

# Maternal employment and breastfeeding: results from the longitudinal study of Australian children

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## Abstract

**Aim:** To investigate the effect of maternal postnatal employment on breastfeeding duration in Australia in the first 6 months after birth.

**Method:** Secondary data analysis of the infant data (2004) from the Longitudinal Study of Australian Children (LSAC). Complete maternal and breastfeeding data were available for 3697 infants. Multivariable logistic regression was used to investigate the effect of timing of resumption of maternal employment and maternal employment status on breastfeeding at 6 months postpartum after adjustment for maternal education, maternal age, maternal smoking during pregnancy and socioeconomic status of the child's area of residence.

**Results:** Fewer women employed full-time were breastfeeding their infants at 6 months (39%) than nonemployed women (56%). Participation in full-time employment before 6 months had a strong, negative effect on the likelihood of continuing breastfeeding for 6 months, adjusted OR = 0.35 (95%CI: 0.22–0.55). Compared to nonemployed women, fewer women in part-time employment were breastfeeding at 6 months (44%), adjusted OR = 0.49 (95% CI: 0.37–0.64).

**Conclusions:** Results from this large representative cohort of Australian infants confirm that maternal employment in the first 6 months of life contributes to premature cessation of breastfeeding even when known risk factors for breastfeeding cessation are controlled for.

## INTRODUCTION

Current rates of breastfeeding in Australia are lower than the World Health Organization recommendation for exclusive breastfeeding for the first 6 months of life (1). Only 49% of Australian infants receive any breast milk at 6 months postpartum (2). Several factors contributing to the early cessation of breastfeeding have been identified including maternal age less than 25 years (3,4), maternal smoking (5,6) and low levels of maternal education (4). Given that a range of psychosocial factors interfere with women's ability to offer infants 6 months of exclusive breastfeeding, it is possible that maternal participation in the paid workforce, necessitating that the infant spends regular time in nonmaternal care, has a negative effect on breastfeeding duration.

Internationally, research has consistently found that full-time employment in the first postpartum year has a strong negative effect on breastfeeding duration (7,8). Part-time employment seems to exert little or no effect on breastfeeding duration, as mothers employed part-time in the first year following birth have similar breastfeeding duration to nonemployed mothers of infants (7,9,10).

Currently, nearly 40% of Australian mothers resume employment in the first 12 months following childbirth (11), but it is not known whether the timing of employment, and employment status on resumption pose a risk to breastfeeding duration. A recent study in the United States suggests that

mothers most likely to successfully combine paid employment with breastfeeding are older and more highly educated (9). As increased age and higher education contribute to both postnatal employment and longer breastfeeding duration in all mothers, it is difficult to establish the independent effect of paid employment without adjusting for these factors. Two Australian studies investigating the independent effect of maternal postnatal employment on breastfeeding duration have had mixed results (3,6). Both studies recruited participants from public maternity hospitals only, thus the generalizability of their findings is limited.

The aim of this paper is to use data from Growing Up in Australia: the Longitudinal Study of Australian Children (LSAC) (12) to examine the effect of maternal postnatal employment on breastfeeding duration in a large representative cohort of infants in the first 6 months after the birth.

## METHODS

The LSAC is an ongoing longitudinal study of Australian children's growth and development. Approval to conduct the study was obtained from the Australian Institute of Family Studies Ethics Committee. The sampling, recruitment and data collection for LSAC have been reported in detail elsewhere (12,13). The final sample is broadly representative of all Australian children, and for almost all characteristics, the sample distribution is only marginally different to the Census distribution.

The analysis for this study was based on Wave 1 data from the infant cohort of children aged less than 12 months in 2003–2004. The primary outcome for this study was whether the child was still receiving any breast milk, not necessarily exclusively, at 6 months postpartum. Mothers' recall of breastfeeding duration has been demonstrated to be accurate to within a few weeks (14), particularly if the recall period is less than 12 months. The analysis was limited to infants who were over 6 months at the time of interview and for whom there was complete data about the following: breastfeeding duration, maternal postpartum employment (full-time  $\geq 30$  h per week, part-time  $<30$  h per week, or casual status of variable hours each week), highest level of maternal education, maternal age, level of socioeconomic disadvantage of the geographical location of the child's household, and maternal smoking during the index pregnancy.

Socioeconomic status of the geographical location of the child's household was measured using the Index of Relative Socioeconomic Disadvantage (SEIFA) (15). This is a summary measure, based on Census data, of the general socioeconomic conditions in a Census collection district (about 250 urban dwellings). Areas with a higher SEIFA index are more socioeconomically advantaged. In this analysis, the distribution of index values are summarized into deciles and treated as a continuous variable.

Multivariable logistic regression was performed on the primary outcome of any breastfeeding at 6 months for employed and nonemployed mothers. Maternal age, educational attainment, SEIFA index and smoking during pregnancy were controlled for. Stata 10 (Statacorp, College Station, TX, USA) (16) was the statistical software used for the analysis.

