

## WA Breastfeeding Support Study

**TITLE:**

**The Association between Women's Perceptions of Professional Support and Problems Experienced on Breastfeeding Cessation: A Western Australian Study**

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**Summary statement**

Although, 78.8% of Western Australian women (n=2669) agreed or strongly agreed that staff were helpful with feeding, 53.4% confirmed that different midwives offered different feeding advice. However, receiving different advice was not associated with early cessation. Early breastfeeding cessation in primiparous women was associated with any breastfeeding problems, unhelpful hospital midwives and unhelpful information from child health nurses. Whereas, early cessation for multiparous women was associated with two or more breastfeeding problems, not being able to choose when to feed and unhelpful information from child health nurses.

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**Abstract**

A cross sectional survey was used to determine the association between women's breastfeeding problems, their perceptions of support from midwives and child health nurses, and breastfeeding cessation in the first ten weeks post birth in a sample (n=2669) of Western Australian women. Primiparous women (75.8%) experienced significantly more problems than multiparous women (52.6%). Although, 78.8% of all women agreed or strongly agreed that staff were helpful with feeding, 53.4% confirmed that different midwives offered different feeding advice; however, receiving different advice from midwives around feeding was not associated with breastfeeding cessation. Differences in breastfeeding cessation were however, associated with parity. Primiparous women's cessation was associated with experiencing any breastfeeding problems, unhelpful hospital midwives and unhelpful information from child health nurses while for multiparous women this included two or more breastfeeding problems, not being able to choose when to feed and unhelpful information from child health nurses.

**Key words:** breastfeeding support, breastfeeding difficulties, breastfeeding cessation

## Background

The Australian National Health and Medical Research Council (NHMRC) dietary guidelines recommend breastfeeding initiation rates of 90% <sup>1</sup>. Western Australia (WA) had breastfeeding initiation rates as high as 83.8% in the early 1990's <sup>2</sup> increasing to 88%<sup>3</sup> and 91%<sup>4</sup> by the turn of the century. Recent studies have confirmed initiation rates in Western Australia have ranged from 93 to 93.8% <sup>5-6</sup>. Although Australian initiation rates have been steadily increasing, the NHMRC target of 80% of women continuing to breastfeed at 6 months has not been realised. To illustrate, in 2001, 48% of Australian infants received any breast milk at 6 months <sup>7</sup> with WA rates of any breast milk offered being 61.8% at 3 months and 49.9% at 6 months <sup>3</sup>. Although recent prevalence rates for any breastfeeding up to ten weeks post birth was 74.8%, exclusive breastfeeding rates for WA women, where only breast milk was offered to the infant, were found to be 57.1% for multiparous women and 49.2% for primiparous women <sup>6</sup>.

Cessation of breastfeeding is associated with breastfeeding problems <sup>8</sup> including inappropriate positioning and attachment, nipple damage, low milk supply and painful feeding <sup>9-10</sup>. The occurrence of breastfeeding problems was noted as affecting 83% of WA breastfeeding women whilst still in hospital <sup>11</sup>. The most common reasons cited for cessation of breastfeeding are a perceived insufficient milk supply or an unsettled baby interpreted by the mother as an inadequate supply <sup>6, 11-13</sup>.

Breastfeeding cessation patterns and less than desired exclusive breastfeeding rates are concerning and in order to achieve the recognised health benefits of breastfeeding for women and their infants, ongoing support of breastfeeding must be a priority. Advocated support for breastfeeding women tends to be multi-dimensional with reports of effective interventions including home visits, telephone support and breastfeeding centers combined with peer support <sup>10, 14</sup>. The recent Cochrane review on support for breastfeeding mothers focused upon the effectiveness of interventions in 34 international studies <sup>15</sup>. Outcome measures such as who provided support and their training; the mode and timing of interventions; health outcomes; and characteristics of target groups were evaluated. However, outcomes for maternal satisfaction were poorly reported and authors conclude that this variable needs to be included in further research to determine perceptions of effective breastfeeding support <sup>15</sup>.

