from breastfeeding or causes to interrupt early. Current guidelines and recommendations of the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) strongly encourage facilities to be provided and the ability to smoothly adapt to mothers returning to work. There are ways of combining the two, so that mothers can fulfill their roles as productive and reproductive members of society, without sacrificing a role for the sake of another [1].

It is generally assumed that the rates and breastfeeding practices do not meet the recommendations of the WHO and UNICEF. Also, the objectives and recommendations proposed by the national health policy programs and scientific associations have not been performed. In some countries, initiation rates of breastfeeding is very low. Moreover, in countries where initiation rates are high, there is a significant decline in breastfeeding in the first six months. The rate of exclusive breastfeeding at six months is low throughout Europe apart from the Scandinavian countries [2,3,17].

Modern living where the pace of life is very fast, long working hours, minimal leisure programs and people distant from nature is not conducive to the promotion of breastfeeding. Moreover, the situation is exacerbated in a society with lack of breastfeeding culture, where for decades the majority of women do not breastfeed, there is lack of breastfeeding support centers, qualified staff in nursing and legislation supporting breastfeeding mothers while not applying the relevant provisions of the International Code on Marketing of milk [4].

The factors that enable women to breastfeed in the workplace is allowing time for breastfeeding or milk export during working hours and a clean, quiet and accessible place for breastfeeding. In addition a general attitude in the business or facility that encourages breastfeeding. The policy of protection of motherhood provides a supportive framework. This can include job retention postpartum, providing paid leave after childbirth, break-paid childcare, childcare facilities at the workplace or in nearby places, protection from discrimination and flexible part-time programs for parents [5]. On a broader level, the promotion of breastfeeding is associated with factors such as the particular legislation regarding maternity leave, maternity leave and the existing health system, social practices and information to raise awareness of the benefits of breastfeeding, as well as practical production, marketing, distribution and advertising of breastmilk substitutes [6,7].

The purpose of this study was to investigate the work, social, economic factors that impact on breastfeeding.

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to squeeze more text into a limited number of pages.

## **2 Subjects and Method**

It is a non-experimental cross-sectional study conducted in Athens in April 2012, with a duration of six months. The study sample consisted of 645 Greek women ( $n = 508$ ) and non-Greek women ( $n = 136$ ) living in Greece over two years. They were selected by convenience sampling (imports in the hospital and mothers whose children were enrolled in nurseries). The 104 (16.1%) women in the sample had just given birth and were located in the hospital and the remaining 541 (83.9%) had recently given birth but under two years ago. We developed a questionnaire in which the design offered the possibility to evaluate the reliability and validity through the audit process-retest group of experts in two rounds following the method of Delphi. The questionnaire consisted of 48 variables divided into 8 parts and axes and then conducted a pilot study on a sample of 30 mothers who had similar characteristics with the characteristics of those who were to be included in the final sample. To compare the proportions we used Pearson's  $\chi^2$  test or Fisher's exact test where appropriate. For controlling the type I error, due to multiple comparisons, using the Bonferroni correction whereby the level of significance was  $0.05 / n$  ( $n =$  number of comparisons).

### **2.1 Statistical Analysis**

Normal distributed variables are expressed as mean  $\pm$  standard deviation; while variables with skewed distribution are expressed as median (interquartile range). Qualitative variables were expressed as absolute and relative frequencies. Mann-Whitney test was used to compare the duration of breastfeeding between two groups. In order to find independently associated factors with duration of exclusive breastfeeding multiple linear regression analysis was performed in a stepwise method ( $p$  for entry 0.05,  $p$  for removal 0.10) with dependent variable the duration of the exclusive breastfeeding. Adjusted regression coefficients ( $\beta$ ) with their standard errors (SE) were computed from the results of the linear regression analyses. Diagnostics for regression models were performed to check if the conditions for regression had been met with the residuals of each model being normally distributed and their variance being constant. Logistic regression analysis in a stepwise method ( $p$  for entry 0.05,  $p$  for removal 0.10) was used in order to find independent factors associated with exclusive breastfeeding. Adjusted odds ratios (OR) with 95% confidence intervals (95% CI) were computed from the results of the logistic regression analyses. Hypothesized interactions of variables in the models were not significant. All reported  $p$  values are two-tailed. Statistical significance was set at  $p < 0.05$  and analyses were conducted using SPSS statistical software (version 19.0).

