

## Factors associated with breastfeeding abandonment in the first month after the mother's return to work

Fatores associados ao abandono do aleitamento materno no primeiro mês após o retorno da lactante ao trabalho

Monique Schorn (<https://orcid.org/0000-0002-0258-5052>)<sup>1</sup>

Michele Saraiva Mendes (<https://orcid.org/0000-0002-3240-4339>)<sup>1</sup>

Elsa R J Giugliani (<https://orcid.org/0000-0001-6569-6473>)<sup>1</sup>

**Abstract** *The return to work of lactating mothers has been identified as an important risk factor for breastfeeding interruption. We proposed to identify factors associated with breastfeeding abandonment in the first month after return. 252 women working at a hospital who had children aged 12 to 36 months and who were still breastfeeding when returned to work answered a questionnaire containing questions on sociodemographic characteristics, pregnancy, childbirth, breastfeeding and work-related factors. The associations were estimated using adjusted prevalence ratio (aPR), calculated with the hierarchical Poisson multivariable regression model. The following factors showed a significant association with breastfeeding abandonment: using a pacifier (aPR 4.58), cohabiting with someone other than partner (aPR 3.77), having no intention or having doubts about maintaining breastfeeding after returning (aPR 3.39), having a college degree (aPR 2.66), having no support from the infant's caregiver (aPR 2.26), and infant being older when the woman returned to work (PR 1.16 for each additional month of infant age). Longer duration of exclusive breastfeeding was a protective factor (aPR 0.990). Most of the factors associated with discontinuation of breastfeeding in the first month after the mother's return to work are not directly related to the woman's work.*

**Key words** *Breastfeeding, Female worker*

**Resumo** *O retorno da lactante ao trabalho é apontado como importante fator de risco para interrupção da amamentação. Nós nos propusemos a identificar fatores associados ao abandono da amamentação no primeiro mês após o retorno. Compuseram a amostra 252 servidoras de um hospital com filhos entre 12 e 36 meses e que estavam amamentando quando retornaram ao trabalho, fornecendo informações sobre características sociodemográficas, gestação, parto, amamentação e fatores relacionados ao trabalho. As associações foram estimadas pela razão de prevalência ajustada (RPa), obtida usando modelo hierárquico de regressão multivariada de Poisson. Os seguintes fatores mostraram associação significativa com abandono da amamentação: uso de chupeta (RPa 4,58), coabitação com outra pessoa que não o companheiro (RPa 3,77), não ter intenção ou ter dúvidas sobre amamentar após retorno (RPa 3,39), ter curso superior (RPa 2,66), não ter apoio do cuidador da criança (RPa 2,26) e maior idade da criança quando a mãe retornou ao trabalho (RPa 1,16 para cada mês de idade a mais da criança). Maior duração da amamentação exclusiva foi fator de proteção (RPa 0,990). A maioria dos fatores associados à descontinuidade da amamentação no primeiro mês após retorno da lactante ao trabalho não está diretamente relacionada ao seu trabalho.*

**Palavras-chave** *Aleitamento materno, Mulher trabalhadora*

<sup>1</sup> Departamento de  
Pediatria, Faculdade de  
Medicina, Universidade  
Federal do Rio Grande do  
Sul. R. Ramiro Barcelos  
2400, Santa Cecília. 90035-  
003 Porto Alegre RS Brasil.  
mo\_schorn@yahoo.com.br

## Introduction

The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life of the infant, and any breastfeeding for two years or more<sup>1</sup>. Even though the numerous benefits of breastfeeding are well established<sup>2</sup>, most infants worldwide, including in Brazil, are not breastfed according to the WHO recommendation, and thus are deprived of those potential benefits<sup>3</sup>.

Several factors are implicated in the currently observed prevalence rates of breastfeeding. Such factors can be structural, contextual, and/or individual in nature<sup>4</sup>. One among the contextual factors is maternal employment. Studies conducted in different countries have reported a negative effect of maternal work on the prevalence rates of both any breastfeeding and exclusive breastfeeding<sup>5-7</sup>. In Brazil, a nationwide study observed a lower frequency of exclusive breastfeeding in infants younger than six months among employed mothers (26%) when compared with mothers who did not work outside the home (43.9%), or with those on maternity leave (53.4%). The same phenomenon was observed in that study with regard to the frequency of breastfeeding in infants younger than 1 year: 65.9, 81.2, and 91.4%, respectively<sup>8</sup>.