Numerous qualitative studies have provided insight into mothers' experiences of breastfeeding support both in hospital and in the community in the early weeks after birth. Two recent syntheses of qualitative studies <sup>16-17</sup> exploring women's experience of breastfeeding support provided by health professionals, revealed a number of key themes. The most prominent being the importance of the mother-health professional relationship and skilled help provided in an 'authentic' or genuine way. Additional themes addressed the pressures of time on both staff and

women in the postnatal ward and the “medicalisation” of breastfeeding. In general, qualitative research from the UK, USA, Australia, New Zealand, and Sweden described health professional support for breastfeeding unfavourably, highlighting the lack of availability of health professionals, promotion of unhelpful practices and conflicting advice. What is clearly evident, and not surprising, is that health professionals are more effective in their support if their attitude to breastfeeding is positive and they have appropriate knowledge and skills<sup>18-19</sup>. Given the importance of support for breastfeeding women, one would expect that postnatal care be regarded as a priority area. However, more skilled and experienced midwifery staff tend to work in birth suites with less skilled and experienced staff allocated to the postnatal ward resulting in women being less likely to get appropriate breastfeeding support when they need it most<sup>20</sup>.

An authoritarian communication style can exacerbates the detrimental effects of inaccurate information and inconsistencies of approach<sup>21-22</sup>. In fact, Swedish mothers’ appraisal of postnatal care focused upon the difficulty in getting individualised information and breastfeeding support<sup>23</sup>. American women’s concerns centered around the realization that breastfeeding was both easy and difficult; the important role of supportive others such as partners; receiving conflicting advice; having validating experiences and modifying their intentions based on experiences<sup>24</sup>. English breastfeeding women revealed that their needs for emotional, esteem, informational and practical support were largely unmet<sup>25</sup>. These findings highlight the skill required to effectively support breastfeeding women; determine the balance between how much or how little information to share; successfully address unrealistic expectations and offer individualised assistance<sup>26</sup>. Addressing inconsistent breastfeeding support also requires understanding of institutional and personal factors influencing this issue<sup>27</sup>.

Greater insight has been achieved regarding breastfeeding support due to the rich in-depth data obtained from qualitative studies. However, the association between perceived support and breastfeeding practice must be explored further. Therefore, the purpose of this study was to determine the association between women’s perceptions of professional support and problems experienced upon breastfeeding cessation. Professional support in this Western Australian study was limited to support offered by midwives in hospital and at home plus community child health nurses.

## **Method**

A cross sectional survey method was used to determine the association between women’s perceptions of breastfeeding support from midwives and child health nurses, their breastfeeding problems, and breastfeeding cessation in the first ten weeks post birth in a sample of Western Australian (WA) women. The self-report questionnaire was mailed to every WA woman with a registered live birth between February and June 2006.

The Midwives Notification System (MNS) records and reports on all births in the state of WA and this database was used during the recruitment process. Information packages, which included a letter introducing the study, questionnaire and self-addressed prepaid envelope, were delivered to the managers of the MNS. The packages were mailed to women eight weeks after they gave birth. No coding or linkage to names and addresses occurred to ensure anonymity and therefore, no reminders were mailed to women. Women under 16 years of age, as well as those who experienced a perinatal death or whose baby required an extended admission to the neonatal nursery (more than 7 days) were excluded during the recruitment period. To determine the breastfeeding prevalence within  $\pm$  at the 95% confidence interval, a sample of 2449 women was required<sup>28</sup>. Study packages were sent to 5538 women and recruitment ceased after a five-month period when 2669 women had returned completed questionnaires (response rate of 48.2%).

