An Evaluation of a Telephone-Based Post-Natal Support Intervention for Infant Feeding in a Regional Australian City

Anthony Bruce Fallon *BAppSc(Hons) PhD*

Desley Hegney *RN RM BA(Hons) PhD*

Maxine O'Brien *BSc(Hons)*

Wendy Brodribb *AM, MBBS, IBCLC*

Maree Crepinsek

Jackie Doolan

Author Affiliations:

Tony Fallon, Desley Hegney, Maxine O'Brien, Wendy Brodribb, Maree Crepinsek, and Jackie Doolan are at the Centre for Rural and Remote Area Health, University of Southern Queensland/University of Queensland, Toowoomba.

A grant from the Australian Department of Health and Ageing, through the National Child Nutrition Program, provided the funds for this study conducted in Toowoomba, Queensland.

Address correspondence to:

Dr Tony Fallon

Centre for Rural and Remote Area Health

Q Block, University of Southern Queensland,

Toowoomba, QLD 4350, Australia.

Telephone: +617 4631 5455

E-mail: fallon@usq.edu.au

Abstract

Background: Postnatal breastfeeding support in the form of home visits is difficult to accommodate in regional Australia, where hospitals often deal with harsh economic constraints in a context where they are required to provide services to geographically dispersed consumers. This study evaluated a predominately telephone-based support service called the Infant Feeding Support Service. **Methods:** A prospective cohort design was utilised. Data for 696 women giving birth in two regional hospitals (one public, one private) and participating in the support service between January and July 2003 was compared with data from a cohort of 625 women who gave birth in those hospitals prior to the introduction of the support servie. Each mother participating in the support service was assigned a lactation consultant. First contact occurred 48 hours after discharge, and approximately weekly thereafter for 4 weeks. Breastfeeding duration was measured at three months postpartum. **Results:** For women from the private hospital, the support service improved exclusive breastfeeding duration to 4.5 weeks postpartum, but these improvements were not evident at three months postpartum. No effects were observed for mothers from the public hospital. Quantitative and qualitative data demonstrated high levels of client satisfaction with the support service. **Conclusions:** This small-scale predominately telephone-based intervention provided significant, though apparently context-sensitive, improvements to exclusive breastfeeding duration.

An Evaluation of a Telephone-Based Post-Natal Support Intervention for Infant Feeding in a Regional Australian City

Exclusive breastfeeding, the use mother's milk as the child's sole source of nourishment, excluding even consumption of water or teas (1), is regarded and internationally promoted as the ideal method of feeding infants during the first six months of an infant's life (2). There is increasing evidence that feeding an infant artificial formula and/or the early introduction of solids to an infant's diet contribute to short- and long-term infant morbidity and mortality, and that exclusive breastfeeding to six months postpartum maximises the health of both infant and mother throughout the lifespan (3). Breastfeeding rates at hospital discharge in Australia are around 90 percent, but duration of exclusive breastfeeding falls well short of national targets of 80 percent and 50 percent at three and six months postpartum, respectively (4, 5).

Systematic reviews of support interventions designed to increase breastfeeding duration provide mixed results. Sikorski, Renfrew, Pindoria and Wade (3) examined the influence of different types of support upon breastfeeding duration. Their conclusion provided evidence for a beneficial effect of both peer and health professional support on breastfeeding duration, particularly in environments where initiation rates were above 80 percent. While face-to-face interventions were observed to be effective, telephone-based support interventions were not. Couta de Oliveira, Bastos Comacho, and Tedstone (6) arrived at similar conclusions, adding that successful interventions were characterised by their long-term, intensive nature, with unsuccessful strategies being characterised by their small scale and lack of face-to-face interaction. Dennis (7), in her review of interventions conducted between 1990 and 2000, found evidence for the effectiveness of peer support, but no evidence for long-term effects of health

professional support, on breastfeeding duration. These reviews, however, have been criticised in that they make no distinction between interventions conducted in developed versus undeveloped countries (8). On this basis, Guise et al. (8) conducted a systematic review of interventions in developed countries. They concluded that professional breastfeeding support, whether telephone-based or face-to-face, increased both short-term and long-term breastfeeding duration. Guise et al., however, did not distinguish between telephone-based and face-to-face interventions.

