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Juggling Work and Breastfeeding: Effects of Maternity Leave and Occupational Characteristics

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What's Known on This Subject

Breastfeeding rates at 6 months remain substantially lower than Healthy People 2010 objectives. For working women, the challenge of balancing breastfeeding and paid work is an important reason for breastfeeding cessation in the first 6 months.

What This Study Adds

Postpartum maternity leave may favorably affect breastfeeding among full-time workers, particularly if they lack job flexibility, are nonmanagers, or experience distress. Pediatricians should encourage leave-taking and advocate for extending paid postpartum leave and flexible working conditions for breastfeeding women.

ABSTRACT

OBJECTIVES. Juggling breastfeeding and paid work can challenge breastfeeding success. We examined the relationship between breastfeeding and maternity leave before and after delivery among working mothers in Southern California. California is 1 of only 5 states in the United States providing paid pregnancy leave that can be extended for infant bonding.

PATIENTS AND METHODS. Drawing from a case-control study of preterm birth and low birth weight, 770 full-time working mothers were compared on whether they established breastfeeding in the first month. For those who established breastfeeding, we examined duration. Eligible women participated in California's Prenatal Screening Program; delivered live births between July 2002 and December 2003; were ≥ 18 years old; had a singleton birth without congenital anomalies; and had a US mailing address. We assessed whether maternity leave and other occupational characteristics predicted breastfeeding cessation and used multivariate regression models weighted for probability of sampling to calculate odds ratios for breastfeeding establishment and hazards ratios for breastfeeding cessation.

RESULTS. A maternity leave of ≤ 6 weeks or 6 to 12 weeks after delivery was associated, respectively, with a fourfold and twofold higher odds of failure to establish breastfeeding and an increased probability of cessation after successful establishment, relative to women not returning to work, after adjusting for covariates. The impact of short postpartum leave on breastfeeding cessation was stronger among nonmanagers, women with inflexible jobs, and with high psychosocial distress. Antenatal leave in the last month of pregnancy was not associated with breastfeeding establishment or duration.

CONCLUSIONS. Postpartum maternity leave may have a positive effect on breastfeeding among full-time workers, particularly those who hold nonmanagerial positions, lack job flexibility, or experience psychosocial distress. Pediatricians should encourage patients to take maternity leave and advocate for extending paid postpartum leave and flexibility in working conditions for breastfeeding women. *Pediatrics* 2009;123:e38–e46

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Key Words

breastfeeding, breastfeeding cessation, breastfeeding duration, breastfeeding establishment in the first month, working mothers

Abbreviations

SDI—State Disability Insurance
PTD—preterm delivery
LBW—low birth weight
OR—odds ratio
CI—confidence interval
HR—hazard ratio

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BREAST MILK IS optimal for infants because it protects against childhood infections and chronic diseases and may prevent obesity.^{1–5} Although 72% of American women initiated breastfeeding in 2002, by 6 months, the rates dropped to 35%,⁶ substantially lower than Healthy People 2010 objectives of 50%.⁷

Research has consistently shown low educational attainment, young age, being single, being black, and, for multiparas, having no previous breastfeeding experience as risk factors for early breastfeeding cessation.^{6,8–12} For working women, the challenge of balancing breastfeeding and paid work is an important reason for breastfeeding cessation in the first 6 months.¹³

Although the availability of worksite lactation facilities¹⁴ and support from coworkers and supervisors^{15–17} predict breastfeeding success, less is known about occupational stressors. Recent studies suggest that inflexible work schedules are associated with breastfeeding cessation,^{14,18} but other workplace stressors remain unexamined. Furthermore, the effects of maternity leave benefits and arrangements are unclear.

Employment may affect breastfeeding even before the woman returns to work. Studies of primarily white, middle class women found that women planning to work full-time postpartum are less likely to initiate breastfeeding than women who expect not to work or to work part-time.¹⁹⁻²¹ In contrast, a study of low-income black and Hispanic women interviewed postpartum found no effect of expectation to work on breastfeeding initiation, after controlling for demographic and family characteristics.¹⁸ However, this study did not distinguish between full- and part-time work.

Many initiators stop breastfeeding within a few weeks, often citing early breastfeeding problems, such as insufficient milk supply or trouble with infant's latch-on.¹³ Cohort studies have found that the risk of quitting breastfeeding in the first month is higher than in any month thereafter.¹⁸ Taking maternity leave could influence the extent to which women who have chosen to initiate breastfeeding work toward establishing breastfeeding when faced with these early hurdles.