In order to tackle the early abandonment of breastfeeding caused by maternal work, one must be aware of the work-related factors that either facilitate or hinder this practice. Currently, the main favorable known factors are the following: having flexible work schedules; having an appropriate place for the expression and storage of human milk; receiving support from work colleagues and management; having partial or reduced working hours; daycare/nurseries offered by the company; extended maternity leave; lower-rank maternal education level/job title; and maternal knowledge of women's rights related to breastfeeding<sup>9-12</sup>.

The scarcity of research on breastfeeding among working mothers in Brazil, in particular on the factors that contribute to or hinder the continuation of breastfeeding once the mother returns to work, has motivated the conduction of the present study. The objective was to investigate the factors associated with abandonment of breastfeeding in the first month after the mother's return to work, with emphasis on the work-related factors.

## Methods

This cross-sectional study was conducted between June 2016 and July 2017 with women working at a university general hospital. Women were selected if they had singleton live biological infants aged between 12 and 36 months who were born over the course of their current work contract with the institution, and if they maintained breastfeeding until the time they had to return to work.

The hospital where the study was carried out has around 6,000 employees, mostly females in reproductive age. In addition to being accredited with the Baby Friendly Hospital Initiative since 1997, the institution offers the following benefits related to maternity/breastfeeding: maternity leave of 180 days; reduction of half an hour per 6-hour shift (alternatively 1 hour per day) to support breastfeeding until the infant is 1 year old; human milk bank; lactation consulting services offered by qualified employees; hotline to clarify doubts about and support breastfeeding; availability of a daycare/nursery near the institution.

The list of female workers who were eligible for the study was supplied by the hospital's human resources department. Eligible women were contacted via telephone, e-mail or via social media and then invited to participate. Interviews lasted for approximately 30 minutes, were conducted in the hospital premises, and followed a standardized questionnaire developed specifically for the collection of sociodemographic data, data related to pregnancy, delivery, and breastfeeding, in addition to questions related directly to the mother's work. The data were collected by three health professionals with higher education.

Sample size was calculated *a posteriori* using the Programs for Epidemiologists for Windows (WinPEPI) version 11.43. With a total of 252 participants, a prevalence of 13% of weaning in the first month after the mother's return to work, and a minimum prevalence ratio of 2.16, the power of the study was 80%.

Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 23. Quantitative variables were described as median and standard deviation or median and interquartile range, and categorial variables were described as absolute and relative frequencies.

For the identification of the factors associated with the outcome, defined as breastfeeding interruption within 1 month after the mother's return to work, we employed a hierarchical regression model<sup>13</sup> in which the variables commonly asso-

ciated with breastfeeding duration in the literature were grouped into different levels following a causal order and also taking into consideration their proximity with the outcome<sup>14</sup>. As a result, the distal level included variables with a more distant relationship with the outcome, namely, sociodemographic variables; the intermediate level encompassed variables related to prenatal care and delivery; finally, the proximal level included variables related to the immediate postpartum period, period from discharge from the maternity ward until return to work, as well as variables related to the mother's work.

First, Poisson univariable regression was used to estimate the association between the outcome and the variables included in each level. All the variables reaching  $p < 0.20$  in this analysis were subsequently included in the Poisson multivariable regression (intra-block analysis) and only those variables reaching  $p < 0.10$  in the intra-block analysis remained in the model for the next phase. Thereby, variables in the distal level reaching a significance level of  $p < 0.10$  in the intra-block analysis were subjected to Poisson multivariate regression along with the intermediate level variables that reached  $p < 0.20$  in the univariate analysis; subsequently, variables from distal and intermediate levels that reached  $p < 0.1$  after intra-block analyses were subjected to multivariate regression along with the proximal level variables that reached  $p < 0.20$  in the univariate analysis. The model predicted that variables reaching  $p < 0.10$  in the intra-block analyses should remain in the model until the end, as confounders, adjusting interactions between variables from the different blocks. The strength of the associations was estimated using crude and adjusted prevalence ratios (PR and aPR, respectively) and respective 95% confidence intervals (95%CI). Significance was set at  $p < 0.05$ .