## **3 Main Results**

Sample consisted of 645 women and their demographic characteristics are presented in table 1. Mean age was 32.4 years old ( $SD=5.3$  years). Most participants were married with the percentage being 93.8%. Moreover, 78.9% of the women were Greek and 87.6% were orthodox Christians. Also, 77.0% of the participants lived in urban territory. The majority

of the participants (36.0%) had graduated from the university. Median number of participants' children was 2 (IQR: 1-2). Additionally, 32.6% of the participants smoked. More than half of the participants (57.5%) had a vaginal delivery. More than half of the women (61.2%) had been informed about breastfeeding prior to delivery. 47.3% of them had been informed from a midwife, 21.3% from an obstetrician and 10.9% from a nurse. Approximately 40.0% of the participants were very much affected by this information for starting and continuing breastfeeding. The decision of breastfeeding was made prior to the labor by the 88.6% of the participants. Exclusive breastfeeding was done by 70.9% of the women enrolled in the study. Median duration of exclusive breastfeeding was 6 months (IQR: 3 - 10.5 months). Also, 37.9% of the participants faced difficulties when they started breastfeeding. The mean duration of breastfeeding was 4.4 (5.6) with median equal to 2 (IQR: 0-6) for Greek women and 9.1 (9.2) with median equal to 8 (IQR: 1 - 13) for other nationalities ( $p < 0.001$ ). As far as it concerns the reasons for stopping exclusive breastfeeding, 43.9% of the women declared that the milk was not enough, 34.2% that the duration was satisfactory and there was no need for further breastfeeding, 16.1% because they had to return to their job, 11.5% because of fatigue, stress or depression and 2.2% because of hospitalization of the newborn.

These are the main results of the paper.

Sections and subsections should be numbered as 1, 2, etc. and 1.1, 1.2, 2.1, 2.2 respectively.

Capital letters should be used for the initial letter of each noun and adjective in the section titles, the section should be formatted as left, bold, times new roman, and 15pt font size. For subsection (left, bold, times new roman, and 14pt), the initial letter of first word should be capitalized. And also similarly for other sub-subsections (left, bold, times new roman, and 12pt).

Table 1: Demographics and breastfeeding characteristics

	N (%)
Age, mean (SD)	32.4 (5.3)
Family status	
Married	604 (93.8)
Divorced	30 (4.7)
Single	7 (1.1)
Widow	3 (0.5)
Nationality	
Greek	508 (78.9)
Other	136 (21.1)
Religion	
Orthodox christian	565 (87.6)
Katholic christian	22 (3.4)
Muslim	44 (6.8)
Other	14 (2.2)
Residence	
Urban	491 (77)
Semi-urban	88 (13.8)
Rural	59 (9.2)
Educational level	
Illiterate	25 (3.9)