Some working women take leave before delivery because of medical problems, fatigue, stress, discomfort, or to prepare for birth.²² Antenatal leave, by allowing physical and psychological restoration, could contribute to increased milk supply and fewer lactation problems.²³ Studies of constrained restoration of resources needed to cope with juggling mothering and work support this hypothesis.²⁴ However, the antenatal leave-breastfeeding relationship has not been examined.

Delaying the return to work is positively associated with breastfeeding duration.^{18,19,25} Roe et al,²⁶ using 1993 survey data, found that the effect of postpartum maternity leave on breastfeeding duration was strong in the first 12 weeks after birth. The beneficial effects of extending leave were seen among full-time, not part-time, workers.¹⁹ An earlier study using a national mail survey found that maternity leave duration was highly associated with duration of breastfeeding for black and white women.²⁵ White professional women were more likely to continue breastfeeding after returning to work. The authors surmised that this was because of increased job control and flexibility; however, job control was not explicitly examined.²⁵

California is 1 of 5 states providing paid pregnancy leave, averaging \$293 per week in 2003, through a temporary disability insurance program, California State Disability Insurance (SDI), which funds ≤ 4 weeks of maternity leave before delivery and ≤ 6 weeks after vaginal delivery or 8 weeks after cesarean delivery. California's cash benefits go beyond the Federal Family and Medical Leave Program, which allows parents to take 3 months of unpaid job-protected leave. Because unused antenatal leave may not be used to supplement postpartum maternity leave, SDI provides no incentive to forego antenatal leave. California's Paid Family Leave Program extends SDI benefits up to 6 additional weeks postpartum for infant bonding.

We studied full-time working women in California to determine the extent to which maternity leave and other employment characteristics were associated with breastfeeding establishment in the first 30 days postpar-

tum and with breastfeeding duration thereafter. We tested these hypotheses: (1) maternity leave taken before delivery increases the likelihood of breastfeeding establishment; (2) maternity leave taken after delivery increases both establishment and duration; (3) certain job characteristics (professional/managerial jobs, those involving high autonomy, and those considered fulfilling) are positively associated with breastfeeding establishment and duration; and (4) maternity leave increases breastfeeding duration most for women with psychosocial distress during pregnancy.

MATERIALS AND METHODS

A cohort was selected from participants in a case-control study, Juggling Work and Life During Pregnancy, designed to examine the relationship between maternity leave and pregnancy outcomes. Eligible women enrolled in midpregnancy into California's Prenatal Screening Program in 3 southern California counties (Orange, Imperial, and San Diego); delivered live births between July 2002 to December 2003; were ≥ 18 years old; had a singleton birth without congenital anomalies; and had a US mailing address. Sampled women included all of the women delivering preterm (PTD) or low birth weight (LBW) infants ($n = 3361$) according to last menstrual period and birth weight from birth records registered during July 2002 to August 2003; a random sample of control subjects delivering normal weight infants (≥ 2500 g) at term (≥ 37 weeks' gestation; $n = 3366$) frequency matched on race and month of birth (numbers of case and control subjects differ because of post-sampling exclusion of incorrect matches); and an unmatched sample of 504 LBW case subjects registered during September to December 2003, added to increase sample size for LBW analyses.

The ~ 6700 sampled potential participants were mailed an introductory letter, and, of these, 2915 were prescreened by telephone to ascertain that they had worked ≥ 20 hours per week during the first 2 trimesters of pregnancy or through the date of California's Prenatal Screening Program testing. Details on prescreening for work eligibility and 45-minute telephone interview have been described elsewhere.²² The response rate among eligible women contacted for study was 73%. Overall, 1214 women who worked ≥ 20 hours per week through the date of prenatal screening completed interviews. Mean and median interview time was 4.5 months after birth in case and control subjects. Because evidence suggests that breastfeeding is more likely compromised among full-time workers, part-time workers (< 30 hours per week) were excluded ($n = 406$), as were women reporting births with congenital anomalies ($n = 38$), leaving 770 women for analysis.