The questionnaire used had been previously developed and tested with Australian postnatal women<sup>29,30</sup>. The questionnaire was designed to examine the content and perceived quality of postnatal care and breastfeeding support provided by midwives and child health nurses. The instrument's reported internal consistency (Cronbach's alpha) was 0.86<sup>28</sup>. Outcome measures included current method of infant feeding, feeding method during hospitalization, and breastfeeding problems experienced. Demographic information such as age, education, income, parity, marital status, and type of birth were collected. Minor amendments were made in the demographic section to enable identification of the type of maternity hospital attended for the birth (i.e. private versus public sector) and the location (i.e. metropolitan or rural) as the original questionnaire did not allow for this discrimination. Six validated questions pertaining to breastfeeding support were included from a WA state-wide survey of maternity services<sup>4</sup> with 468 women in 1995 to foster a comparative analysis. Women were asked how much they agreed or disagreed with statements such as: different midwives gave me different advice about feeding; I was just left to get on with it; staff were very helpful with me feeding the baby and I could choose when to feed my baby. Questionnaires were mailed 8 weeks post birth with 81% of women returning their completed questionnaire within 2 weeks; therefore the prevalence rate reported in this study is within the first ten weeks post birth.

Descriptive statistics and frequency distributions were used initially to summarise and describe the sample. Further analysis included chi-square tests, independent samples t-tests, univariate and multiple variable logistic regression analysis<sup>31</sup>. The effect of the each independent variable on breastfeeding cessation for primiparous and multiparous women was assessed in both individually (univariate) and in conjunctions with other variables (multivariable), after adjusting for hospital location, hospital type and baby's age. In the multivariable analyses, stepwise logistic regression was used to determine independent variables associated with breastfeeding cessation.

The effect of independent variables on breastfeeding cessation are presented as adjusted odds-ratios and associated 95% confidence intervals. P-values less than 5% were considered statistically significant. Data were analysed using SPSS Version 15. Sources of raw data were stored in accordance with NHMRC guidelines. Ethical approval was obtained from the university and approval to access the database was obtained from the WA Department of Health.

## **Results**

### **Demographic Profile**

A total of 2669 women responded to the postal questionnaire, 9.45% of the WA birthing population of 28,254 in 2006<sup>32</sup>. Characteristics of the study sample (maternal age, marital status, education, family income and country of birth) (Table 1) were compared to 2006 WA birthing population. Our sample was representative for parity, type of birth and maternal age over 24 years. However, single, teenage and young mothers less than 24 years were underrepresented. Although country of birth was collected our data does not provide information on Aboriginality. Therefore we cannot evaluate whether Aboriginal Australians are appropriately represented. Demographic data on parity, attendance at a public or private maternity hospital and residential location allowed women to be categorised into subgroups. At ten weeks post birth, the prevalence rate for any breast milk being offered was 73.5% for primiparous women and 75.9% for multiparous women compared to exclusive breastfeeding rates of 49.2% for primiparous women and 57.1% for multiparous women<sup>6</sup>.

### **Breastfeeding problems experienced**

Women were asked if they had ever experienced common breastfeeding problems such as sore or cracked nipples, alterations in milk supply, engorgement, infection and mastitis and attachment issues since the birth. Presence of breastfeeding problems was then compared across parity, public/private hospital and geographical location. A higher proportion of primiparous women experienced problems (75.8%, n=848) compared with multiparous women (52.6%, n=712) (p=0.000). More women attending a private hospital reported experiencing problems (66.9%, n=734) compared to women who attended a public hospital (60.1%, n=827) (p=0.000). For each of the specific breastfeeding problems noted above, there was no significant difference between residential location and type of hospital attended. However, parity was a significant variable for four breastfeeding problems as more primiparous women than multiparous women experienced sore or cracked nipples; not enough milk; infection/mastitis; and attachment problems (Table 2).

### **Breastfeeding support by midwives**

Midwifery support in Western Australia (WA) includes hospital care and home visiting post birth. A Visiting Midwifery Service is available to women attending maternity services in the public health sector. Once discharged from hospital, midwives can visit women at home until the fifth postnatal day or longer if necessary. The length of hospital stay in the private sector is usually

longer<sup>33</sup> however, some private insurance companies offer a home visiting service to women who specifically chose an early discharge from their private maternity hospital.