Primary	30 (4.7)
Middle school	43 (6.7)
High school	246 (38.4)
University	231 (36)
Master/ Doctoral	66 (10.3)
Number of children, median (IQR)	(2 (1-2))
Smoking	
No	435 (67.4)
Yes	210 (32.6)
Delivery	
Vaginal	365 (57.5)
Caesarian section	270 (42.5)
Informed about maternal breastfeeding prior to labor	
No	250 (38.8)
Yes	394 (61.2)
If yes, were you affected for starting and continuing breastfeeding	
Very much	157 (40.3)
Enough	152 (39)
A little	61 (15.6)
Not at all	20 (5.1)
The decision for breastfeeding was made	
Before labor	565 (88.6)
After labor	73 (11.4)
Breastfeeding initiation	
Few minutes after labor	65 (10.4)
Half hour after labor	133 (21.2)
Other	428 (68.4)
Exclusive breastfeeding	
No	185 (29.1)
Yes	451 (70.9)
Duration of exclusive breastfeeding (months), median (IQR)	6 (3 - 10.5)
Duration of exclusive breastfeeding (months)	
None	194 (30.1)
<=1	52 (8.2)
1,1-3	97 (15)
3,1-6	107 (16.6)
>6	195 (30.2)
Breastfeeding with natural way	
No	49 (7.7)
Yes	587 (92.3)
Difficulties at breastfeeding initiation	
No	394 (62.1)
Yes	240 (37.9)

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In the study sample, 67.3% of participants work during their pregnancy and in particular 43.7% of those in the private sector and 42.3% in public. The 68.8% of participants took pregnancy leave, the maternity leave 66.4% and 30.3% leave sick. Also, 39.1% of participants took child-care leave, 5.1% unpaid leave and 24.6% of the participants worked part time. 10.5% of participants worked in facilities that had special places or special opening to facilitate breastfeeding mothers to collect milk during working hours (Table 2).

Table 2: Labor of participating

		N	%
Worked during the previous pregnancy?	No	210	32,7
	Yes	432	67,3
Did you leave your job during the previous pregnancy your child?			
Leave pregnancy / childbirth	No	159	31,2
	Yes	350	68,8
Duration (months), mean $\pm$ SD Median		2,8 $\pm$ 2,1	2 (2 - 2)
maternity leave	No	170	33,6
	Yes	336	66,4
Duration (months), mean $\pm$ SD Median		2,7 $\pm$ 1,6	2 (2 - 3)
Leave Sick	No	350	69,7
	Yes	152	30,3
Duration (months), mean $\pm$ SD Median		4,2 $\pm$ 2,3	4 (2 - 6)
maternity	No	304	60,9
	Yes	195	39,1
Duration (months), mean $\pm$ SD Median		7,7 $\pm$ 2,1	9 (6 - 9)
Part-time work	No	374	75,4
	Yes	122	24,6
Duration (months), mean $\pm$ SD Median		18,8 $\pm$ 14,3	12 (6,5 - 24)
Unpaid leave	No	468	94,9
	Yes	25	5,1
Duration (months), mean $\pm$ SD Median		6,3 $\pm$ 4,2	6,5 (3 - 10)
Your work has special areas or special opening to facilitate breastfeeding mothers to collect their milk during their working hours?	No	433	89,5
	Yes	51	10,5

When multiple logistic regression analysis was conducted (table 3), in a stepwise method, with dependent variable the exclusive breastfeeding it was found that nationality, having been informed about maternal breastfeeding from nurse and breastfeeding with natural way were independent predictors. Specifically, non-Greek women had 8.77 times greater odds for having exclusive breastfeeding. Also, the likelihood for exclusive breastfeeding

was greater when women had been informed about by a nurse and when the breastfeeding was done in natural way.

Linear regression analysis results with duration of exclusive breastfeeding as dependent variable are shown in table 4. Nationality, educational level, type of delivery, having take the decision to breastfed prior to delivery, difficulties at breastfeeding initiation, having fatigue, stress or depression, and hospitalization in Neonatal Intensive Care Unit were independently associated with duration of exclusive breastfeeding. Non- Greek women had greater duration of exclusive breastfeeding, while high educational level, having caesarean section, having decided to breastfed after the delivery, having difficulties at breastfeeding initiation, having fatigue/ stress/ depression after birth, and hospitalization in Neonatal Intensive Care Unit were associated with lower duration of exclusive breastfeeding.

