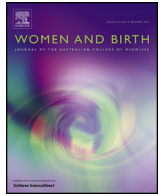




Contents lists available at ScienceDirect

Women and Birth

journal homepage: www.elsevier.com/locate/wombi



Original Research – Quantitative

Predictors of breastfeeding exclusivity and duration in a hospital without Baby Friendly Hospital Initiative accreditation: A prospective cohort study

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ARTICLE INFO

Article history:

Received 20 April 2017

Received in revised form 21 September 2017

Accepted 25 October 2017

Available online xxx

Keywords:

Breastfeeding

Infant formula

Opioid analgesics

Epidural analgesia

Midwifery

Postnatal care

ABSTRACT

Aim: The aim of this study was to investigate the maternity care factors associated with exclusive breastfeeding duration at three months and six months postpartum in a setting without BFHI accreditation. **Methods:** A prospective cohort design. Participants from one tertiary maternity hospital were eligible if they intended to exclusively breastfeed, had birthed a live, term baby; were breastfeeding at recruitment; were rooming-in with their baby; were healthy and well; and understood English. Participants completed an infant feeding survey using 24-h recall questions at three time-points. Data were analysed using descriptive statistics, bivariate analysis and regression modelling.

Findings: We recruited 424 participants of whom 84% (n = 355) responded to the survey at 3-months and 79% (n = 335) at 6-months. Women who avoided exposure to intrapartum opioid analgesia (e.g. intramuscular, intravenous or epidural) were more likely to be exclusively breastfeeding at 3-months postpartum (adjusted odds ratio (aOR) 2.09, 95% confidence interval (CI) 1.15–3.80, probability value (p) 0.016). The only other modifiable predictor of exclusive breastfeeding at 3-months was non-exposure to artificial formula on the postnatal ward (aOR 2.44, 95% CI 1.43–4.18, p < 0.001). At 6-months postpartum, the rate of exclusive breastfeeding had reduced to 5% (n = 16) which rendered regression modelling untenable.

Discussion: Strategies to decrease exposure to opioid analgesia in birth settings and the use of infant formula on the postnatal ward may improve exclusive breastfeeding at three months.

Conclusion: Results suggest that both intrapartum and postpartum maternity care practices can predict long-term breastfeeding success.

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Statement of significance

Problem or issue

Exclusive breastfeeding significantly improves health outcomes for women and babies. In Australia, despite high numbers of women wanting to breastfeed and initiating breastfeeding at birth (96%) the breastfeeding rate falls dramatically by 3 months (39%) and 5 months (15%).

What is already known

Maternity care practices in hospital associated with exclusive breastfeeding at 5 months include skin-to-skin contact at birth, attempted first breastfeed within 60 min of birth, rooming-in on the postnatal ward and no exposure to artificial formula.

What this paper adds

In a cohort of healthy mothers and babies, modifiable maternity care factors which predicted exclusive breastfeeding at three months postpartum were: no intrapartum opioid analgesia and avoidance of artificial formula on the postnatal ward.

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1. Introduction

The World Health Organization (WHO) and National Health and Medical Research Council (Australia) recommend that infants are breastfed exclusively for six months and continue to receive breastmilk for 12 months or longer.^{1,2} Exclusive breastfeeding significantly contributes to improved health outcomes for both women and babies including protection against infection and the development of chronic diseases.¹ Potentially modifiable hospital practices including exposure to obstetric intervention, artificial formula supplementation, and separation of mothers and babies at birth, all negatively impact breastfeeding duration.^{3,4} The Baby Friendly Health Initiative (BFHI) was introduced by the WHO in 1991 and involves *Ten Steps to Successful Breastfeeding* designed to improve the promotion and support provided by hospitals to breastfeeding mother-baby pairs.⁵

1.1. Literature review

A systematic review of BFHI involving 14 countries reported an upward trend in both exclusive breastfeeding, and breastfeeding overall, following BFHI implementation.⁶ In countries where breastfeeding initiation rates were low, the BFHI positively affected both initiation and duration rates of exclusive breastfeeding.⁷ A systematic review of breastfeeding interventions found that BFHI was likely to have a positive effect, particularly when combined with midwifery and peer support.⁸