The ethics committee of the hospital approved the study protocol (51699315000005327). All participants signed an informed consent form before being included in the study.

## Results

A total of 281 employees were considered eligible for the study; of these, 29 were not included in the study because they could not be located. The final sample therefore comprised 252 women. Age in the sample ranged from 24 to 45 years, with more than half having a college degree.

The frequencies found for the variables included in the different levels of the model are pre-

sented in Table 1. Nearly all women had planned to breastfeed and to maintain breastfeeding after returning to work. Nevertheless, 33 women (13%) interrupted breastfeeding within one month after their return.

With regard to issues related to the mothers' work, the median duration of the working week was 36 hours, ranging from 12 to 45 hours. Most of the women interviewed worked only during the day, did not breastfeed their infants during working hours, did not expressed their milk at work and was satisfied with the support received from the institution to breastfeed.

The following factors reached  $p < 0.2$  in the univariable analysis and were therefore included in the multivariable analysis: distal level – maternal age, maternal education level, cohabitation with partner and cohabitation with someone other than partner; intermediate level – intention to breastfeed after returning to work, intended duration of breastfeeding, breastfeeding within the first hour of life, and exclusive breastfeeding upon discharge from the maternity ward; proximal level – all variables except breastfeeding support from health professionals, knowledge about existence of a milk bank in the institution, support of colleagues/boss, institutional guidance towards breastfeeding maintenance and feeling overwhelmed by combining breastfeeding and work

Table 2 shows the final results of the hierarchical multivariable regression analysis. The following variables showed significant associations ( $p < 0.05$ ) with breastfeeding abandonment in the first month after the mother's return to work, in descending order of aPR: using a pacifier, cohabiting with someone other than partner, having no intention or having doubts about maintaining breastfeeding after returning to work, having a college degree, not receiving breastfeeding support from the infant's caregiver, and infant being older when the woman returned to work. Longer duration of exclusive breastfeeding was a protective factor for the outcome – for every additional day of exclusive breastfeeding, the probability of early weaning decreased by 1%.

## Discussion

This study is a pioneer in investigating the factors associated with breastfeeding abandonment in the first month after the mother's return to work. We truly believe that these findings can serve as a basis for the development of actions aimed to promote the maintenance of breastfeeding among working mothers.

**Table 1.** Univariable analysis to estimate associations between prevalence of breastfeeding abandonment in the first month after the mother's return to work and the different variables explored.

	Sample (n = 252)		Prevalence of weaning ≤ 1 month after returning to work (n = 33)		PR (95%CI)	p
	n	%	n	%		
<b>DISTAL LEVEL</b>						
Maternal age (years), mean (SD)	35.7 (3.7)	-	-	-	1.06 (0.98-1.14)	0.140
Mother with college degree						
Yes	150	59.5	26	17.3	2.53 (1.14-5.59)	0.022
No	102	40.5	7	6.9	1.00	
Maternal skin color						
White	214	84.9	30	14.0	1.78 (0.57-5.53)	0.322
Non-white	38	15.1	3	7.9	1.00	
Cohabitation with partner						
Yes	235	93.3	33	14.0	4.85 (0.32-77.8)	0.199
No	17	6.7	0	0.0	1.00	
Cohabitation with someone other than partner						
Yes	10	4.0	3	30.0	2.42 (0.89-6.61)	0.085
No	242	96.0	30	12.4	1.00	
<b>INTERMEDIATE LEVEL</b>						
Intention to breastfeed after returning to work						
Yes	245	97.2	30	12.2	1.00	
No/Maybe	7	2.8	3	42.9	3.50 (1.40-8.77)	0.008
Intended breastfeeding duration (months), median (P25-P75)	12 (12-24)	-	-	-	0.92 (0.86-0.98)	0.017
Breastfeeding in the first hour of life						
Yes	150	59.5	15	10.0	1.00	
No	102	40.5	18	17.6	1.76 (0.93-3.34)	0.081
Exclusive breastfeeding upon maternity discharge						
Yes	216	85.7	24	11.1	1.00	
No	36	14.3	9	25.0	2.25 (1.14-4.44)	0.019