To our knowledge, only three professional support interventions have been primarily telephone-based. These interventions show mixed results, with one improving breastfeeding duration (9), one having no effect on breastfeeding duration (10), and another improving breastfeeding in the short-term but not the long-term (11). An additional concern is that most studies of breastfeeding support interventions in developed countries have been conducted outside of the Australian context. Only two Australian studies have evaluated the effect of postnatal interventions. Lawlor-Smith, McIntyre and Bruce (12) attached a breastfeeding support service to a general practice, and compared breastfeeding duration for women in this period with those attending the practice prior to the intervention. Women accessing the service breastfed for longer. In contrast, Redman, Booth, Smyth, and Hall (13) conducted an intensive intervention including face-to-face individual and group sessions, scheduled telephone contact and support groups on a sample of Australian women. This intervention had no effect on breastfeeding duration.

Thus, there exists a gap in knowledge regarding the effectiveness of postnatal telephone-based infant feeding support services within the Australian context. The effectiveness of this support is particularly important to consider in this context, as a

significant number of women live in rural and remote areas. The provision of postnatal home visits to these areas is uneconomical and sometimes impossible. The aim of this study was to evaluate the effectiveness of such a service, known as the Infant Feeding Support Service. Utilising a prospective cohort design, the impact of this support service upon breastfeeding duration for mothers giving birth in two regional hospitals – one publicly funded and the other privately funded – was ascertained. Data on satisfaction with the support service were also collected.

Method

The city of Toowoomba is situated about 110 km west of Brisbane, Australia, and has a population of approximately 89,000 people. Two maternity hospitals (Toowoomba Health Service and St Vincent's Hospital) service this regional city and its rural and remote catchments. Two cohorts from these hospitals were utilised. The baseline cohort included all women who gave birth between July 10 and November 30, 2001. The intervention cohort included all women giving birth between January 1 and July 18, 2003. Mothers were excluded from participating if they had no home telephone contact, had insufficient understanding of English, lived outside Australia, or their baby did not survive.

For the baseline cohort, data on breastfeeding at discharge was collected in a discharge survey. Approximately 80 percent of these surveys were completed prior to discharge, with the remainder conducted by telephone shortly after discharge. For the intervention cohort, breastfeeding data were collected on entry to the service within 48 hours post-discharge. Breastfeeding behaviour was classified into exclusive breastfeeding, where breast milk was *the* child's sole source of nourishment, and *partial breastfeeding*, which included all mothers who were exclusively breastfeeding as well

as those who were continuing to provide breast milk on a regular basis but had either introduced artificial milk (bottle feeding according to the World Health Organisation (WHO) classification of breastfeeding behaviour (1)) or solids into the infant's diet (complementary feeding according to the WHO classification). Data used to calculate exclusive and partial breastfeeding duration were collected by telephone interview at three months postpartum for both cohorts. Identical questions were utilised to ascertain breastfeeding data from both cohorts. Data on satisfaction with the support service from the intervention cohort were collected via a single-item global rating of service satisfaction and two open-ended questions designed to gather information on likes, dislikes, and ideas for improving the service.

Women were initially approached to participate in the study by either the midwife in charge of the ward or an support service lactation consultant. Each participant in the intervention cohort was randomly assigned a case manager from the three lactation consultants employed on the support service. Contact with mothers in this cohort occurred approximately 48 hours after discharge and approximately weekly thereafter for a further three contacts. At each contact, participants were asked about their feeding, if they were experiencing difficulties with infant feeding or had questions about feeding. The content of the initial part of the interviews was largely directed by the participant's response to this prompt and the lactation consultant's expert knowledge of breastfeeding difficulties. If difficulties were reported, the case manager attempted to solve them over the telephone, or suggest an appropriate support service in the woman's community. Home visits were only provided when the woman lived within 25 km of Toowoomba, was considered by the case manager to require more intensive feeding support, was not able to be referred to other home visiting services or supports that

could assist her, and the participant indicated that she wanted a home visit from the lactation consultant. In the latter part of the interview, participants were given prompts about common breastfeeding issues, such as the let-down reflex, supply and demand, breast and nipple care, and growth spurts and appetite increases. These prompts often identified previously unidentified issues or knowledge deficits from which further discussion was engendered. Prior to the termination of the interview, participants were once again asked if they had any more questions. In subsequent interviews, the same questions were asked of the participants. Additionally, infant feeding problems identified in previous interviews were followed up. Following the woman's final interview, a research assistant telephoned mothers to conduct a satisfaction survey. Mothers were then followed up at three months postpartum only to ascertain information about infant feeding. For both cohorts, definitions were provided to the participants for exclusive and partial breastfeeding. Participants were asked how they were feeding their baby, how long they had exclusively breastfed since birth, and how long they had partially breastfed since birth.