## RESULTS

Seventy two percent ( $n = 3697/5104$ ) of the infant cohort met inclusion criteria for this analysis, at a mean infant age of 43 weeks, range 27–79 weeks. Characteristics of the study sample compared with relevant Australian data are presented in Table 1. The majority of women (2765/3697, 75%) had not resumed any employment by 6 months postpartum. Of the total sample, the proportion of all mothers, employed or not, continuing to give their infants any breast milk at 6 months (95% CI) was 54% (52–57%).

Mothers' employment status (full-time, part-time or casual), timing of resumption (between 0 and 3 months or between 3 and 6 months) and the proportion of infants

**Table 2** Mothers' employment and infant breastfeeding status at 3 and 6 months

Employment status (n)	Infants receiving any breast milk at 6 months	
	n	% (95% CI)
0–3 months		
Full-time (62)	27	42 (30–54)
Part-time (180)	105	56 (48–64)
Casual (142)	80	55 (47–64)
3–6 months		
Full-time (91)	36	39 (28–50)
Part-time (245)	116	44 (37–51)
Casual (212)	108	48 (41–55)
Not employed at 6 months (2765)	1616	56 (54–59)
Total (3697)	2088	54 (52–57)

receiving any breast milk at 6 postpartum months in each employment category is presented in Table 2. The lowest proportion of infants receiving any breast milk at 6 months were those whose mothers had resumed full-time employment either before 3 months (42%) or between 3 and 6 months after the birth (39%). Compared to nonemployed mothers, infants of employed mothers had a more rapid cessation of breastfeeding (Fig. 1). At 9 months, only 26% of infants of mothers employed full-time were receiving any breast milk, while 45% of nonemployed mothers were continuing to breastfeed. Adjusted odds ratios for the multivariable logistic regression performed on the primary outcome of (any) breastfeeding at 6 months are presented in Table 3. Paid employment, maternal smoking during pregnancy with the study child, SEIFA index, maternal age and the highest educational qualification attained by the mother were adjusted for in the model.

Compared to women who were not employed at 6 months postpartum, women who resumed full-time employment were significantly less likely to be breastfeeding their 6-month-old infants. Employment resumption between 3 and 6 months in a part-time or casual capacity was also significantly more likely to reduce the probability of breastfeeding at 6 months, when age, education, socioeconomic disadvantage and maternal smoking were adjusted for in the model. Mothers who smoked while they were pregnant with the study infant were less likely to maintain breastfeeding for 6 months. Maternal age of 30 years or above, higher educational attainment such as a Diploma or a University Degree, and residence in a more socioeconomically advantaged area contributed to breastfeeding continuing for at least 6 months.

## DISCUSSION

This study found that Australian mothers' participation in employment in the first 6 months following childbirth had a negative impact on breastfeeding duration. New evidence from this large, representative cohort study indicates that full-time, part-time and casual employment before 6

**Table 1** Characteristics of study sample

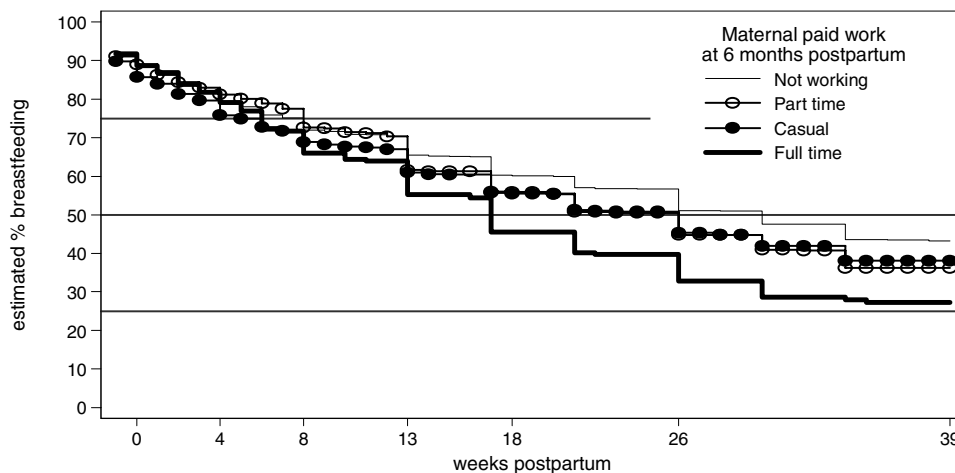
	Study sample	Australian comparison
Maternal age at birth	31.3 years	31.1 years*
University education	34.5%	21% <sup>†</sup>
Smoked during pregnancy	16.2%	20% <sup>‡</sup>
Any breastfeeding at 6 months (%)	56.5%	49% <sup>§</sup>

\*Australian Bureau of Statistics. Births Australia 2005 (17).

<sup>†</sup>Australian Bureau of Statistics. Education and Work Australia, 2006 (18).

<sup>‡</sup>Najman et al., 1998 (19).