Six items were used to determine women's perceptions of the breastfeeding support they received in hospital. The items focused upon the advice provided, the issue of choice around decisions, the offer of assistance, and impressions of staff's attitudes around bottle feeding. For example, 78.8% of all women agreed or strongly agreed that staff were helpful with feeding with no differences between primiparous women (78.7%) and multiparous women (78.9%). Items on choice revealed that 77% of women agreed or strongly agreed that the choice between breast and bottle feeding was left to them with 83.9% confirming they could choose when to feed. More multiparous women (54.3%) agreed or strongly agreed that they were "just left to get on with" feeding compared to 28.7% of primiparous women ( $p=0.000$ ). Finally, 25.4% of women perceived that bottle feeding was frowned upon by the hospital midwives.

The issue of consistency around breastfeeding advice was determined by a statement suggesting that "different midwives gave different advice about feeding". In response to this statement, 53.4% of women confirmed agreement with 67% of primiparous women agreeing or strongly agreeing compared to 43.2% of multiparous women ( $p=0.000$ ). When considering the hospital context, more women (59%) who attended a private maternity hospital agreed or strongly agreed that different midwives gave different advice compared to 50% of women who attended a public hospital ( $p=0.000$ ).

Although inconsistency of feeding advice was noted as an issue, when asked about the quality of care provided by midwives, in relation to practical assistance and providing information about infant feeding, 93% of women in the hospital and 96% at home rated the advice as adequate, well or excellent. Agreement that the quality of midwives' information rated as adequate, well or excellent in relation to specific problems were cracked/sore nipples (89%), not enough milk (72%), infection/mastitis (82%), problems with attachment (86%) and too much milk/engorgement (85%). No significant differences were noted between primiparous and multiparous women for these variables.

### **Breastfeeding support by child health nurses**

The child health nurse, a nursing specialist in family and child health, is available to continue support with home visits and access to child health centres. This free government service is offered to all new WA parents once midwifery support has ceased. Within the first ten weeks post birth, 97.2% of all women indicated they had contact with a child health nurse, which included 98.3% ( $n = 1159$ ) of primiparous women and 96.2% ( $n = 1412$ ) of multiparous women. Just over half of women indicated they had contact with a child health nurse within the first week after hospital discharge (51.6%) with an additional 23.8% having contact in week 2. Only 4.9% indicated they had their initial contact with the child health nurse after week 5. The time of first contact was not significantly different according to subgroup. The most frequent initial type of contact from



child health nurses was through a home visit for 67.6% of primiparous women and 65.5% of multiparous women. Attending a clinic visit was the second most frequent initial contact (15.3% for primiparous and 17.8% for multiparous women) and a phone call was third. When asked about the support received with infant feeding, 54.3% found the child health nurse helpful in the area of breastfeeding and 18.7% found child health nurse helpful with bottle feeding. More primiparous women (62.4%) than multiparous women (53.6%) and more rural women (62.1%) than metropolitan women (56.7%) found their child health nurse helpful with breastfeeding ( $p=0.001$ ). No significant differences were noted between women having attended a private or public hospital.

### **Influencing Breastfeeding Cessation**

Logistic regression analysis was performed for single and multiple variables relating to breastfeeding support and breastfeeding cessation for primiparous and multiparous women (Table 3 and 4). The analysis adjusted for type of maternity hospital (public or private), metropolitan or rural location and baby's age when the survey was completed. Primiparous women who experienced no breastfeeding problems were significantly less likely (OR 2.33, CI 1.59 – 3.45,  $p < 0.0005$ ) to cease breastfeeding. However, actual numbers must be noted in relation to this significant difference as 53 primiparous women reported experiencing no problems with 52 (98.1%) continuing to breastfeed. In contrast, one woman (1.9%) who ceased reported experiencing no problems. Of the 197 primiparous women who experienced one breastfeeding problem, 37 (18.8%) had ceased breastfeeding. Not only did more primiparous women experience one or more problems, they were also more likely to cease breastfeeding the more problems they experienced (Figure 1).