During the postpartum interview, participants were queried about work and family stress, occupational and demographic characteristics, maternity leave, birth outcomes, and breastfeeding. Bilingual Spanish-English interviewers used computer-assisted telephone interviewing software to enter responses into a database and offered \$10 gift cards to participants in return for a completed interview. The study protocol was approved

by the committees for the protection of human subjects at the University of California, Berkeley (No. 2003-5-115) and by the California Health and Human Services Agency (No. 02-10-18).

Measures and Data Collection Instruments

Outcome variables included the establishment of breastfeeding in the first 30 days postpartum and duration of breastfeeding among women who had established breastfeeding. These were assessed with the questions, "Did you ever breastfeed or pump breast milk to feed your new baby after delivery?" and for women who had discontinued breastfeeding, "When did you stop breastfeeding or feeding pumped milk to your baby?" Given our focus on assessing breastfeeding establishment, women who initiated but discontinued breastfeeding in the first month (12.5%) were combined with noninitiators (6.5%). These groups were similar in terms of health characteristics, pregnancy outcome, age, race, income, and psychosocial distress (data not shown).

Key independent variables were whether maternity leave was taken with the expectation of returning to the job or employer sometime after delivery during the ninth month of pregnancy (women who delivered or went on leave before 36 weeks were excluded from this analysis; ie, antenatal leave) and in the postpartum period. Other occupational variables included whether the employer offered maternity leave benefits; type of occupation; ≥ 1 physical demand (eg, lifting, bending, and heavy machinery); work shift; years employed; company size; job fulfillment; job flexibility; and work strain characterized as the combination of high psychological job demands and low decision latitude derived from Karasek's Job Content Questionnaire.²⁷

Other variables included psychosocial stress from life events during pregnancy (eg, serious arguments with spouse/partner or unusual money problems) measured by the Life Events Inventory, modified for use with pregnant populations.²⁸ Health variables included maternal prepregnancy BMI, PTD (<37 weeks' gestation), and LBW (<2500 g). Sociodemographic variables included maternal age, annual household income, educational attainment, race/ethnicity, parity, and marital/cohabiting status.

Data Analysis

A cohort analysis was performed weighting all of the point estimates by the inverse probability of sampling to account for oversampling of cases and frequency matching. Analytic weights reflect known sampling probabilities before exclusion of nonworkers and nonrespondents. χ^2 tests and logistic regression analyses were performed by using SAS 9.1 (SAS Institute, Inc, Cary, NC) to obtain SEs and test statistics accounting for the stratified study sampling design.²⁹ We estimated rates of breastfeeding establishment and used χ^2 tests to compare sociodemographic, family, occupational, psychosocial stress, and health characteristics in women who did and did not establish breastfeeding. In addition to maternity leave predictors, we examined other occupational vari-

ables associated with breastfeeding establishment at a *P* value of $<.10$, using logistic regression to test whether each occupational variable predicted failure to establish breastfeeding, with and without adjustment for sociodemographic covariates. Weighted odds ratios (ORs) and 95% confidence intervals (CIs) were reported, adjusting for potential confounding effects of education, race, parity, partnered status, and psychosocial stress.

Among women who established breastfeeding, we calculated breastfeeding duration using Kaplan-Meier failure plots and performed Cox proportional hazards modeling³⁰ to estimate the hazard ratio (HR) of breastfeeding cessation, controlling for the same occupational, demographic, and psychosocial stress covariates as for the breastfeeding establishment models. Origin time for the survival models was date of delivery; date at which women stopped breastfeeding was the failure event. Women still breastfeeding at the time of interview were treated as censored (65%). Weighted survival modeling, adjusting SEs for stratified sampling, was performed using Stata 10 (Stata Corp, College Station, TX).³¹ The HR represents the increased probability of breastfeeding cessation at any given point in time. Subgroup analyses, stratifying by managerial position, job flexibility, and psychosocial stress, were performed to identify subgroups in which maternity leave may have greater or lesser benefit than others in the prediction of breastfeeding duration.

RESULTS

Breastfeeding Establishment

Overall, 82% of mothers established breastfeeding (Table 1). Establishing breastfeeding was associated with higher income, higher education, older age, married/cohabiting, multiparity, and low psychosocial distress. It was not associated with prepregnancy maternal BMI, PTD, or LBW.

