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Discrimination Against Breastfeeding Mothers in Childcare

Julie P. Smith, Australian National University
Sara Javanparast and Ellen McIntyre, Flinders University
Lyn Craig, University of New South Wales
Kate Mortensen, Lactation Resource Centre, Australian Breastfeeding Association
Colleen Koh, Australian National University

Abstract

This study investigates discrimination against breastfeeding mothers by childcare services in Australia. We conducted a cross sectional survey of 178 Australian childcare services from a population based sample during 2011-12. Analysis examined the awareness of relevant legislation and reported extent of discrimination, and explored relationships between childcare service characteristics, accommodation of breastfeeding, and breastfeeding prevalence. We found that most childcare services are unaware of relevant discrimination laws. Some may discriminate against breastfeeding mothers. Most accommodate breastfeeding, though such support is highly variable. Breastfeeding prevalence in childcare services was higher where specific support for breastfeeding was offered. Barriers to combining breastfeeding with employment include varying levels of breastfeeding support including direct and indirect discrimination by childcare services. This may unnecessarily discourage maternal labour force participation and, to the extent it affects continuation of breastfeeding, adversely effect infant nutrition and health. Discrimination against breastfeeding in childcare has wider implications for efficiency, national productivity and gender equality.

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Address for correspondence: Julie Smith, Australian National University ACT 0200, email: julie.smith@anu.edu.au
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1. Introduction

Recent amendments to the Commonwealth *Sex Discrimination Act (1984)* define and prohibit discrimination against breastfeeding mothers in the provision of services, which includes childcare services.[1] This paper investigates the extent and nature of discrimination against breastfeeding mothers by childcare services in Australia, and the potential impact on breastfeeding among children in childcare.

Despite a considerable growth in enrolments in childcare since the mid-1990s (Australian Bureau of Statistics (ABS) 2010), due to women's increased labour force participation, the issue of breastfeeding support in childcare settings is rarely considered. Apart from an exploratory New Zealand study (Farquhar and Galtry, 2003) and investigations by the Australian Breastfeeding Association (Lording 2008), an evidence base for its development has been largely lacking (Javanparast *et al*. 2012).

Breastfeeding is a key maternal and child health indicator. Lack of breastfeeding results in poorer maternal and child health. It is well established as a risk factor for many infectious illnesses and immune disorders and later life chronic disease, as well affecting short and long term maternal health including higher rates of breast cancer (Bauchner *et al*. 1986; National Health and Medical Research Council, 2013; Horta *et al*. 2007; Ip *et al*. 2007; American Academy of Pediatrics *et al*. 2012). Infant and young child feeding has significant implications for the national chronic disease burden because of links between premature weaning and obesity, cancer and other chronic conditions (Smith and Harvey, 2011).

Virtually all mothers in Australia initiate breastfeeding, and around 60 per cent continue breastfeeding for around six months or more (Australian Institute of Health and Welfare (AIHW) 2011). Among employed mothers breastfeeding rates are lower, 52 per cent. In 2010, Australian governments endorsed the Australian National Breastfeeding Strategy (ANBS) aimed at increasing exclusive and sustained breastfeeding, including among employed mothers and through encouraging more breastfeeding friendly workplace and childcare settings (Australian Health Ministers' Conference (AHMC), 2009). Around 40 per cent of Australian mothers are employed during the first 12 months after childbirth (Baxter, 2008). In recent decades public policy has encouraged labour force participation by women to address concerns about gender inequity and population aging (Smith, 2007).

Many overseas studies have found a negative association between maternal employment and breastfeeding duration (Winicoff and Castle, 1988; Kurinij, 1989; Gielen *et al*. 1991; Lindberg, 1996; Visness and Kennedy, 1997; Fein and Roe, 1998; Roe *et al*. 1999; Chatterji and Frick, 2003; Ryan *et al*. 2005; Hawkins *et al*. 2007; Thulier and Mercer, 2009; Mandal *et al*. 2012). Australian research has also found lower breastfeeding rates among employed new mothers (Cooklin *et al*. 2008), especially those employed full time (Baxter *et al*. 2009).

The potential role of workplaces in facilitating or hindering breastfeeding among employed new mothers is increasingly being recognised. The extent and impact of discrimination against breastfeeding mothers in United States workplaces has recently been related (Murtagh and Moulton, 2012). The role of childcare services, on the other hand, is rarely acknowledged. Overseas studies have shown reduced

[1] Sections 7AA and 22 of the Sex Discrimination Act (1984).

breastfeeding prevalence or duration among children enrolled in childcare (Weile *et al*. 1990; Pettigrew *et al*. 2003). In Australia, self-employment and using informal rather than formal childcare is associated with higher rates of breastfeeding among employed mothers (Baxter, 2008).