it continues

Even though the majority of women interviewed had the intention to breastfeed and maintain breastfeeding after returning to work, 33 (13 %) weaned their babies in the first month after their return, that is, in 1 month only. Taking into consideration that the mean age of infants upon their mothers' return to work was 6.4 months, and that 38.1% of the mothers returned to work during the 8th month postpartum (180 days' maternity leave plus 30 days' vacation), it is possible to infer that the prevalence of weaning in the first month after the mother's return to work among the women assessed was greater than the rates observed in the overall female population of the same city (Porto Alegre, southern Brazil). According to a nationwide study conducted by the Brazilian Ministry of Health in 2008, there was a

reduction of 14.6 percentage points in the prevalence of breastfeeding in Porto Alegre between six and nine months of infant age (period of 3 months)<sup>8</sup>. Therefore, it seems that the mothers' work itself anticipated the weaning in the studied population, which is in line with the perception of half of the participants that reconciling breastfeeding and work was a difficult or very difficult process. This happened despite the pro-breastfeeding facilities and benefits offered by the institution, namely: 180-day maternity leave<sup>15-17</sup>, Baby Friendly Hospital Initiative accreditation<sup>16</sup>, milk bank<sup>18</sup>, breastfeeding consultants<sup>19</sup>, and daycare/nursery near work<sup>20</sup>. Moreover, the fact that 65% of the women felt supported by colleagues and boss in the sense of maintaining breastfeeding is outstanding.

**Table 1.** Univariable analysis to estimate associations between prevalence of breastfeeding abandonment in the first month after the mother's return to work and the different variables explored.

	Sample (n = 252)		Prevalence of weaning ≤ 1 month after returning to work (n = 33)		PR (95%CI)	p
	n	%	n	%		
<b>PROXIMAL LEVEL</b>						
<b>Duration of exclusive breastfeeding, median (P25-P75)</b>	150 (90-180)	-	-	-	0.991 (0.987-0.995)	< 0.001
<b>Woman's partner supports breastfeeding</b>						
Yes (a lot)	205	81.3	30	14.6	2.29 (0.73-7.19)	0.155
No or few	47	18.7	3	6.4	1.00	
<b>Breastfeeding support from the infant caregiver</b>						
Yes	188	74.6	21	11.2	1.00	
No	64	25.4	12	18.8	1.68 (0.88-3.22)	0.118
<b>Woman's mother supports breastfeeding</b>						
Yes	207	82.1	24	11.6	1.00	
No	45	17.9	9	20.0	1.73 (0.86-3.46)	0.124
<b>Receives breastfeeding support from health professionals</b>						
Yes	178	70.6	22	12.4	1.00	
No	74	29.4	11	14.9	1.20 (0.62-2.35)	0.590
<b>Infant age when woman returned to work (months),* mean (SD)</b>	6.4 (1.4)	-	-	-	1.13 (1.10-1.17)	< 0.001
<b>Woman's working shift</b>						
Day	187	74.2	20	10.7	1.00	
Night/Both	65	25.8	13	20.0	1.87 (0.99-3.54)	0.055
<b>Work shifts</b>						
Regular	95	37.7	16	16.8	2.25 (1.04-4.86)	0.040
On duty	37	14.7	8	21.6	2.88 (1.20-6.94)	0.018
Regular + on duty	120	47.6	9	7.5	1.00	
<b>Knowledge of existence of milk bank in the institution</b>						
Yes	178	70.6	22	12.4	1.00	
No	74	29.4	11	14.9	1.20 (0.62-2.35)	0.590
<b>Feels embarrassed to express breast milk at work</b>						
Yes	41	16.3	9	22.0	5.93 (1.35-25.9)	0.018
No	54	21.4	2	3.7	1.00	
Did not express milk at work	157	62.3	22	14.0	3.78 (0.92-15.6)	0.065
<b>Donated milk expressed at work</b>						
Yes	9	3.6	3	33.3	3.58 (1.15-11.2)	0.028
No	86	34.1	8	9.3	1.00	
Did not express milk at work	157	62.3	22	14.0	1.51 (0.70-3.24)	0.294
<b>Use of lactation consulting services</b>						
Yes	65	25.8	12	18.5	1.64 (0.86-3.15)	0.134
No	187	74.2	21	11.2	1.00	

it continues

Among all variables directly or indirectly related to the mother's employment, only two showed association with weaning during the first month after the mother's return to work, name-

ly, intention to breastfeed after returning to work and infant age at the time of return.