Having a job that offers maternity leave was not associated with breastfeeding establishment, but length of postpartum maternity leave was associated with it. Women who returned to work (68%) took on average 10.3 weeks (SD: 4.8 weeks) of maternity leave. Mothers who returned to work within 12 weeks after delivery, and especially within 6 weeks, were less likely to establish breastfeeding than those who took longer leaves or who had not returned to work at time of the interview. Those establishing breastfeeding were more likely to have taken antenatal leave in the ninth month of pregnancy (24% vs 17%), although the difference was not statistically significant. Duration of postpartum maternity leave was the mostly strongly associated with breastfeeding establishment of all of the occupational variables (Table 1).

Women who described their jobs as managerial, fulfilling, or as high in autonomy were more likely to establish breastfeeding (Table 1). Occupational covariates independently associated with this outcome in bivariate logistic analyses were kept in multivariate models. In a multivariate logistic model with nonreturnees as the reference group, the strongest predictor of failure to

TABLE 1 Characteristics of Full-time Workers Who Establish Breastfeeding

Characteristic	N	Weighted % ^a	Weighted P	Breastfeeding not Established		Breastfeeding Established	
				N	Weighted Column % ^a	N	Weighted Column %
Total numbers	799			145		654	
Sociodemographics							
Age, y							
18–25	154	19	.013	46	31	108	16
26–33	474	60		76	53	398	62
≥34	170	21		23	17	147	22
Parity							
Primiparous	378	47	.002	88	63	290	43
Multiparous	421	53		57	37	364	57
Income							
Low	127	14	.0004	28	14	99	14
Middle	209	25		51	42	158	21
High	458	60		66	44	392	64
Race ^b							
White	350	50	.210	52	50	298	50
Hispanic	288	34		64	39	224	33
Other	161	16		29	11	132	17
Partnered status							
Married/cohabiting	745	94	.0001	126	84	619	96
Single	54	6		19	16	35	4
Education							
High school diploma or less	220	26	.0003	64	42	156	23
Some college	578	74		80	58	498	77
Health							
Prepregnancy BMI							
Underweight	33	3	.25	5	1	28	4
Normal	476	63		80	57	396	64
Overweight	167	20		30	23	137	19
Obese	106	14		26	19	80	13
Preterm delivery ^b							
<37 wk gestation	249	6	.71	37	5	212	6
≥37 wk gestation	496	94		97	95	399	94
Infant birth weight ^b							
<2500 g	194	3	.18	30	3	164	3
≥2500 g	605	97		115	97	490	97
Psychosocial							
Life events distress							
None	208	27	.01	24	16	184	29
Low	219	28		40	26	179	28
Moderate	184	23		39	25	145	23
High	188	22		42	34	146	19
Maternity leave							
Job offers maternity leave							
No	270	32	.80	55	35	215	31
≤6 wk	187	27		37	27	150	26
6–12 wk	225	32		36	31	189	32
>12 wk	78	10		11	7	67	10
Postpartum leave taken							
≤6 wk	78	11	<.0001	28	24	50	8
6–12 wk	283	39		67	48	216	37
>12 wk	151	17		13	6	138	20
Not yet returned to work	258	33		35	22	223	36
Antenatal leave in ninth month (if pregnant >36 wk)							
No time off	384	77	.40	75	83	309	76
Took leave	98	23		13	17	85	24
Other occupational							
Occupation							
Manager	390	49	.002	47	33	343	53
Nonmanager	409	51		98	67	311	47

TABLE 1 Continued

Characteristic	N	Weighted % ^a	Weighted P	Breastfeeding not Established		Breastfeeding Established	
				N	Weighted Column % ^a	N	Weighted Column %
Physically demanding work (lifting, bending, or heavy machinery)							
No	549	69	.22	98	63	451	70
Yes	250	31		47	37	23	30
Work shift							
Day	644	19	.10	112	75	532	83
Other	155	81		33	25	122	17
Worked from home							
Yes	393	52	.60	80	55	313	51
Commuted to work	394	48		63	45	331	49
Time at current job							
<1 y	99	13	.27	22	17	77	12
≥1 y	684	87		117	83	567	88
Employees at company							
1–9	125	15	.66	27	18	98	14
10–50	212	26		36	25	176	26
50–250	184	23		37	26	147	22
>250	273	36		45	32	228	38
Job is fulfilling							
Yes	587	72	.003	96	59	491	76
No	212	28		49	41	163	24
Job is flexible							
Yes	374	48	.48	66	45	308	49
No	424	52		79	55	345	51
Decision							
Low autonomy	353	42	.008	77	56	276	39
High autonomy	445	58		68	44	377	61
Demand							
Low demand	407	51	.63	80	48	327	51
High demand	391	49		65	52	326	49
Job strain							
High decision/ low demand	211	29	.05	33	19	178	31
High decision/high demand	55	29		35	25	20	30
Low decision/low demand	196	22		47	29	149	20
Low decision/ high demand	157	20		30	27	127	19

Data are for breastfeeding for ≥30 days.