Univariate analysis revealed that the four items, increasing numbers of breastfeeding problems experienced, being left to “get on with breastfeeding in hospital”, unhelpful midwives in hospital, and perceptions that breastfeeding information provided by child health nurses was unhelpful, were all significant predictors of breastfeeding cessation for primiparous women. Multivariable logistic regression analysis confirmed the significant association of these items minus the item being left to “get on with breastfeeding in hospital”.

Similarly for multiparous women, experiencing two or more breastfeeding problems, being left to “get on with breastfeeding”, unhelpful midwives in hospital, not being able to choose when to feed and perceptions that breastfeeding information provided by child health nurses was unhelpful, were significant predictors of breastfeeding cessation. Multivariable logistic regression analysis confirmed that three of these five items (two or more breastfeeding problems, not being able to choose when to feed and unhelpful information from child health nurses) had a significant association with breastfeeding cessation. Differences between women highlight the sensitivity of primiparous women to any breastfeeding problems and unhelpful midwives, whereas, the

association between not being able to choose when to feed and breastfeeding cessation remained significant for multiparous women.

## Discussion

The purpose of this study was to determine the association between women's perceptions of professional support and problems experienced on breastfeeding cessation. Significant differences were noted between primiparous and multiparous women offering preliminary insight into differentiating effective and ineffective support strategies for first time and experienced breastfeeding women.

Primiparous women were more likely to have experienced more than one breastfeeding problem compared to multiparous women. Having breastfeeding problems put all women, and particularly first time mothers, at risk of cessation. In fact, abandonment of breastfeeding even prior to hospital discharge has been attributed to ineffective support, unrealistic expectations, and breastfeeding problems<sup>34</sup>. If problems continue once the woman has been discharged and she is not well supported, it is not surprising that continuing to breastfeed can be challenging. New Zealand women were found to be less likely to be fully breastfeeding at 6 to 10 weeks post birth if they experienced breastfeeding problems<sup>35</sup>.

Bailey and colleagues<sup>36</sup> commented upon the emergence of a pessimistic breastfeeding culture with an expectation of experiencing difficulties. This suggests that once breastfeeding problems appear the commitment to breastfeeding can be threatened. The prospect of encountering breastfeeding problems is to be expected given that 83% of Australian women experience one or more breastfeeding problems before leaving hospital with 29% still experiencing problems after 2 weeks<sup>11</sup>. Another Australian study revealed that 51% of women reported problems in the first two weeks post birth confirming the commonness of these experiences<sup>30</sup>. What is concerning is that these women expressed being unprepared to experience difficulties. Women need to be equipped with the knowledge that initiating breastfeeding takes time, can be challenging and problems can be a common occurrence but are manageable given adequate support<sup>37 17</sup>. In fact, women who have been successful with their breastfeeding confirm the need to persist or persevere<sup>38 39</sup>, overcome many challenges<sup>40</sup>, seek breastfeeding support<sup>41;37</sup> and foster attributes of confidence and strength in the face of challenge<sup>42 43</sup>.

Even though quality of care provided by midwives and the quality of midwives' information were positively rated by both primiparous and multiparous women, first time mothers were more sensitive to different midwives giving different advice about feeding. However, the variable of 'differing midwifery advice' was not found to be significantly associated with cessation. The reality of breastfeeding women experiencing conflicting advice is internationally recognised<sup>44, 21, 24, 45</sup> but our findings do not support a detrimental association of differing advice on breastfeeding cessation

<sup>46 21</sup>. Women in this study may have accepted that there is no “one right way” with breastfeeding issues and therefore different advice was not viewed as inconsistent or conflicting but in fact, options for consideration. Use of the term “different” as opposed to “conflicting” when asked about information may have contributed to our findings. Advocating the provision of consistent, realistic and evidence-based information around breastfeeding is still relevant <sup>24 17</sup> given the confusion and frustration women report when receiving “conflicting” advice <sup>46</sup>.