Even though only seven women did not have the intention to breastfeed or had doubts about

**Table 1.** Univariable analysis to estimate associations between prevalence of breastfeeding abandonment in the first month after the mother's return to work and the different variables explored.

	Sample (n = 252)		Prevalence of weaning ≤ 1 month after returning to work (n = 33)		PR (95%CI)	p
	n	%	n	%		
<b>Support of colleagues/boss</b>						
Yes	163	64.7	19	11.7	1.00	
No	89	35.3	14	15.7	1.35 (0.71-2.56)	0.359
<b>Perceived impaired performance because of breastfeeding</b>						
Yes	58	23.0	11	19.0	1.67 (0.86-3.24)	0.128
No	194	77.0	22	11.3	1.00	
<b>Institutional guidance towards breastfeeding maintenance</b>						
Yes	63	25.0	9	14.3	1.00	
No/Does not know	189	75.0	24	12.7	0.89 (0.44-1.81)	0.745
<b>Use of institution's daycare/nursery</b>						
Yes	58	23.0	4	6.9	1.00	
No	194	77.0	29	14.9	2.17 (0.79-5.91)	0.131
<b>Breastfeeding at the daycare/nursery</b>						
Yes	34	13.5	1	2.9	1.00	
No	24	9.5	3	12.5	4.25 (0.47-38.4)	0.198
Does not use daycare/nursery	194	77.0	29	14.9	5.08 (0.72-36.1)	0.104
<b>Feeling overwhelmed by combining breastfeeding and work</b>						
A lot/More or less	101	40.1	10	9.9	1.00	
A little/No	151	59.9	23	15.2	1.54 (0.77-3.09)	0.227
<b>Perceives differences in support from male vs. female colleagues</b>						
Yes, women support more	49	19.4	5	10.2	1.00	
Yes, men support more	6	2.4	3	50.0	4.90 (1.55-15.5)	0.007
No/Does not know	197	78.2	25	12.7	1.24 (0.50-3.08)	0.638
<b>Perceived level of difficulty associated with returning to work while breastfeeding</b>						
Difficult/Very difficult	132	52.4	21	15.9	1.59 (0.82-3.09)	0.171
Not difficult	120	47.6	12	10.0	1.00	

SD: standard deviation; P25-P75: 25th percentile – 75th percentile; PR: prevalence ratio. \* Variables expressed with continuous values.

Source: Authors.

doing it after returning to work, the higher likelihood of weaning in this subgroup was impressive – more than three times higher. These women and their children would probably benefit from breastfeeding-promotion actions during their prenatal care and before the return of women to work, so as to guarantee that they are well informed about the importance of breastfeeding and about their legal rights as lactating working mothers, and thus feel stimulated to maintain breastfeeding even after returning to work<sup>21,22</sup>.

The association between older infant age upon the mother's return to work and higher weaning rates in the first month at work is not

surprising: higher rates of weaning are expected as the child gets older. It is therefore possible that, if these women had returned to work earlier, which is the reality for the vast majority of working mothers in Brazil, the weaning rate soon after the mother's return to work would be higher at a younger infant age. Brazilian legislation guarantees a 120-day maternity leave to all working women, and only public workers or employees of some voluntary companies are granted 180 days of maternity leave. In Taiwan, the weaning rate in the first month after returning to work was 49%, much higher than that found in our study<sup>23</sup>. In that country, maternity leave is only eight weeks,

**Table 2.** Hierarchical multivariable analysis to estimate associations between prevalence of breastfeeding abandonment in the first month after the mother's return to work and the variables associated with the outcome in the univariable analysis.