^a Percentages are weighted to reflect sampling probabilities and, therefore, may differ from percentages calculated from unweighted numbers.

^b Race, PTD, and birth weight are closely related to sampling strata.

establish breastfeeding was return to work after maternity leave within 6 weeks of delivery (OR: 4.49 [95% CI: 2.04–9.90]), followed by return within 6 to 12 weeks

(OR: 2.42 [95% CI: 1.28–4.56]; Table 2). Having a managerial position (OR: 0.49 [95% CI: 0.28–0.85]) or fulfilling job (OR: 0.50; [95% CI: 0.29–0.87]) was protec-

TABLE 2 Unadjusted and Adjusted ORs for Failure to Establish Breastfeeding According to Maternity Leave Duration, Managerial Position, and Job Fulfillment

Variable	Unadjusted (N = 770)		Adjusted for Education and Income (N = 764)		Adjusted for Race (N = 770)		Adjusted for Parity, Married/Cohabiting (N = 770)		Adjusted for Psychosocial Stress (N = 770)	
	OR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
Not yet returned	Ref		Ref		Ref		Ref		Ref	
≤6 wk	4.49	2.04–9.90	4.55	1.99–10.39	4.42	2.02–9.67	3.88	1.73–8.71	4.09	1.85–9.04
6–12 wk	2.42	1.28–4.56	2.28	1.16–4.50	2.70	1.41–5.16	2.25	1.18–4.29	2.28	1.19–4.37
>12 wk	0.59	0.21–1.64	0.58	0.21–1.65	0.57	0.20–1.67	0.55	0.20–1.55	0.58	0.21–1.60
Manager vs other	0.49	0.28–0.85	0.51	0.28–0.95	0.52	0.29–0.94	0.59	0.34–1.04	0.50	0.28–0.87
Fulfilling vs unfulfilling	0.50	0.29–0.87	0.57	0.33–0.99	0.47	0.26–0.83	0.57	0.31–1.04	0.55	0.31–0.97

Each column represents an independent model, including the three main covariates at left, with adjustments as indicated. Maternal age was not included, because it did not independently associate with outcome, or alter the odds ratios of the main covariates. aOR indicates adjusted OR; Ref, reference.

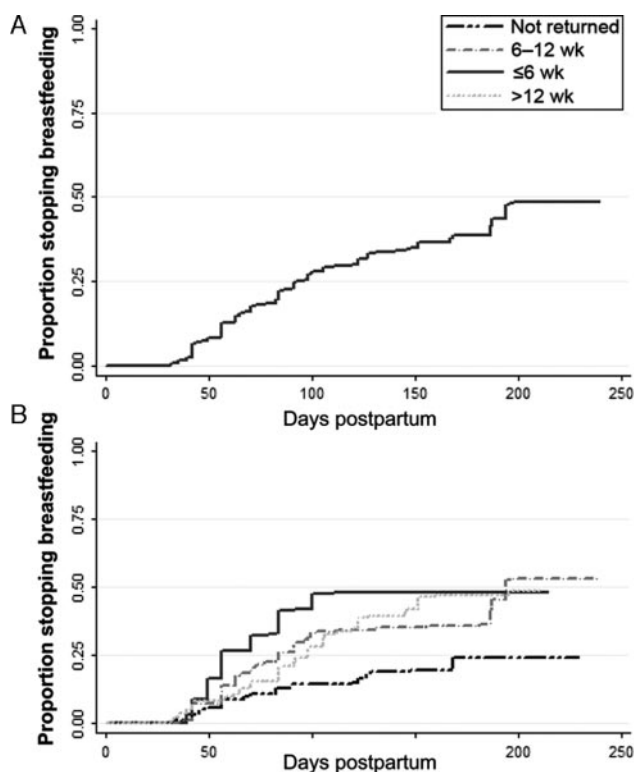


FIGURE 1 Breastfeeding cessation, Kaplan-Meier failure assessment. A, All subjects; B, according to length of maternity leave.

tive. Substituting job autonomy for managerial position in the model gave similar ORs for all of the covariates. Antenatal leave taken in the ninth month was not associated with establishment and did not change the ORs when included in the model (data not shown). Although the small sample size precluded us from including all of the covariates in the model simultaneously, adjusting separately for the potential confounding of education, income, race, parity, married/cohabiting status, and psychosocial stress did not alter the results.