The importance of women receiving breastfeeding support through the giving of helpful information is highlighted in our findings. This is evidenced by the fact that multiple breastfeeding problems, being “left to get on with breastfeeding in hospital”, unhelpful midwives in hospital and perceptions that breastfeeding information provided by child health nurses was unhelpful were significant predictors of breastfeeding cessation for primiparous women. There were no differences in contact with child health nurse visits in the early weeks post birth with 75.4% of women receiving the recommended visit in the first two week post birth. However, it would appear that receiving the visit did not guarantee a supportive breastfeeding climate with only 54.3% of women confirming the child health nurse was helpful in the area of breastfeeding. Comparisons with the WA state-wide survey<sup>4</sup> in 1995 revealed minimal changes with being able to choose when to feed (83.9% vs. 80.7%<sup>4</sup>); receiving different advice (53.4% vs. 56.2%<sup>4</sup>); and staff being helpful with feeding (78.8% vs. 79.6%<sup>4</sup>). Only 35.6%<sup>4</sup> of WA women in 1995 indicated they were ‘left to get on with it’, however, this did not differentiate between parity and current findings confirm that multiparous women (54.3%) were more likely to experience this practice.

Supportive behaviors are more complex than just providing information on infant feeding. The need for sensitive individualized care is suggested <sup>37</sup> and women who continue breastfeeding rely on professional support they can trust <sup>47</sup>. Primiparous women, in particular, rely on helpful information from midwives and child health nurses especially when confronted with multiple breastfeeding problems. Multiparous women are not as vulnerable to one breastfeeding problem but with increasing numbers of problems their susceptibility to cessation increases. Having autonomy around feeding in being able to choose when to feed was important, however, these experienced breastfeeding mothers may not benefit from being left alone in hospital. Although multiparous women were not asked if they had previously breastfed, current Western Australian breastfeeding initiation rates of 93% <sup>5-6</sup> would suggest many of these women had previous breastfeeding experience. However, the assumption that it is appropriate for multiparous women to be “just left to get on with it” if they had previously breastfed must be questioned as previous experience does not indicate the mother’s perception of whether her breastfeeding was successful or if she is confident in her abilities. Finally, the importance of helpful information being provided by midwives in

hospital and child health nurses in the community cannot be underestimated for multiparous women.

### **Limitations**

Our sample was compared to the WA birthing population in 2005 and 2006 confirming it was representative for parity, country of birth, and type of birth. However, the sample did under represent single, teenage and young mothers. Given that teenage mothers and single mothers have been found to have lower breastfeeding initiation rates<sup>48-49</sup> and an increased risk for breastfeeding cessation<sup>50</sup>, our findings must be considered with these limitations. In addition, the representiveness of this sample in reflecting Aboriginal women's perceptions cannot be ascertained as country of birth does not capture this data. The term 'bottle feeding' was used in the questionnaire which limits our interpretation as we cannot distinguish whether women interpreted this as formula feeding only or the opportunity to offer expressed breast milk in a bottle. Finally, this postnatal survey did not collect data on whether women received breastfeeding support in pregnancy during prenatal care or attendance at classes and although there is no evidence to suggest that breastfeeding prevalence is improved by routine antenatal support<sup>15</sup> this variable must be considered as potentially confounding.

### **Conclusion**

The association between perceptions of professional support, breastfeeding problems and cessation provides health professionals with valuable insight into where breastfeeding support should focus. Given that primiparous women are at greater risk of cessation with one breastfeeding problem, efforts must be made to ensure women have realistic expectations regarding the challenge of initiating and maintaining breastfeeding in the early weeks post birth. Early detection and attention to breastfeeding problems before they become multifaceted must be a priority. This assessment is particularly relevant given poor attachment can be a precursor to problems such as sore or cracked nipples and mastitis. Assisting mother-infant dyads address breastfeeding problems requires knowledge and skills. Although the majority of these WA women had access to community support within the first two weeks post birth, attention must focus upon assisting child health nurses be more prepared to provide information that mothers perceive as helpful to assist with breastfeeding problems. Although many women agreed that different midwives offered different advice, the majority of mothers still evaluated the information as helpful plus receiving different advice was not associated with breastfeeding cessation. Women need to be aware and recognize that different advice may not necessarily be conflicting; in fact it can provide options whilst encouraging participation and choice in managing breastfeeding problems.