Enrolment in childcare is a recognised risk factor in epidemiological studies of infectious illness such as gastroenteritis and otitis media among infants and young children. Lack of breastfeeding is known to double the incidence of these infectious illnesses (Duijts *et al*. 2010), and is an independent risk factor for such conditions among infants in childcare (Kero and Piekkala, 1987; Scariati *et al*. 1997). A recent study using data from the Longitudinal Study of Australian Children (LSAC) found that infants in formal childcare for long hours experienced higher rates of illness than infants who were cared for at home or were in childcare for fewer hours (Harrison *et al*. 2009). For example, 'infants attending centre-based care were at greater risk of having ongoing infections than infants receiving home-based care' (p. 160), and infants in long day care were almost twice as likely to have at least one of these health problems as children in exclusive parental care. Also, the number of hours a child spent in long day care was significantly related to whether that child had ongoing problems with infectious illness:

> 'Compared to children who attended only home-based care settings (zero hours in centre-based care), those who spent 21 or more hours in centre-based care were more than three times as likely to have ongoing problems with diarrhoea, colitis or other infections.'(p. 126)

Childcare is important to whether mothers can effectively combine paid work with caring for young children including whether employed mothers can continue breastfeeding as recommended by health authorities in the interests of their own and their child's health.

Breastfeeding support has recently been noted as an element of childcare quality by Australia's childcare regulatory authority (Australian Children's Education and Care Quality Authority (ACECQA), 2011). However, breastfeeding support is not required for accreditation, and is not an element of national law and regulations which mandate minimum standards for childcare services.

The World Health Organisation in its *Global Strategy on Infant and Young Child Feeding* called for child-care facilities, 'to support and facilitate continued breastfeeding and breast-milk feeding' (World Health Organisation (WHO), 2002, p. 16).

Recent amendments to the *Sex Discrimination Act 1984*, which came into effect on 1 July 2011, extended its protections to include discrimination on the ground of breastfeeding.[2] The changes established breastfeeding as a specific ground of discrimination prohibited by the Act (section 7AA). **Direct discrimination** under

[2] Federal sex discrimination law in Australia covers discrimination such as on the ground of 'sex', 'marital status', 'pregnancy or potential pregnancy', and in areas of public life including 'work and superannuation' and 'the provision of goods, services, and facilities'. The definitions of discrimination include both 'direct' and 'indirect' discrimination, although protection against discrimination on the ground of family responsibilities is limited to direct discrimination in employment. The 2011 amendments extended the scope of protection against direct discrimination in employment on the grounds of family responsibilities to all aspects of employment not just termination.

section 7AA (1) includes treating a breastfeeding woman less favourably than someone who is not breastfeeding. **Indirect discrimination** under section 7AA (2) of the Act occurs if a person imposes a condition, requirement or practice which has the effect of disadvantaging persons who are breastfeeding. A person will not be found to have indirectly discriminated on the ground of a woman breastfeeding if she or he can show that the condition, requirement or practice is reasonable in the circumstances (section 7B).

The practical implications of the changes include that measures must now be taken to accommodate the needs of breastfeeding women in the workplace and elsewhere (Robinson, 2011). For example, employer practices that do not allow breaks during the working day could represent indirect discrimination against breastfeeding mothers (Power, 2011).

While the sex discrimination legislation is not specific to childcare, childcare services have the same obligations as other services to comply with it. Direct discrimination by childcare services could include, for example, a family day care educator refusing to accept care of a child that was currently breastfed until it was weaned, staff refusing to handle expressed breast milk, or women being prevented from breastfeeding on the childcare premises. Whether indirect discrimination occurs will depend on what is reasonable in the circumstances. Unreasonable conditions, requirements or practices which disadvantage breastfeeding women might include lack of suitable place to breastfeed or express milk, or lack of lactation breaks for breastfeeding staff. Requiring exclusively breastfeeding mothers to pay childcare fees which cover the service's costs of supplying formula, or exclusion policies which over-diagnose diarrhoea in breastfed infants could also constitute indirect discrimination. Staff recruitment or training practices that included qualifications, training, or experience on caring for formula fed infants but not breastfed infants might also be considered to be indirect discrimination.