Quantitative data were analysed using SPSS for Windows (Release 12.0.1) (14). Demographic data from the two cohorts were compared. Differences in breastfeeding rates at discharge across hospital for the two cohorts were then evaluated. In both analyses, cross-tabulations with chi-squared tests of significance were utilised for categorical variables. Between-groups analysis of variance (ANOVA) was utilised when the dependent variable was continuous in nature. For women who were breastfeeding, differences in exclusive and partial breastfeeding duration to 4.5 weeks (the approximate duration of the intervention) and 3 months were examined using sequential Cox regression. Cox regression enables investigation of the effect of several variables

upon the time a specified event, in this case the cessation of either exclusive or partial breastfeeding, takes to happen. The potentially confounding covariates of parity, age, marital status, and employment status were entered in the first step of the regression, with study phase (intervention cohort vs. baseline cohort) being entered at Step 2. Finally, an independent-groups *t*-test was utilised to compare global satisfaction ratings across hospitals. Sequential Bonferroni adjustments of significance levels were used to control for familywise error rates in all post-hoc comparisons.

Open-ended questions on satisfaction were transcribed verbatim and emerging themes and patterns were identified. To increase the reliability of the analysis, two members of the research team independently conducted analyses and compared findings.

Results

Demographic Data

A flowchart outlining participation rate information is provided in Figure 1. Overall participation rates were higher for the baseline cohort (66.5%) than the intervention cohort (56.3%), χ^2 (1) = 23.19, $p < 0.001$. The high participation rate of women from the private hospital (83.9%) was primarily responsible for this. Women from the private hospital in both cohorts were more likely to participate, χ^2 (1) = 147.14, $p < 0.001$ and χ^2 (1) = 23.98, $p < 0.001$, respectively. Loss to follow-up of women who began participation in the study was the same across cohorts, χ^2 (1) < 1, $p > 0.05$, and across hospital within each cohort (public - χ^2 (1) = 3.49, $p > 0.05$; private - χ^2 (1) < 1, $p > 0.05$, respectively).

Differences in demographic variables across cohorts and across hospitals within each cohort are presented in Table 1. Women from the intervention cohort were more

likely to be primiparous, χ^2 (1) = 9.08, p = 0.003. Women from the private hospital were older, F(1, 1301) = 75.09, p < 0.001, living with their husband or partner, χ^2 (1) = 95.23, p < 0.001, and to normally be employed, χ^2 (1) = 80.46, p < 0.001. Women from the public hospital were more likely to live in metropolitan or inner regional areas, χ^2 (1) = 28.79, p < 0.001.

Differences in Breastfeeding Rates at Discharge from Hospital

Across the baseline and intervention cohorts, women from the private hospital were more likely to be breastfeeding at discharge (95.4% vs. 86.8%), χ^2 (1) = 31.54, p < 0.001. For women from the public hospital, women in the intervention cohort were more likely to be breastfeeding at discharge (89.7% vs. 81.8%), χ^2 (1) = 7.03, p = 0.008.

Breastfeeding Rates Across Cohorts

The effect of a risk factor was described by a hazard ratio, defined as the ratio of the cessation rate for the given level of the risk factor relative to the cessation rate for the reference level. Table 2 provides the hazard ratios and 95 percent confidence intervals (CIs) from the Cox regression analyses of exclusive and partial breastfeeding at 4.5 weeks for each of the hospitals. Table 3 provides the hazard ratios and associated 95 percent CIs from the Cox regression analyses of exclusive and partial breastfeeding at 3 months.