Breastfeeding Duration

Among women who established breastfeeding, 65% were still breastfeeding at time of interview (53% of all subjects). Of women who returned to work, 50% were still breastfeeding. Of those who had weaned, 23% discontinued during the month before returning to work, 29% during the first month after returning, and another 20% during the second month after returning. Kaplan-Meier failure plot of breastfeeding cessation showed a steady increase over time in the number of women who stopped breastfeeding, and this varied by length of leave (Fig 1).

Bivariate survival analysis indicated that returning to work and short postpartum leave were related to earlier breastfeeding cessation, and having a manager position, autonomous position, or flexible work schedule was associated with longer breastfeeding duration (data not shown). Antenatal leave was not associated with duration. Women who had not returned to work at interview time had the least cessation and were treated as the reference group. Of the latter, 85% were interviewed after 12 weeks postpartum and none before 6 weeks. Because 15% of mothers in the reference group were interviewed between 6 and 12 weeks postpartum, we performed a sensitivity analysis in which these mothers were grouped first with nonreturned subjects, then with the group returning at 6 to 12 weeks, and finally with the group returning after 12 weeks. The conclusions of the survival model were unaffected, so these women remained in the nonreturned group.

In a multivariate model including occupational factors, returning to work within 6 weeks was the strongest predictor of breastfeeding cessation (HR: 3.40 [95% CI: 1.57–7.34]; Table 3). Returning to work in 6 to 12 weeks or after 12 weeks also increased the probability of cessation by more than twofold compared with nonreturnees, and no significant difference between these 2 groups was seen on tests of equality. Having an inflexible job increased the probability of cessation (HR: 1.47 [95% CI: 1.00–2.16]), and having a managerial position was protective (HR: 0.60 [95% CI: 0.39–0.82]). Job fulfillment and antenatal leave did not influence cessation or alter the HRs of other variables when included in the model (data not shown). Adjusting for education, income, par-

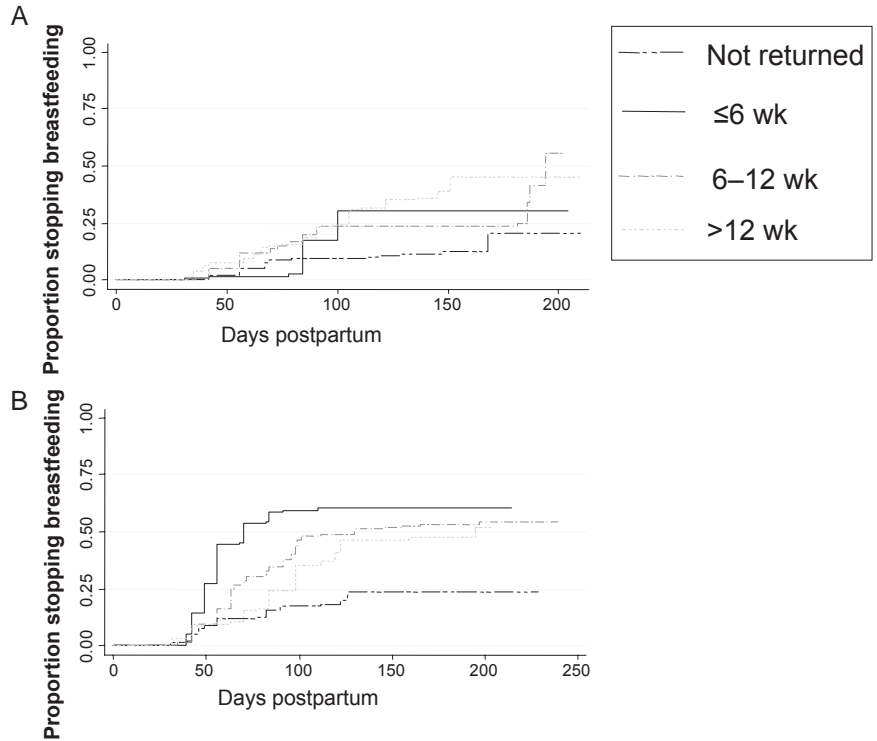
TABLE 3 Unadjusted and Adjusted HRs for Breastfeeding Cessation Among Mothers Who Establish Breastfeeding, According to Maternity Leave Duration, Job Flexibility, and Managerial Position