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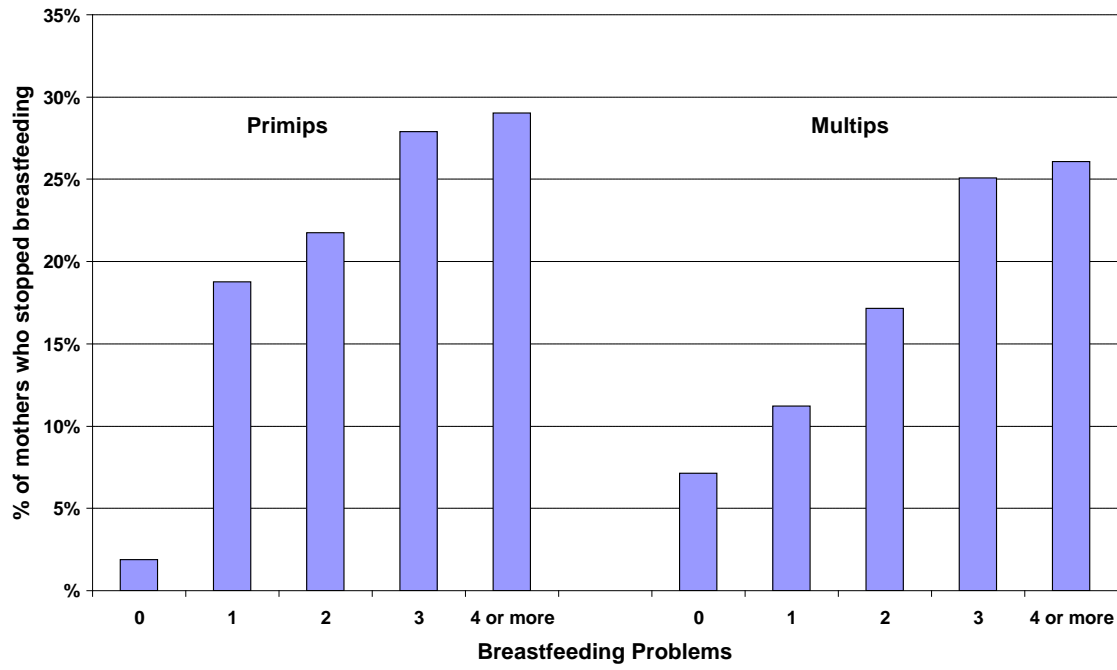


Figure 1. Comparison of parity and percentage of mothers who ceased breastfeeding by 10 weeks post birth with number of breastfeeding problems.



**Table 1. Characteristics of study sample (N=2669)**

	<b>n (%)</b>
<b>Mother's age</b> n=2624	
16-20	82 ( 3.1%)
21-25	325 (12.2%)
26-30	796 (29.8%)
31-35	991 (37.1%)
36-40	417 (15.6%)
41-45	13 ( 2.2%)
<b>Marital status</b> n=2669	
Single	101 ( 3.8%)
Defacto/Married	2544 (95.3%)
Divorced/separated/widowed	24 ( 0.9%)
<b>Parity</b> n=2669	
Primiparous women	1185 (44.4%)
Multiparous women	1484 (55.6%)
<b>Woman's Country of Birth</b> n=2669	
Australia/New Zealand	2103 (78.8%)
Europe	244 ( 9.1%)
Asia	110 ( 4.1%)
USA	13 ( 0.5%)
Middle East	8 ( 0.3%)
Other	191 (7.2%)
<b>Type of Birth</b> n=2664	
Normal vaginal birth	1368 (51.4%)
Instrumental birth	377 (14.2%)
Caesarean birth	919 (34.4%)