In Australia, 96% of women initiate breastfeeding although rates fall dramatically to 39% exclusively breastfeeding (3 months) and 15% (5 months).⁹ Some suggest the evidence which supports the efficacy of BFHI in countries with low initiation rates, may not be transferable to Australia where initiation rates are high.¹⁰ Furthermore, the implementation of BFHI in Australia has been negatively affected by lack of financial or policy incentives; and an absence of any measurable strategies to assess progress towards targets.¹¹ A large survey of Australian women across four settings (one a BFHI-accredited hospital) concluded that when breastfeeding initiation rates were high and evidence-based breastfeeding practices were common, BFHI accreditation had little effect on exclusive or any breastfeeding rates.¹² However, participants who were exposed to each of the following four practices were significantly more likely to be breastfeeding at four months compared to women who did not experience all four practices: (1) skin-to-skin contact, (2) attempted first breastfeed within 60 min of birth, (3) rooming-in on the postnatal ward and (4) no exposure to artificial formula.¹² A 2010 literature review, reported the intrinsic factors associated with exclusive breastfeeding at six months to be, women's breastfeeding intention, breastfeeding self-efficacy and social support.¹³ The aim of this study was to investigate the extrinsic (maternity care) factors associated with breastfeeding exclusivity, and duration, at three months and six months postpartum in a setting without BFHI accreditation.

2. Methods

The prospective cohort design enabled the outcome of interest, exclusive breastfeeding duration, to be measured through maternal self-report at discharge, three months and six months postpartum. Ethical approval was granted by the Health Service (1620M) and University (Q2011-42) Human Research Ethics Committees.

2.1. Setting

The setting for this study was a tertiary-level maternity facility, which conducts approximately 10,000 births annually and does

not have BFHI-accreditation. Nevertheless, several of the 'ten steps' had been met at the time of the study. For instance, there was a written breastfeeding policy (Step 1), all pregnant women were informed about the benefits of breastfeeding (Step 3), and mothers were referred to breastfeeding support groups on discharge from hospital (Step 10).⁵ Both publically and privately insured child-bearing women accessed the hospital birth suite and either a public or private postnatal ward following birth. The hospital provided two weeks of home-based postnatal care for all women who lived within the hospital catchment. Support for breastfeeding was also available through the breastfeeding support centre for a 'fee for service'. Recruitment occurred on the postnatal wards of the hospital during August to October, 2011. Follow-up data collection continued until May 2012 when the infants of all participants were at least six months of age.

2.2. Participants

This study used a convenience sample of new mothers who had given birth in the research setting and had transferred to the postnatal ward. Women were eligible if they: intended to exclusively breastfeed at hospital booking visit; birthed a live, term baby; were breastfeeding; were rooming-in with their baby (i.e. their baby had not been admitted to a neonatal nursery); were healthy and well; and understood English. Participants were ineligible if they: had a stillbirth or preterm birth; had a baby who had been admitted to a separate nursery; did not intend to breastfeed at booking; were medically unwell at time of recruitment; or did not speak English.

Potential participants were identified by the team leaders of each postnatal ward at the beginning of each shift. A research assistant (RA) approached eligible women with a participant information sheet then returned at the end of each shift to offer participation in the study and invite written informed consent.

2.3. Variables

The primary outcomes were:

- the proportion of women who were exclusively breastfeeding at three time-points: discharge from the postnatal ward, three months and six months postpartum; and
- predictors of exclusive breastfeeding at three months and six months postpartum.

The following demographic characteristics were analysed:

- maternal age (<25 years, 25–34 years, ≥35 years);
- parity (nullipara, multipara);
- education status (<year 12/≥year 12);
- ethnicity (Caucasian, Asian, other);
- marital status (partnered/unpartnered);
- Socio Economic Index for Areas (SEIFA) quintile score (1–5);
- insurance status (public/private); and
- smoking at booking (yes/no).

The following intrapartum and postpartum characteristics were analysed:

- labour onset (spontaneous, induced, no labour);
- exposure to intrapartum opioids i.e. pethidine, morphine, regional analgesia (includes fentanyl) (yes/no);
- mode of birth (vaginal birth/caesarean section);
- skin-to-skin contact after birth (<30 min duration/30 min or longer); and
- infant formula given in hospital (yes/no).

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