	Sample (n = 252)		Prevalence of weaning ≤ 1 month after returning to work (n = 33)		PR (95%CI)	p
	n	%	n	%		
<b>DISTAL LEVEL</b>						
<b>Mother with college degree</b>						
Yes	150	59.5	26	17.3	2.66 (1.21-5.87)	0.015
No	102	40.5	7	6.9	1.00	
<b>Cohabitation with someone other than partner</b>						
Yes	10	4.0	3	30.0	3.77 (1.64-8.67)	0.002
No	242	96.0	30	12.4	1.00	
<b>INTERMEDIATE LEVEL</b>						
<b>Intention to breastfeed after returning to work</b>						
Yes	245	97.2	30	12.2	1.00	
No/Maybe	7	2.8	3	42.9	3.39 (1.21-9.53)	0.020
<b>PROXIMAL LEVEL</b>						
<b>Duration of exclusive breastfeeding*, median (P25-P75)</b>	150 (90-180)	-	-	-	0.990 (0.986-0.996)	< 0.001
<b>Breastfeeding support from the infant caregiver</b>						
Yes (a lot + more or less)	188	74.6	21	11.2	1.00	
No	64	25.4	12	18.8	2.26 (1.01-5.07)	0.047
<b>Use of a pacifier</b>						
Yes	162	64.3	29	17.9	4.58 (1.74-12.1)	0.002
No	90	35.7	4	4.4	1.00	
<b>Infant age when woman returned to work (months)*, mean (SD)</b>	6,4 (1,4)	-	-	-	1.16 (1.10-1.22)	< 0.001

SD: standard deviation; P25-P75: 25th percentile – 75th percentile; PR: prevalence ratio.

Source: Authors.

which explains this difference and reinforces the importance of extended maternity leave for the maintenance of breastfeeding.

Similarly, important is the identification of risk factors that are not related to the workplace but also contribute to the interruption of breastfeeding soon after the mother's return to work. These findings could be used to plan actions targeted at women who are at higher risk of abandoning breastfeeding after returning to work and should be taken into consideration in the development and implementation of institutional strategies and public policies aimed at promoting breastfeeding, with a special focus on the period comprising the mother's return to

work. Some of these non-institutional factors are already well known worldwide and are not exclusive of working mothers, e.g.: shorter duration of exclusive breastfeeding<sup>24</sup>, use of a pacifier<sup>25-27</sup>, and receiving help/support with child care<sup>23</sup>. Also, the association between higher education level (proxy of socioeconomic status) and shorter breastfeeding duration was observed in the most recent national study on infant food and nutrition – ENANI<sup>28</sup>. According to this survey, the poorest women (first quintile of the National Economic Indicator) had a longer duration of breastfeeding when compared to the richest (fifth quintile). The prevalence of breastfeeding among children aged 12 to 15 months were, respectively,

59.8% and 42.1%. This difference was even more striking among children aged 20 to 23 months: 40.5% and 20.3% respectively.

The finding that cohabiting with someone other than partner had a negative influence on the maintenance of breastfeeding after the woman's return to work may seem surprising. In fact, having help with the infant at home would be expected to increase breastfeeding support. However, the presence of another person in the house ultimately allows the mother to delegate child care to that person, thus having more freedom to be absent, which could in turn have negative consequences for the maintenance of breastfeeding.

Even though the hospital where the research was conducted offered some important benefits for the maintenance of breastfeeding, it is possible that some of the cases of weaning could have been avoided if the institution offered others facilities, such as a support/welcoming program for mothers immediately after their return. It is reasonable to argue that creating a policy focused specifically on the mother's adaptation in her first month back to work after the maternity leave could minimize the effects of this dramatic change for both infant and mother. A fundamental part of this program would be discussing aspects related and unrelated to the workplace and their effects on breastfeeding. Because only one-third of the women expressed milk at work, such welcoming program should encourage women to express their milk and take it home to feed their babies when the mother is not there, or else to donate it to a milk bank. Rather, half of the women discarded their expressed milk, in spite of the availability of the necessary infrastructure for expressing and safely storing breastmilk for subsequent feeding – a strategy that has been shown to contribute to the maintenance of exclusive breastfeeding. Kozhimannil *et al.*<sup>29</sup> observed a positive association between expanded access to workplace accommodations for breastfeeding and longer duration of exclusive breastfeeding among American workers. A higher chance of maintenance of exclusive breastfeeding at 6 months of life of the infant was also observed in association with the mother having a longer break to express breastmilk. In addition to the encouragement to express milk, women whose children attend the institution's daycare/nursery service should be motivated to breastfeed their infants during working hours. In the present study lightly over half of the women whose chil-

dren were at the institution's daycare used this resource.