Discrimination against breastfeeding mothers is difficult to distinguish from lack of accommodation of breastfeeding mothers, and failure to accommodate or provide support needed by breastfeeding mothers might be considered to be unlawful discrimination under the legislation.

Research to date has suggested that the social setting in Australia may be more conducive to breastfeeding support in childcare services than in other countries. For example, Australian childcare services were much more likely than in the United States to encourage and accommodate mothers to visit for breastfeeding, have written policies of encouraging breastfeeding, provide parents with resources on breastfeeding, and refer parents to community resources for breastfeeding support (Cameron *et al*. 2012). The importance of improving staff knowledge, attitudes and training on breastfeeding has been the focus of research in the United States (Clark *et al*. 2008; Clark *et al*. 2008), and this has also been shown to be an issue in Australia (Lording 2008; Cameron *et al*. 2012) and New Zealand (Farquhar and Galtry, 2003). Allowing mothers of three month old infants to breastfeed on the premises, and agreeing to feed infants their mothers' expressed milk, are policies and practices which have been shown to be associated with an increased likelihood that mothers were still breastfeeding at 6 months (Batan *et al*. 2012).

However, a recent qualitative inquiry into childcare centres in metropolitan Adelaide (Javanparast *et al*. 2012) found their support to be ad hoc and based on the personal experience of individual staff. The broader societal context, not childcare factors, was perceived by centre leadership as driving women's breastfeeding decisions. Services perceived a lack of demand from parents for improving breastfeeding support, and identified budget, space and staff attitudinal constraints to doing so. Services saw their role in supporting breastfeeding as entirely passive, and in some centres staff and centre leadership lacked positive attitudes to breastfeeding, including towards handling breast milk. Lack of knowledge resulted in inappropriate advice about introducing bottles or formula before commencement in childcare.

A number of domains are emerging as central to accommodation or support of breastfeeding in childcare in the Australian context. Based on the earlier New Zealand study (Farquhar and Galtry, 2003), the 2008 Australian Breastfeeding Association report (Lording, 2008) summarises the key dimensions of 'breastfeeding-friendly childcare' as 'communication and relationships', 'space, facilities and equipment', 'policy and administration', and 'breast milk storage, handling and feeding procedures'. These categories included referral to breastfeeding specialists/health professionals when mothers need specific advice or assistance, and adequate and appropriate training of staff to support the mothers' ongoing breastfeeding.

The above suggests a need for more comprehensive information and analysis of discrimination against breastfeeding mothers by childcare services in Australia, on what accommodations childcare services currently make for breastfeeding mothers, and on whether these existing forms of support are related to breastfeeding prevalence among enrolled children in those services.

Our aim in this study is to investigate the extent and nature of direct and indirect discrimination against breastfeeding mothers by childcare services in Australia, and the awareness of the legal protections for breastfeeding mothers using childcare services. As lack of accommodation of breastfeeding since July 2011, can be considered as discrimination against breastfeeding mothers, our specific objectives also include documenting the conditions, requirements or practices in childcare services in Australia which may support or disadvantage breastfeeding mothers and their children in childcare, and exploring links between provision of such accommodations, and breastfeeding prevalence among children enrolled in childcare services.

2. Data and method

Study design and data collection

Our study was conducted according to a protocol approved and monitored by the Human Research Ethics Committee of the Australian National University (ANU Human Ethics Protocol 2011/285, 8/6/11). The focus of the study is data from a population-based sample survey of Australian childcare services. The study population was 4,476 childcare service providers from New South Wales, Queensland, South Australia and the Australian Capital Territory, obtained from the Australian Government online childcare database (www.mychild.gov.au). Only four jurisdictions were chosen for reasons of economy in study implementation; these four represent both large and small population states, include jurisdictions which have mainly urban versus rural

population locations, and include over two-thirds (69 per cent) of all childcare services in Australia.

The targeted sample size was 160 childcare service providers which were estimated to achieve adequate statistical power to detect significant differences among respondents. The population was stratified by childcare type and jurisdiction, with disproportionate random selection (oversampling some types of childcare and jurisdictions) to achieve a minimum cell size of five. Seven hundred and thirty seven providers of care for children aged less than two years were invited to join 'a study of policies and practices in childcare settings which help mothers continue breastfeeding their babies' in August 2011. We collected data from these services through a cross-sectional online survey with the option for the service to complete and return the survey by post.