<sup>§</sup>Donath and Amir, 2005 (2).



**Figure 1** Breastfeeding duration for nonemployed and employed women, 0–39 weeks postpartum.

**Table 3** Multivariate analysis: breastfeeding at 6 months

	Adjusted odds ratio (OR)*	95% Confidence interval
<b>Maternal employment<sup>†</sup></b>		
0–3 months, full-time employment	0.42	0.25–0.73
0–3 months, part-time employment	0.87	0.64–1.21
0–3 months, casual employment	0.90	0.62–1.29
3–6 months, full-time employment	0.35	0.22–0.55
3–6 months, part-time employment	0.49	0.37–0.64
3–6 months, Casual employment	0.72	0.54–0.97
Smoked during pregnancy with study infant	0.46	0.38–0.56
<b>Maternal age<sup>‡</sup></b>		
15–19 years	0.76	0.43–1.33
20–24 years	0.94	0.72–1.24
30–34 years	1.27	1.06–1.52
35–39 years	1.51	1.22–1.87
40 years and above	1.52	1.08–2.12
<b>Maternal highest educational attainment<sup>§</sup></b>		
Completed secondary education	1.37	1.06–1.76
Certificate	1.33	1.06–1.66
Diploma or advanced diploma	1.96	1.48–2.61
University degree	3.33	2.64–4.21
Other	2.21	1.08–4.49
SEIFA index decile	1.03	1.01–1.06

\*Multivariable logistic regression of breastfeeding at 6 months, adjusted for paid work, maternal smoking, maternal age, maternal education and SEIFA index decile.

<sup>†</sup>Compared to women not employed at 6 months.

<sup>‡</sup>Compared to women aged 25–29 years.

<sup>§</sup>Compared to women with incomplete secondary school.

postnatal months interferes with maintaining breastfeeding, even when maternal age, educational attainment, socioeconomic status and maternal smoking are taken into account. Although the study relied on retrospective recall of breastfeeding duration, it is likely that women would overestimate

rather than underestimate their own breastfeeding duration. Any recall bias would therefore mean that the results noted in this study would be an underestimate rather than an overstatement of the impact of employment on breastfeeding duration.

As expected, full-time employment had a strong, negative effect on the likelihood of mothers continuing to breastfeed for the recommended first 6 months of their infant’s life. Mothers returning to full-time employment within 3 months of the birth had more than double the odds of ceasing breastfeeding before 6 postpartum months than nonemployed mothers. Resuming full-time employment between 3 and 6 months postpartum trebled the odds of breastfeeding cessation before the infant reached 6 months of age.

The surprising finding in this study is that resuming either part-time employment of less than 30 h per week, or casual employment of variable hours also had a strong negative effect on the likelihood of continuing to breastfeed for 6 months. American studies have found that mothers employed on a part-time basis have similar breastfeeding duration to that of nonemployed mothers (7,9), presumably as their working week is shorter, necessitating less time away from their infant. The present study however found that the negative effect on breastfeeding duration of part-time employment resumed after 3 months was almost as large as that of mothers resuming full-time before 3 months. Of the 40% of Australian women who resume employment in the first postpartum year, over 40% resume part-time, for less than 35 h per week (11). It seems that this reduced working week however does not contribute to mothers’ ability to maintain breastfeeding for 6 months. Part-time employment too is therefore a risk factor for early breastfeeding cessation in Australian mothers.

It is not clear why this effect is observed in Australia yet not in other comparable countries. It is possible that there is a marked absence of workplace support for breastfeeding in Australian workplaces. The difficulty of combining paid

employment and breastfeeding has been well documented. A lack of privacy, fatigue, inflexible work schedules, and unsupportive employers and colleagues have all been noted as barriers to maintaining breastfeeding once participation in paid employment has resumed following birth (4,8). It is possible that once the infant has reached 3 months of age, both employers and employees may feel that the provision of even minimal support for breastfeeding and breast milk expression is no longer sustainable, and that women need to promptly resume their prebirth capacity (20). In addition, there are no existing experimental trials of workplace interventions to promote breastfeeding duration (21), and the provision of workplace support for breastfeeding mothers remains a matter for individual negotiation. In this context, it is not surprising that any employment participation, even of reduced weekly hours, determines the end of breastfeeding for many mothers, particularly in the first 6 months of the infant's life when the demands of breastfeeding are frequent, both day and night.

As the results of this study demonstrate, maternal post-natal employment has a negative effect on the likelihood of maintaining breastfeeding for 6 months, and this in turn has an impact on child health outcomes. Initiatives to promote breastfeeding should therefore include strategies at the policy and workplace level. As there is no current legislative provision for paid maternity leave in Australia, many women resume employment sooner than they prefer for financial reasons and this interferes with the establishment of breastfeeding (22). Further research is needed to understand which policy and workplace initiatives, be it the provision of lactation breaks, employer education, or the introduction of paid maternity leave have a measurable, positive effect on mothers' ability to offer their infants breast milk for at least 6 months duration.

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