Variable	Unadjusted (N = 625)		Adjusted for Education and Income (N = 620)		Adjusted for Race (N = 625)		Adjusted for Parity, Married/Cohabiting (N = 625)		Adjusted for Psychosocial Stress (N = 625)	
	HR	95% CI	aHR	95% CI	aHR	95% CI	aHR	95% CI	aHR	95% CI
Postpartum leave										
Not returned	Ref		Ref		Ref		Ref		Ref	
≤6 wk	3.40	1.57–7.34	3.47	1.63–7.38	3.49	1.60–7.61	3.52	1.67–7.43	3.36	1.55–7.30
6–12 wk	2.38	1.39–4.08	2.11	1.20–3.73	2.44	1.42–4.19	2.38	1.36–4.13	2.35	1.37–4.04
>12 wk	2.70	1.54–4.74	2.65	1.51–4.66	2.77	1.57–4.88	3.13	1.77–5.55	2.70	1.53–4.77
Inflexible job vs flexible	1.47	1.00–2.16	1.35	0.90–2.01	1.46	0.99–2.15	1.33	0.91–1.96	1.45	0.98–2.14
Manager vs other	0.60	0.39–0.82	0.63	0.41–0.96	0.54	0.36–0.82	0.57	0.38–0.85	0.58	0.40–0.84

Each column represents an independent model, including the 3 main covariates at left, with adjustments as indicated. Maternal age was not included, because it did not independently associate with outcome or alter the ORs of the main covariates. aHR indicates adjusted HR; Ref, reference.

FIGURE 2

Effect of maternity leave on breastfeeding cessation according to position, Kaplan-Meier failure assessment. A, Managers; B, nonmanagers.



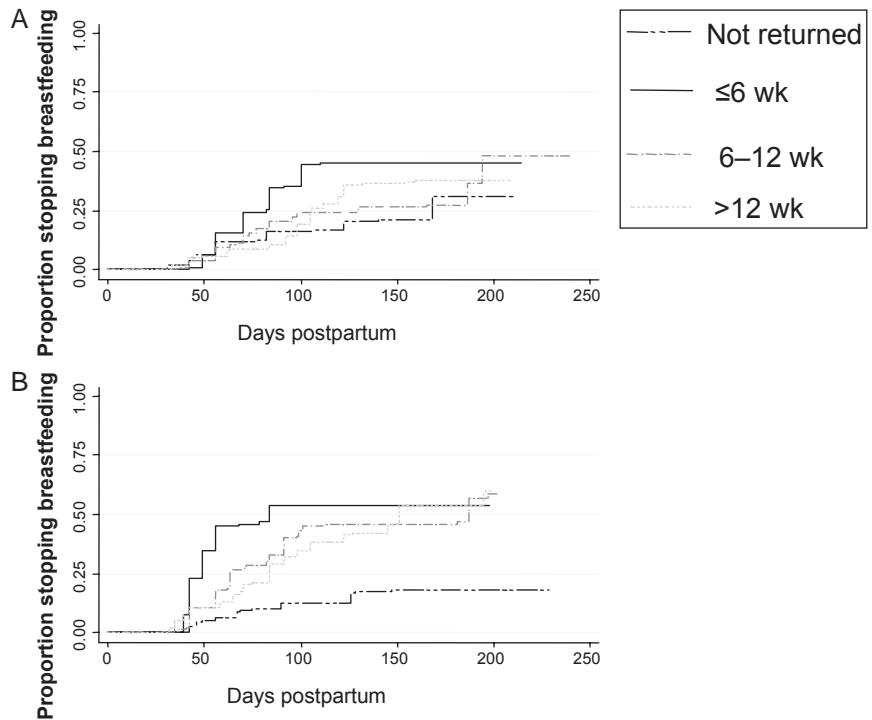
ity, married/cohabiting status, race, or psychosocial stress made little difference in HR point estimates.