According to the results of the present study, another aspect that should be addressed in a pro-breastfeeding welcoming program for mothers returning to work is knowledge/awareness of the facilities and benefits offered by the institution. Among the women interviewed, there was a great deal of unawareness of such facilities: only one-fourth reported having received specific guidance on breastfeeding upon their return to work; about 75% were unaware of the availability of lactation consulting services at the institution; about one-third were unaware of the existence of a human milk bank; and 10% were not aware of the possibility to work one hour less each day until the infant was 1 year old. Also, it is important to provide information on breastfeeding management to mothers upon their return to work, as a way to stimulate the continuation of breastfeeding<sup>21</sup>.

Generalization of the present findings should be made very cautiously, especially considering that the study was conducted at a single institution and with a sample that differs from the general population in terms of their level of education and the benefits offered by the institution. Notwithstanding, replicating this study is important and useful to allow comparisons with settings with different employee profiles, different institutional organization and structure, etc. This could provide further evidence of the positive or negative influence of different factors on the maintenance of breastfeeding after the return of lactating mothers to work.

A possible memory bias cannot be disregarded, given the interval between the outcome and the interview (2.5 years at most). However, it is known that mothers tend to remember any breastfeeding duration with relative accuracy. According to a study conducted in the United States, data on breastfeeding duration was slightly overestimated after 1-3.5 years of the outcome<sup>30</sup>. In addition, we believe that weaning soon after returning to work is a remarkable event, favoring the memory of the date on which it occurred.

In conclusion, some factors associated with greater breastfeeding abandonment in the first month after return were identified – both related and unrelated to the workplace. The present results could be used to help develop a support/welcoming program for working mothers who wish to maintain breastfeeding after their return to work.



## Collaborations

M Schorn: project elaboration, as well as its theoretical foundation, data collection, analysis and interpretation, writing of the article. MS Mendes: collaborated significantly in data collection. ERJ Giugliani: evaluated and guided all stages of the project and the finalization of the article.

## References

1. United Nations Children's Fund (UNICEF), World Health Organization (WHO). Global Strategy on Infant and Young Child Feeding. Geneva: WHO; 2003.
2. Victora CG, Bahl R, Barros AJ, França GV, Horton S, Krasevec J, Murch S, Sankar MJ, Walker N, Rollins NC; Lancet Breastfeeding Series Group. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. *Lancet* 2016; 387(10017):475-490.
3. The Lancet. Breastfeeding: a missed opportunity for global health. *Lancet* 2017; 390(10094):532.
4. Rollins NC, Bhandari N, Hajeebhoy N, Horton S, Lutter CK, Martines JC, Piwoz EG, Richter LM, Victora CG; Lancet Breastfeeding Series Group. Why invest, and what it will take to improve breastfeeding practices? *Lancet* 2016; 387(10017):491-504.
5. Skafida V. Juggling work and motherhood: the impact of employment and maternity leave on breastfeeding duration: a survival analysis on Growing Up in Scotland data. *Matern Child Health J* 2012; 16(2):519-527.
6. Monteiro FR, Buccini G dos S, Venâncio SI, et al. Influence of maternity leave on exclusive breastfeeding: analysis from two surveys conducted in the Federal District of Brazil. *J Hum Lact*; 35(2):362-370.
7. Margotti E, Mattiello R. Fatores de risco para o desmame precoce. *Rev Rene* 2016; 17(4):537-544.
8. Ministério da Saúde (MS). *II pesquisa de prevalência de aleitamento materno nas capitais brasileiras e Distrito Federal*. Brasília: MS; 2009.
9. Weber D, Janson A, Nolan M, Wen LM, Rissel C. Female employees' perceptions of organisational support for breastfeeding at work: findings from an Australian health service workplace. *Int Breastfeed J* 2011; 6:19.
10. Silva CA, Davim RMB. Mulher trabalhadora e fatores que interferem na amamentação: revisão integrativa. *Rev Rene* 2012; 13(5):1208-1217.
11. Brasileiro AA. *Apoio institucional e a manutenção da amamentação após o retorno ao trabalho [tese]*. Campinas: Universidade Estadual de Campinas; 2012.
12. Nardi AL, Frankenberg ADV, Franzosi OS, Santo LCDE. Impact of institutional aspects on breastfeeding for working women: a systematic review. *Cien Saude Colet* 2020; 25(4):1445-1462.
13. Victora CG, Huttly SR, Fuchs SC, Olinto MT. The role of conceptual frameworks in epidemiological analysis: a hierarchical approach. *Int Jour Epid*; 26(1):224-227.
14. Boccolini CS, Carvalho ML, Oliveira MIC, et al. Factors associated with exclusive breastfeeding in the first six months of life in Brazil: a systematic review. *Rev Saude Publica* 2015; 49:91.
15. Navarro-Rosenblatt D, Garmendia ML. Maternity leave and its impact on breastfeeding: a review of the literature. *Breastfeed Med* 2018; 13(9):589-597.
16. Pérez-Escamilla R, Martínez JL, Segura-Pérez S. Impact of the Baby-friendly Hospital Initiative on breastfeeding and child health outcomes: a systematic review. *Matern Child Nutr* 2016; 12(3):402-417.
17. Chai Y, Nandi A, Heymann J. Does extending the duration of legislated paid maternity leave improve breastfeeding practices? Evidence from 38 low-income and middle-income countries. *BMJ Glob Heal*; 3(5):e001032.