The survey took place between 1 August 2011 and 22 February 2012. Study invitations were sent to childcare providers by email and post. Childcare service directors were requested to complete the provider survey online or by posting the completed paper survey form. Email reminders were sent at the end of each month following the initial email invitation up to the closure of the study. Childcare service directors were requested to complete the provider survey online or by posting the completed paper survey form. Childcare services were also asked to publicise the mothers' survey to their female clients.

The mothers' survey was conducted online with a hard copy/mail option and targeted female clients of the participating childcare services who had a child aged less than four years that had attended childcare regularly before two years of age. Participants of the childcare services provider survey were given the opportunity to enter a draw for one of 30 copies of *Merrily Merrily*, a well-known book of songs and rhymes for young children, or 30 Health Facility/Organisation subscriptions to the Australian Breastfeeding Association (ABA). Participants of the mothers' survey were given the opportunity to enter a draw for a $100 gift voucher from a preferred merchant. Design of the two survey questionnaires drew on both community-based experience and studies of promoting effective breastfeeding support for employed mothers (Farquhar and Galtry, 2003; Eldridge and Croker, 2005; Lording 2008), and on a small number of academic studies about breastfeeding support in childcare (Clark *et al*. 2008; Clark *et al*. 2008; Labbok *et al*. 2010; Cameron *et al*. 2012; Javanparast *et al*. 2012). These informed the identification and categorisation of a variety of detailed breastfeeding support measures into five domains affecting a breastfeeding mother's opportunity to continue breastfeeding if their infant or child attended childcare: a welcoming environment and management attitudes to breastfeeding support and referral; suitable onsite facilities to accommodate breastfeeding or expressing milk which minimise difficulties inherent in physical separation of mother and infant; staff capabilities (knowledge, attitudes, training, qualifications and experience) in supporting breastfeeding and helping the mother manage breastfeeding and providing expressed milk; written policies which systematically and effectively communicate management support for ongoing breastfeeding among clients and staff; and, practices and procedures which facilitate breast milk feeding. Survey questionnaires were pre-tested by volunteers recruited through ABA including some with employment experience in childcare services.

Both quantitative and qualitative data were collected in the surveys. Quantitative data collected included information on factors which were known from previous studies to influence breastfeeding rates, including maternal socio-demographic variables and childcare service characteristics and on provision of various forms of breastfeeding support relevant to a childcare setting. The childcare service provider questionnaire contained 35 questions and asked about the number of enrolments (by age group), including of children who were breastfeeding, types of breastfeeding support offered, the barriers and benefits of becoming a more breastfeeding friendly service provider, as well as childcare service characteristics such as State, location, and service type (Long Day Care (LDC), Family Day Care (FDC), Occasional Care (OC) and In-Home Care (IHC)). The mothers' questionnaire contained 60 questions and asked about key demographic characteristics, enablers of and barriers to breastfeeding, maternal reports of the childcare service's support for their breastfeeding experience in childcare, and infant feeding and maternal and child health outcomes. Both surveys had questions on the respondent's awareness of sex discrimination law protection of breastfeeding mothers who use childcare services, and regarding experience of breastfeeding discrimination by childcare services.

Both surveys had open-ended questions that provided respondents with an opportunity to further comment on certain areas such as discrimination or barriers and enablers to breastfeeding intentions or outcomes; these responses were used for data analysis, and interpretation of results.

Data analysis

Data analysis mainly used quantitative data provided by childcare service providers. We also present and analyse qualitative and quantitative data from women who used those services and participated in the mothers' survey.

Qualitative data from the survey of mothers was used to identify themes and key barriers and enabling factors regarding breastfeeding an infant or young child in childcare and to illustrate results including experiences that may represent direct or indirect discrimination under Australian law.

Childcare services data was used to describe service providers' awareness about legislative protections for breastfeeding, and their knowledge of discrimination experienced by mothers. Data from the mothers' survey was used to describe the awareness and experience of discrimination in childcare reported by mothers, for the same or similar questions on discrimination.

Data on support offered by childcare services was used to describe the proportion of childcare services offering each type of support. Data is also presented from the survey of mothers on whether they received these types of support. Only responses from currently breastfeeding mothers are reported for this analysis due to the high rate of 'don't know' responses among mothers who were not currently breastfeeding.

Analysis of data from childcare services also explored relationships between services characteristics, support and accommodation of breastfeeding, and breastfeeding outcomes. Significance was set at 0.05 for these analyses.