Women from the private hospital. Of the potentially confounding covariates, employment status and marital status provided unique prediction of breastfeeding duration in women giving birth in the private hospital. Women employed in professional or associate professional positions were 2.0 (95% CI = 1.3 – 2.9) times more likely to be exclusively breastfeeding and 2.6 (95% CI = 1.5 – 4.3) times more likely to be partially breastfeeding than women employed in other positions at 4.5

weeks postpartum. Similarly, women employed in professional or associate professional positions were 1.4 (95% CI = 1.0 – 1.9) times more likely to be exclusively breastfeeding, than women employed in other positions at three months postpartum. After taking potentially confounding factors into account, women from the intervention cohort were 1.4 (95% CI = 1.0 – 2.0) times more likely to be exclusively breastfeeding at 4.5 weeks postpartum and 1.4 (95% CI = 0.9 – 2.2) more likely to be partially breastfeeding at 4.5 weeks postpartum than mothers in the baseline cohort, though the latter of these two findings just failed to reach significance ($p = 0.10$).

Women from the public hospital. No potentially confounding covariates predicted either exclusive or partial breastfeeding at 4.5 weeks postpartum. Age, however, provided unique prediction of breastfeeding duration at 3 months postpartum in women giving birth in the public hospital. Women aged over 30 were 1.7 (95% CI = 1.1 – 2.5) times more likely to be exclusively breastfeeding and 1.8 (95% CI = 1.1 – 2.9) times more likely to be partially breastfeeding than women aged 25 and under. After controlling for these covariates, study phase had no influence on the likelihood of exclusive or partial breastfeeding at either 4.5 weeks or three months postpartum ($p > 0.05$).

Global Satisfaction Ratings

On the global rating of satisfaction, where a rating of 1 indicated total dissatisfaction with the support service and 7 total satisfaction, the mean satisfaction rating was 6.62 (95% CI = 6.57 – 6.67). Women from the private hospital rated their satisfaction higher (6.68 vs. 6.55), $t(589) = 2.48$, $p = 0.013$. When asked what they liked about the support service, 26.0 percent reported the ability to ask questions. Other commonly reported likes were: being able to gain reassurance, confidence, and/or

encouragement (19.0%); having regular contact (10.6%); the mode of contact being seen as convenient (10.2%); the good advice and support provided by case managers (10.9%), the high quality of information provided (9.7%); and the personalities of the case managers (9.0%). Nearly five percent (4.6%) of women wanted the duration of the service extended, and 2.0 percent wanted the ability to initiate contact with their case manager. Dislikes about the timing and duration of calls were reported by 2.2 percent of women.

Six (0.9%) mothers received a home visit from the support service. Five were for women from the private hospital, who could not access the public hospital home visiting service. Two mothers received a second home visit. When asked to rate satisfaction with home visits, all mothers provided a rating of 7, indicating total satisfaction.

Discussion

Participants in the two cohorts, particularly those from the private hospital, are relatively well-educated, older, and come from a higher socioeconomic status compared to those who did not participate. It is also possible that participating women were more motivated to breastfeed. Whilst acknowledging this, the participation rates are similar to other similar studies conducted recently (15). Additionally, the low level of loss to follow-up suggests that results are likely to generalise to the population for which this sample is representative.

The higher proportion of primiparous mothers in the intervention cohort is probably indicative of these women being more motivated to participate in a study phase where support for feeding issues was being provided. This would be a potential problem for interpretation of results if parity affects breastfeeding duration. However,

this was not found to be the case in either the baseline or intervention cohorts (16). Moreover, other demographic characteristics are largely comparable across cohorts and any potentially confounding demographic variables in the design have been controlled in the analysis of breastfeeding rates. Finally, while most intervention studies gather data from a single maternity ward, this study collected data from two maternity wards, one private and one public, thus increasing the likelihood that results might generalise.

The data from this study indicate that initial rates of breastfeeding are over 90 percent. This is consistent with past studies conducted in the Australian context (4, 5, 15).

This study provides qualified support for the effectiveness of a small-scale postnatal telephone feeding support intervention in the Australian context. This is consistent with findings of one previous study conducted outside this context (9), but not with others (10, 11). For women giving birth at the private hospital, the intervention provided small but nevertheless significant increases in exclusive breastfeeding duration and close-to-significant increases in partial breastfeeding duration during the period the support service was offered. Longer-term benefits for these women were not observed for either exclusive or partial breastfeeding duration. The intervention did not appear to influence breastfeeding duration for mothers from the public hospital, where women who participated in the study were from relatively lower socioeconomic groups. This is consistent with past studies indicating that antenatal and postnatal interventions are ineffective in increasing breastfeeding duration for women from lower socioeconomic backgrounds (15, 17, 18).