**Table 2. Comparison of breastfeeding problems by parity**

<b>Breastfeeding Problem</b>	<b>Primiparous Women n≈1105</b>	<b>Multiparous women n≈1335</b>	<b>Chi Square P value</b>
Experienced sore / cracked nipples	71.5% (n=793)	61.5% (n=828)	$\chi^2 = 26.56$ df=1 <b>p&lt;0.0005</b>
Experienced not enough milk	36.8% (n=405)	25.7% (n=343)	$\chi^2 = 34.791$ df=1 <b>p&lt;0.0005</b>
Experienced infection / mastitis	19.9% (n=217)	15.8% (n=210)	$\chi^2 = 6.693$ df=1 <b>p=0.010</b>
Experienced problems with attachment	65.69% (n=724)	41.6% (n=555)	$\chi^2 = 138.829$ df=1 <b>p=0.010</b>
Experienced too much milk / engorgement	44.0% (n=482)	40.7% (n=540)	$\chi^2 = 2.707$ df=1 p=0.100

**Table 3. Association between independent variables and breastfeeding cessation before 10 weeks post birth in primiparous women (N=1185)**

	Univariate	Multivariable
<b>Independent Variables</b>		
No breastfeeding problems experience	1 11.68 (1.56 – 87.54) *	1 9.52 (1.25 – 72.51) *
1 breastfeeding problem experienced	14.25 (1.93 – 105.29) *	12.27 (1.64 – 91.86) *
2 breastfeeding problems experienced	20.53 (2.78 – 151.18) *	16.99 (2.28 – 126.71) *
3 breastfeeding problems experienced	21.14 (2.82 – 158.26) *	17.45 (2.29 – 132.53) *
4 or more breastfeeding problems experienced		
Different midwives gave different advice about feeding	1.44 (0.75 – 2.77) ns	-
Just left to get on with it in hospital	1.39 (10.1 – 1.89) *	-
Midwives were not helpful with feeding the baby in hospital	2.49 (1.64 – 3.82) **	2.09 (1.31 – 3.36) **
Mother could not choose when to feed baby	1.1 (0.62 – 1.76) ns	-
Breastfeeding information provided by child health nurse was not helpful	2.78 (2.08 – 3.70) **	2.67 (1.94 – 3.66) **
Had contact with a child health nurse within first 14 days post birth	1.19 (0.84 – 1.71) ns	-

Not statistically significant ns p < 0.05\* p < 0.0005\*\*

Logistic regression analysis adjusting for hospital type, hospital location and baby’s age

**Table 4. Association between independent variables and breastfeeding cessation before 10 weeks post birth in multiparous women (N=1484)**

<b>Independent Variables</b>	<b>Univariate</b>	<b>Multivariable</b>
No breastfeeding problems experienced	1	1
1 breastfeeding problem experienced	1.58 (0.82 – 3.06) ns	1.28 (0.63 – 2.62) ns
2 breastfeeding problems experienced	2.66 (1.43 – 4.96) *	2.48 (1.28 – 4.81) *
3 breastfeeding problems experienced	4.33 (2.32 – 8.11) **	4.01 (2.06 – 7.79) **
4 or more breastfeeding problems experienced	4.52 (2.16 – 9.47) **	4.33 (1.98 – 9.47) **
Different midwives gave different advice about feeding	0.89 (0.47 – 1.7) ns	-
Just left to get on with it in hospital	0.63 (0.46 – 0.84) *	-
Midwives were not helpful with feeding the baby in hospital	2.24 (1.44 – 3.47) **	-
Mother could not choose when to feed baby	2.02 (1.20 – 3.38) *	2.25 (1.27 – 3.96) *
Breastfeeding information provided by child health nurse was not helpful	0.62 (0.46 – 0.83) *	1.86 (1.34 – 2.56) **
Had contact with a child health nurse within first 14 days post birth	0.88 (0.63 – 1.025) ns	-

Not statistically significant ns p < 0.05\* p < 0.0005\*\*  
 Logistic regression analysis adjusting for hospital type, hospital location and baby’s age