The failure plots by managerial status and work flexibility suggest that return to work before 12 weeks had a stronger impact on women in nonmanagerial positions and inflexible jobs (Figs 2 and 3). Similarly, women with

high psychosocial distress were more strongly affected by early return (data not shown). This effect was strongest for women who returned within 6 weeks. The HR for breastfeeding cessation in these early returnees increased from 3.04 (95% CI: 1.43–6.45) overall to 4.14 (95% CI: 1.68–10.21) in nonmanagers, 5.12 (95% CI:

FIGURE 3

Effect of maternity leave on breastfeeding cessation according to job flexibility, Kaplan-Meier failure assessment. A, Flexible jobs; B, inflexible jobs.



1.68–15.64) in workers with inflexible jobs, and 4.15 (95% CI: 1.45–11.86) in women with high psychosocial distress. CIs were wide because of small numbers.

DISCUSSION

Our study adds to the evidence^{9,25,26} that short postpartum maternity leave among full-time working mothers is associated with higher risk of early breastfeeding cessation. Specifically, we found that a maternity leave of ≤ 6 weeks or between 6 and 12 weeks was associated, respectively, with over fourfold and twofold increased odds of not establishing breastfeeding, after adjusting for covariates. Furthermore, women whose maternity leaves were within 6 weeks had a more than threefold increased risk of early breastfeeding cessation after successful establishment relative to women not returning to work. Returning to work at 6 to 12 weeks or even after 12 weeks was associated with a more than twofold increased risk of cessation compared with nonreturnees, after adjusting for covariates.

According to our findings, the negative effects of short (≤ 12 weeks) postpartum maternity leave on early breastfeeding cessation may be stronger in subgroups of women working in inflexible or nonmanagerial jobs. Women with high psychosocial distress seem more prone to stop breastfeeding on an early return to work. For them, juggling life, work, and breastfeeding may be particularly difficult.

In contrast, antenatal leave in the ninth month of pregnancy was not associated with breastfeeding establishment or duration overall or in specific occupational subgroups, with or without controlling for covariates. These results suggest that successful breastfeeding is more closely related to postpartum events than to late antenatal leave.

The United States has limited maternity leave provisions. The federal leave program allows for 12 weeks of unpaid job-protected leave during pregnancy or after childbirth. The law excludes companies with < 50 employees, part-time employees, and those working in informal labor markets. Many nonaffluent workers do not take leave because they cannot forego pay, are not covered, or are unaware of their eligibility,³² and that can be very stressful.³³ Our findings show that whether maternity leave benefits were offered by employers had no effect on breastfeeding unless exercised. This suggests that merely establishing maternity leave policies without encouraging their use and making them economically feasible do not suffice to promote breastfeeding success.

Our findings corroborated those of others,^{18,25,34} that job autonomy and fulfillment contribute to breastfeeding establishment, whereas job flexibility by enabling mothers to express milk when needed contributes to breastfeeding duration. Consistent with the study of Kimbro et al,¹⁸ we found that women who returned to work were most likely to wean between the month before and 2 months after the return to work. Although many women indicated that work was a reason for stopping breastfeeding, we do not know to what extent breastfeeding may have influenced the decision and timing of returning to work. Similar to other studies,^{18,20,35}

we find these behaviors closely timed, suggesting that they influence each other.

Our findings require cautious interpretation. More than half of the subjects were still breastfeeding at the time of interview (average: 4.5 months), limiting our information on the impact of work on later breastfeeding cessation. We were unable to confirm subjects' employment and benefits, leave patterns, or whether work hours after leave were similar to those before taking leave. The sample may not reflect California's obstetric population of working women because it was somewhat older and included fewer black and Hispanic and more white women than expected. However, the breastfeeding initiation rate among our subjects (82%) was similar to the statewide rate (84%).³⁶ We also sampled before implementation of the Family Leave Program in California in 2004 and did not assess workplace lactation facilities and support.

CONCLUSIONS

Despite these limitations, we conclude that postpartum maternity leave may have a positive effect on breastfeeding among full-time workers, particularly those in nonmanagerial positions, lacking job flexibility, or experiencing psychosocial stress. Given the large number of women who return to work or school in the first 3 months after childbirth, policies and practices are needed that support the minimal goal of 6 months of exclusive breastfeeding. Pediatricians should encourage women to take maternity leave and advocate for extending paid postpartum maternity leave and increased flexibility in working conditions for breastfeeding women.

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Juggling Work and Breastfeeding: Effects of Maternity Leave and Occupational Characteristics

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