Women giving birth at the private hospital tend to be older, married or living in a de facto relationship, non-Indigenous, and come from a higher socioeconomic group.

These findings suggest that at least the exclusive breastfeeding duration of these women is amenable to postnatal telephone-based interventions. This may have important implications for private hospitals, as providing support via these means is relatively cost-effective compared to other options, and provides a viable option for providing postnatal support to mothers from rural and remote parts of private hospital catchments. Long-term benefits to breastfeeding duration do appear to be an issue, however. Conversely, of course, interventions of this type may not be appropriate in public hospitals without augmentation. Such augmentation might potentially involve antenatal education, a longer period of service provision, allowance for woman-initiated contact, development of peer-support networks, close cooperation with existing home visiting services, and greater integration of support networks such as that provided by the Australian Breastfeeding Association. Similar modifications may assist in providing longer-term changes to breastfeeding duration in women from private hospitals.

There were high levels of satisfaction with the support service. Similar results have been obtained in evaluations of other feeding support services, though many of these involved face-to-face contact (19, 20). The only study assessing satisfaction with a telephone-based support program also obtained high levels of satisfaction (21), though they were not as high as that reported in this study. A telephone-based infant feeding support service can provide a highly satisfying service. This finding is confirmed by the positive qualitative comments and comparatively small proportion of complaints and suggestions for improvement. The data suggest that the service has met client values and expectations (22), and speaks to its safety and ethical use (23). The use of qualitative *and* quantitative data strengthens our ability to make these assertions. The timing of the satisfaction survey (i.e., immediately after completion of the intervention)

may at least partially explain the gap between satisfaction and effects on breastfeeding duration. It is also interesting that the direction of the relationship between hospital and global satisfaction is similar to that between hospital and the effects of the support service on breastfeeding duration.

With breastfeeding initiation rates being reasonably consistent with the national target of 90 percent (4), the primary infant feeding issue to be addressed in Australia at is the rapid decline in breastfeeding rates, particularly exclusive rates, over time. While this intervention increased exclusive breastfeeding duration at 4.5 weeks postpartum for mothers giving birth in private hospitals, it was still not sufficient to bring these rates up to national targets (24). The limited resources available in the current economic climate should be focused on increasing breastfeeding duration, thus ensuring that the full health-related and economic benefits of breastfeeding can be gained.

Acknowledgements

The research team would like to thank those who contributed their time and support for this project. In particular, the team wish to thank the lactation consultants, Jan Brooks and Dee Jurgs, the members of the critical reference group, Jane Hennessy from the Toowoomba Health Service, and Jillian Walmsley for her efforts in entering and analysing data. Finally, many thanks to the women who participated. Without the generous gift of their time, this study could not have been conducted.

References

1. World Health Organisation 1991 Indicators for assessing breastfeeding practices: Report from an informal meeting 11-12 June 1991. World Health Organisation, Geneva.
2. WHO 2001 The optimal duration of exclusive breastfeeding. World Health Organization, Geneva.
3. Sikorski J, Renfrew MJ, Pindoria S, Wade A 2003 Support for breastfeeding mothers (Cochrane Review). In The Cochrane Library. Update Software, Oxford.
4. Donath S, Amir LH 2000 Rates of breastfeeding in Australia by state and socioeconomic status: Evidence from the 1995 National Health Survey. Breastfeeding Review 8:23-27.
5. Hector D, Webb K, Lymer S 2004 Report on breastfeeding in NSW. NSW Centre for Public Health Nutrition, Sydney.
6. Couta de Oliveira MI, Bastos Comacho LA, Tedstone AE 2001 Extending breastfeeding duration through primary care: A systematic review of prenatal and postnatal interventions. Journal of Human Lactation 17:326-343.
7. Dennis CL 2002 Breastfeeding initiation and duration: A 1990-2000 literature review. Journal of Obstetrics, Gynecologic, and Neonatal Nursing 31:12-32.
8. Guise J-L, Palda V, Westhoff C, Chan BKS, Helfand M, Lieu TA 2003 The effectiveness of primary care-based interventions to promote breastfeeding: Systematic evidence review and meta-analysis for the U.S. Preventive Services Task Force. Annals of Family Medicine 1:70-78.
9. Oakley A, Rajan L, Grant A 1990 Social support and pregnancy outcome. British Journal of Obstetrics & Gynaecology 97:155-162.
10. Grossman LK, Harter C, Sachs L, Kay A 1990 The effect of postpartum lactation counselling on the duration of breastfeeding in low-income women. American Journal of Diseases in Childhood 144:471-474.
11. Frank D, Wirtz S, Sorenson J, Heeren T 1987 Commercial discharge packs and breastfeeding counseling: Effects on infant-feeding practices in a randomized trial. Pediatrics 80:845-854.
12. Lawlor-Smith C, McIntyre E, Bruce J 1997 Effective breastfeeding support in a general practice. Australian Family Physician 25:S68-S70.
13. Redman S, Booth P, Smyth H, Paul C 1992 Preventive health behaviours among parents of infants aged four months. Australian Journal of Public Health 16:175-181.
14. SPSS Inc. 2003 SPSS for Windows. SPSS Inc, Chicago.
15. Forster D, McLachlan H, Lumley J, Beanland C, Waldenstrom U, Amir L 2004 Two mid-pregnancy interventions to increase the initiation and duration of breastfeeding: A randomised controlled trial. Birth 31:176 - 182.
16. Hegney D, Fallon T, O'Brien M, Plank A, Doolan J, Brodribb W, Hennessy J, Laurent K, Baker S 2003 The Toowoomba Infant Feeding Support Service project: Report on Phase 1 - a longitudinal needs analysis of breastfeeding behaviours and supports in the Toowoomba region. Centre for Rural and Remote Area Health, University of Southern Queensland/University of Queensland, Toowoomba.