Table 3: Multiple logistic regression analysis results with exclusive breastfeeding as dependent variable using the stepwise method

	OR (95% CI) <sup>‡</sup>	P
Nationality		
Greek	1.00*	
Other	8.77 (2.65 – 29.07)	<0.001
Informed about maternal breastfeeding from nurse		
No	1	
Yes	4.47 (1.49 – 13.39)	0.007
Breastfeeding with natural way		
No	1	
Yes	4.95 (2.06 – 11.92)	<0.001

<sup>‡</sup>Odds Ratio (95% Confidence interval) \*indicates reference category

Table 4: Results from multiple linear regression analysis with duration of exclusive breastfeeding as dependent variable using the stepwise method

	$\beta$ (SE) <sup>‡</sup>	P
Nationality		
Greek	0.00*	
Other	0.22 (0.05)	<0.001
Educational level		
At most middle school	0.00	
High school	-0.15 (0.06)	0.006
University/ Master/ Doctoral	-0.12 (0.06)	0.033
Delivery		
Vaginal	0.00	
Caesarian section	-0.13 (0.04)	<0.001
The decision for breastfeeding was made		
Before delivery	0.00	
After delivery	-0.20 (0.06)	<0.001
Difficulties at breastfeeding initiation		
No	0.00	
Yes	-0.12 (0.04)	0.002
Fatigue/ stress/ depression		
No	0.00	
Yes	-0.13 (0.05)	0.018
Hospitalization in Neonatal Intensive Care Unit		
No	0.00	
Yes	-0.31 (0.13)	0.015

<sup>‡</sup>regression coefficient (Standard Error) \*indicates reference category

Also, 39.1% of participants took child-care leave, 5.1% unpaid leave and 24.6% of the participants worked part time. 10.5% of participants work in facilities that are special places or special opening to facilitate breastfeeding mothers to collect milk during working hours. Specifically, participants who took pregnancy leave breastfed for five months, those who took maternity leave breastfed for four months and those who took sick leave breastfed for 3 months. Also, participants who worked in a place with no special features or special opening to facilitate breastfeeding mothers to collect milk during working hours to breastfed for 5 months (Table 5).



Table 5: Duration of exclusive breastfeeding participating depending on their job details

		Duration of exclusive breastfeeding (months)		P Mann-Whitney
		Mean $\pm$ SD	median	
Worked during the previous pregnancy?	No	5 $\pm$ 6,7	3 (0 - 7)	0,018
	Yes	6,1 $\pm$ 6,9	4 (0 - 9)	
Did you leave your job during the previous pregnancy your child?				
Leave pregnancy / childbirth	No	4,2 $\pm$ 5,6	2 (0 - 6)	<0,001
	Yes	7,2 $\pm$ 8,6	5 (1 - 10)	
Maternity leave	No	4,4 $\pm$ 5,8	2,5 (0 - 6)	0,004
	Yes	6,6 $\pm$ 8,3	4 (0,1 - 9)	
Sick leave	No	4,2 $\pm$ 5,6	2 (0 - 6)	0,044
	Yes	5,6 $\pm$ 7,3	3 (0 - 8)	
maternity	No	5,4 $\pm$ 7,3	3 (0 - 8)	0,731
	Yes	4,8 $\pm$ 5,9	3 (0 - 7)	
Part-time work	No	5,5 $\pm$ 7,2	3 (0 - 8)	0,207
	Yes	4,2 $\pm$ 5,4	3 (0 - 6)	
Unpaid leave	No	5,2 $\pm$ 6,9	3 (0 - 7)	0,863
	Yes	5,1 $\pm$ 6,6	3 (1 - 6)	
Your work has special areas or special opening to facilitate breastfeeding mothers to collect their milk during their working hours?	No	5 $\pm$ 6,8	3 (0 - 7)	0,030
	Yes	5,9 $\pm$ 5,3	5 (1,5 - 9)	

66.2% of participants who had taken pregnancy leave exclusively breastfed, percentage of 67.5% of participants who had taken maternity leave exclusively breastfed, and 63.3% of participants who had taken sick leave breastfeed exclusively. Very high percentage 82.4% of participants whose work has special areas or special opening to facilitate breastfeeding mothers to collect their milk during the hours applied to exclusive breastfeeding (Table 6).