18. Chen YC, Wu YC, Chie WC. Effects of work-related factors on the breastfeeding behavior of working mothers in a Taiwanese semiconductor manufacturer: a cross-sectional survey. *BMC Public Health* 2006; 6:160.
19. Balkam JAJ, Cadwell K, Fein SB. Effect of components of a workplace lactation program on breastfeeding duration among employees of a public-sector employer. *Matern Child Health J* 2011; 15(5):677-683.
20. Osis MJ, Duarte GA, Pádua KS, Hardy E, Sandoval LE, Bento SF. Aleitamento materno exclusivo entre trabalhadoras com creche no local de trabalho. *Rev Saude Publica* 2004; 38(2):172-179.
21. Brasileiro AA, Ambrosano GM, Marba ST, Possobon RF. A amamentação entre filhos de mulheres trabalhadoras. *Rev Saude Publica* 2012; 46(4):642-648.
22. Tang X, Patterson P, MacKenzie-Shalders K, van Herwerden LA, Bishop J, Rathbone E, Honeyman D, Reidlinger DP. Workplace programmes for supporting breast-feeding: a systematic review and meta-analysis. *Public Health Nutr* 2021; 24(6):1501-1513.
23. Tsai SY. Influence of partner support on an employed mother's intention to breastfeed after returning to work. *Breastfeed Med* 2014; 9(4):222-230.
24. Martins EJ, Giugliani ERJ. Which women breastfeed for 2 years or more? *J Pediatr (Rio J)* 2012; 88(1):67-73.
25. Victora CG, Behague DP, Barros FC, Olinto MT, Weiderpass E. Pacifier use and short breastfeeding duration: Cause, consequence, or coincidence? *Pediatrics* 1997; 99(3):445-453.
26. Nelson AM. A comprehensive review of evidence and current recommendations related to pacifier usage. *J Pediatr Nurs* 2012; 27(6):690-699.
27. Buccini G, Pérez-Escamilla R, D'Aquino Benicio MH, Giugliani ERJ, Venancio SI. Exclusive breastfeeding changes in Brazil attributable to pacifier use. *PLoS One* 2018; 13(12):e0208261.
28. Universidade Federal do Rio de Janeiro (UFRJ). *Aleitamento materno: prevalência e práticas de aleitamento materno em crianças brasileiras menores de 2 anos 4: ENANI 2019*. Rio de Janeiro: UFRJ; 2021.
29. Kozhimannil KB, Jou J, Gjerdingen DK, McGovern PM. Access to workplace accommodations to support breastfeeding after passage of the affordable care act. *Womens Health Issues* 2016; 26(1):6-13.
30. Gillespie B, D'Arcy H, Schwartz K, Obo JK, Foxman B. Recall of age of weaning and other breastfeeding variables. *Int Breastfeed J* 2006; 1:4.

---

Article submitted 29/11/2022

Approved 31/01/2023

Final version submitted 02/02/2023

---

Chief editors: Romeu Gomes, Antônio Augusto Moura da Silva