17. Henderson A, Stamp G, Pincombe J 2001 Postpartum positioning and attachment education for increasing breastfeeding: A randomized trial. Birth 28:236-242.
18. Redman S, Watkins J, Evans L, Lloyd D 1995 Evaluation of an Australian intervention to encourage breast feeding in primiparous women. Health Promotion International 10:101-113.
19. Escobar GJ, Braveman PA, Ackerson L, Odouli R, Coleman-Phox K, Capra AM, Wong C, Lieu TA 2001 A randomized comparison of home visits and hospital-based group follow-up visits after early postpartum discharge. Pediatrics 108:719-727.
20. Gagnon AJ, Dougherty G, Jiminez V, Leduc N 2002 Randomised trial of postpartum care after hospital discharge. Pediatrics 109:1074-1080.
21. Dennis C-L 2002 Breastfeeding peer support: Maternal and peer volunteer perceptions from a randomized controlled trial. Birth 29:169-176.
22. Donabedian A 1980 Explorations in quality assessment and monitoring: Vol. 1 - The definitions of quality and approaches to its assessment. Health Administration Press, Ann Arbor.
23. Hodges S 2000 Challenges for birth-related research. Birth 27:281-285.
24. NH&MRC 2003 Dietary Guidelines for children and adolescents in Australia. National Health and Medical Research Council, Canberra, p 444.
25. AIHW 2004 Rural, regional, and remote health: A guide to remoteness classifications. AIHW, Canberra.

Figure Legends

Figure 1. Flowchart outlining participation rates and loss to follow-up at each hospital for the two study cohorts

Table 1

Comparison of Demographics of Each Cohort and of Hospital Within Each Cohort

	Public Hospital		*Private Hospital*	
Characteristic	*Baseline*	*Intervention*	*Baseline*	*Intervention*
First live baby (N, % within cohort)	78	164	166	165
	(38.4)	(48.1)	(39.3)	(46.5)
Born in Australia	185	305	397	328
	(91.1)	(91.9)	(94.3)	(94.0)
Married/de facto	148	227	366	335
	(73.3)	(68.8)	(87.1)	(96.3)
Indigenous descent	10	16	3	0
	(4.9)	(4.8)	(0.7)	(0.0)
Metropolitan/inner regional resident ‡	190	323	367	292
	(93.6)	(94.7)	(87.0)	(82.3)
Employed	83	261	148	244
	(41.1)	(45.1)	(64.8)	(73.7)
Age of mother, years (mean, 95% CI) ‡	27.8	27.3	30.1	30.0
	(27.1–28.4)	(26.8–27.9)	(29.6–30.6)	(29.5–30.6)

‡ CI = confidence interval. ‡ According to the Australian Standard Geographical Classification (25).