Table 6: Rates of exclusive breastfeeding participating depending on their job details

		exclusive breastfeeding				P Pearson's x <sup>2</sup> test
		No		Yes		
		N	%	N	%	
Worked during the previous pregnancy?	No	52	25,4	153	74,6	0,108
	Yes	133	31,1	295	68,9	
Did you leave your job during the previous pregnancy your child?						
Leave pregnancy / childbirth	No	117	33,8	229	66,2	0,001
	Yes	31	19,9	125	80,1	
maternity leave	No	108	32,5	224	67,5	0,024
	Yes	39	23,4	128	76,6	
leave Sick	No	55	36,7	95	63,3	0,021
	Yes	92	26,7	253	73,3	
Maternity	No	86	28,7	214	71,3	0,512
	Yes	60	31,1	133	68,9	
Part-time work	No	107	28,8	264	71,2	0,599
	Yes	37	31,1	82	68,9	
Unpaid leave	No	138	29,9	324	70,1	0,301
	Yes	5	20,0	20	80,0	
Your work has special areas or special opening to facilitate breastfeeding mothers to collect their milk during their working hours?	No	134	31,4	293	68,6	0,043
	Yes	9	17,6	42	82,4	

## 5 Discussion

This study found that workers participating exclusively breastfed for significantly longer (4 months / average  $6,1 \pm 6,9$ ) than those who were not working (3 months / average  $5 \pm 6,7$ ). We also found a significant positive correlation as participants who took pregnancy leave (5 months), postpartum (4 months) or sick (3 months) exclusively breastfed for significantly longer compared with participants who did not get one of these licenses. Participating in working party are special areas and particularly special opening to facilitate breastfeeding mothers to collect milk during working hours to breastfeed exclusively for significantly longer (5 months) compared with participants working in part that there was this possibility (3 months). Finally, the Greeks believed in a significantly higher percentage that mothers who stopped breastfeeding due to return to work would continue breastfeeding if facilitated compared with non-Greeks. The maternity and employment facilities is obvious that advocate the protection and breastfeeding [8, 14,16]. In a study of Gilmour et al. (2013) three themes, proximity, flexibility, and communication, were identified relating to the factors impacting on women and their choices to breastfeed or wean on returning to work [10, 11]. Similar results were found in a study of Ahmadi & Moosavi (2013) where the rate of formula use was significantly

higher in mothers who had less than 6 months of maternity leave, those who did not have a suitable nursery or place to milk themselves and preserve the milk in their workplace, those working more than 6 hours per day, and those who could not take a breastfeeding break [9, 12].

Participants were given permission pregnancy, childbirth or sick breastfed exclusively at a significantly higher rate compared to participants who had not received such authorization. Participating whose work has special areas or special opening to facilitate breastfeeding mothers to collect milk during working hours to breastfeed exclusively at a significantly higher rate compared to participants whose work had no such space. In a similar study of Cooklin et al. (2008) examined the impact of the mother's return to work during exclusive breastfeeding at 3 and 6 months. The results showed that only 39% of mothers who worked breastfeed their children, while 56% of mothers who were not working breastfeed their children. The return of the mother that the work associated with early cessation of breastfeeding [13].

## 6 Conclusion

Investigating rates of breastfeeding among working women concludes that maternity leave and flexible working conditions have a positive impact on the duration of breastfeeding [18]. While the number of new mothers at work increases, an early return to work discourages women from breastfeeding or causes them to interrupt early. It is very important to promote breastfeeding, provide maternity leave in the private and public sector for at least three to six months. To provide facilities and opportunities for a smooth adjustment for mothers returning to work. Breastfeeding is more likely to be maintained as slowly returning to work mother. Working and Breastfeeding can be combined with appropriate planning, patience and perseverance. The benefits to the working mother and the child are many.

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