Table 2

Predictors of the Cessation of Breastfeeding at 4.5 Weeks Postpartum from the Cox Regression Analyses

	Public Hospital				*Private Hospital*			
Breastfeeding	*Exclusive*		*Exclusive+Partial*		*Exclusive*		*Exclusive+Partial*	
Entry into Regression	*Hazard Ratio*	*95% CI*†	*Hazard Ratio*	*95% CI*†	*Hazard Ratio*	*95% CI*†	*Hazard Ratio*	*95% CI*†
Step 1								
Employment Status								
(1) Professional/Associate Professional	1.00		1.00		1.00		1.00	
(2) Other Employment	1.77	0.93 – 3.37	1.71	0.81 – 3.61	1.96	1.33 – 2.91**	2.55	1.52 – 4.29**
(3) Nil Paid Employment	1.49	0.78 – 2.85	1.44	0.68 – 3.04	1.11	0.69 – 1.77	1.70	0.93 – 3.09
Parity								
(1) Primiparous	1.00		1.00		1.00	1.00		
(2) Multiparous	0.90	0.61 – 1.34	1.20	0.75 – 1.90	0.86	0.60 – 1.24	0.79	0.50 – 1.24
Age								
(1) 25 and Under	1.00		1.00		1.00		1.00	
(2) 26-30	0.77	0.51 – 1.17	0.77	0.47 – 1.26	1.18	0.72 – 1.93	1.08	0.61 – 1.90

(3) Over 30	0.77	0.49 – 1.21	0.82	0.49 – 1.38	1.15	0.69 – 1.91	0.91	0.50 – 1.65
Marital Status								
(1) Married/Divorced	1.00		1.00		1.00		1.00	
(2) Never Married	1.28	0.87 – 1.88	1.20	0.76 – 1.89	1.94	1.21 – 3.14**	1.99	1.14 – 3.47*
Step 2								
Study Phase								
(1) Baseline	1.00		1.00		1.00		1.00	
(2) Intervention	0.81	0.57 – 1.15	0.92	0.61 – 1.38	0.69	0.49 – 0.97*	0.70	0.46 – 1.07

† CI = confidence interval. * $p < 0.05$; ** $p < 0.01$

Table 3

Predictors of the Cessation of Breastfeeding at 3 Months Postpartum from the Cox Regression Analyses

Breastfeeding	*Public Hospital*				*Private Hospital*			
	Exclusive		*Exclusive+Partial*		*Exclusive*		*Exclusive+Partial*	
Entry into Regression	*Hazard Ratio*	*95% CI*[†]	*Hazard Ratio*	*95% CI*[†]	*Hazard Ratio*	*95% CI*[†]	*Hazard Ratio*	*95% CI*[†]
Step 1								
Employment Status								
(1) Professional/Associate Professional	1.00		1.00		1.00		1.00	
(2) Other Employment	1.66	0.96 – 2.87	1.78	0.93 – 3.39	1.39	1.01 – 1.92*	2.00	1.30 – 3.08**
(3) Nil Paid Employment	1.45	0.83 – 2.53	1.41	0.73 – 2.70	1.03	0.72 – 1.48	1.49	0.92 – 2.43
Parity								
(1) Primiparous	1.00		1.00		1.00	1.00		
(2) Multiparous	0.85	0.60 – 1.21	1.12	0.75 – 1.68	0.97	0.72 – 1.31	0.90	0.61 – 1.32
Age								
(1) 25 and Under	1.00		1.00		1.00		1.00	
(2) 26-30	0.84	0.59 – 1.21	0.84	0.56 – 1.26	1.18	0.80 – 1.75	1.21	0.74 – 1.99

(3) Over 30	0.60	0.40 – 0.92*	0.55	0.34 – 0.89*	0.84	0.55 – 1.28	0.74	0.43 – 1.28
Marital Status								
(1) Married/Divorced	1.00		1.00		1.00		1.00	
(2) Never Married	1.22	0.87 – 1.71	1.26	0.86 – 1.86	2.03	1.36 – 3.04**	1.81	1.08 – 3.03*
Step 2								
Study Phase								
(1) Baseline	1.00		1.00		1.00		1.00	
(2) Intervention	1.12	0.81 – 1.55	1.33	0.92 – 1.94	0.84	0.64 – 1.11	0.91	0.64 – 1.29

† CI = confidence interval. * $p < 0.05$; ** $p < 0.01$