Chi-square tests of independence were used to ascertain if there was a significant relationship between childcare service characteristics such as State (ACT,

NSW, QLD, SA), location of the service (major urban, minor urban, rural), and its ownership (for profit, not for profit), and the likelihood that the service offered various kinds of breastfeeding support. The association with childcare type (LDC, FDC, and OC was also considered. This analysis excluded responses from IHC services as there were only two such providers in the sample. Our analysis also excluded responses of 'don't know' and missing responses.

A one-way between-groups analysis of variance (ANOVA) was conducted to examine whether breastfeeding prevalence among enrolled infants and children was associated with the above service characteristics. As preliminary analysis showed possible violation of normality and homogeneity of variance assumptions, robust tests of equality of means (Welch and Brown-Forsythe) and non-parametric tests (Kruskal-Wallis) were conducted. Finally, we investigated whether breastfeeding prevalence was higher in childcare services which offered breastfeeding support, using two sided T-tests of significant mean differences in prevalence for each type of support that childcare services might offer. Preliminary tests were conducted to ensure no violation of assumptions of normality. As the number of providers was reasonably large, positive skew in distribution of breastfeeding prevalence was not expected to substantially affect the analyses. However, as there was significant skew and kurtosis for newborn prevalence, non-parametric (Mann-Whitney U) tests were also conducted.

Breastfeeding prevalence in childcare services was calculated from childcare service responses on enrolments, and numbers of breastfed infants enrolled. As the factors which influenced breastfeeding are likely to differ for infants and older children, we analysed breastfeeding prevalence separately for three different age groups. Comparisons were made for three breastfeeding outcome measures: for newborns (less than six months), infants (six months to one year), and toddlers (one to two years). These age groups are pertinent because exclusive breastfeeding is recommended for six months, one year is the recommended NHMRC and Australian minimum duration (Australian Health Ministers' Conference (AHMC), 2009; National Health and Medical Research Council (NHMRC), 2013), while two years is the minimum period for which the WHO recommends infants remain breastfed (World Health Organisation (WHO), 2002).

3. Results

Participants

After excluding ineligible respondents and very incomplete responses, data were obtained from a total of 178 childcare services, an overall response rate of 24 per cent (178/729).

As can be seen in table 1, 151 childcare services (85 per cent) were long day care (LDC) facilities. A further nine (five per cent) were family day care (FDC). Sixteen services (nine per cent) were occasional care (OC), and two (one per cent) provided in home care (IHC). The majority (65 per cent) were not for profit (NFP). Around half of the 178 providers were in major population centres. Virtually all (97 per cent) of those completing the childcare service survey described themselves as childcare 'director 'or 'manager'. NSW and LDC services were slightly underrepresented and SA, ACT and OC services slightly overrepresented due mainly to our sampling strategy (table

1). Reported enrolments in these services included 175 breastfed infants aged less than 6 months (out of 346 in this age group), 175 infants aged 6 months to one year (1,282 enrolments) and 173 young children aged one to two years (3,337 enrolled).

Table 1 - Characteristics of study population and sample of participating childcare services

	Participating childcare services (n=178) (%)	*Study population[a] (n=4476) (%)*	*All childcare services in Australia (%)*
Service type			
Long day care (LDC)	85	93	92
Family day care (FDC)	5	5	5
Occasional care (OC)	9	1	1
In-home care (IHC)	1	1	1
State			
ACT	9	3	2
NSW	42	58	40
QLD	35	32	22
SA	14	7	5
NT	-	-	1
TAS	-	-	2
VIC	-	-	20
WA	-	-	8
Location			
Major urban (population of 100,000 and over)	46	NA	NA
Other urban (population of 1,000 - 99,999)	38	NA	NA
Rural	16	NA	NA
Type of organisation			
Not-for-profit	65	NA	NA
For-profit	35	NA	NA

Notes: [a] Childcare services in ACT, NSW, Qld and SA

A total of 89 mothers participated in the mothers' survey, 31 of whom were currently breastfeeding. Table 2 shows the characteristics of these mothers. More than 80 per cent had children now aged more than 12 months, and the average age at which the infant had commenced childcare was ten months; this was slightly younger for currently breastfeeding mothers. The respondents came from 55 different childcare services, of which 35 were participants in the childcare services survey. Three quarters of respondents were enrolled in long day care, and there was a notably high response rate in NSW compared to other states. Just over half of the respondents were in major population centres. Half of the mothers (52 per cent) were employed part time, and 25 per cent full time.

Table 2 - Characteristics of participating childcare mothers

	Childcare Mothers, All (n=89) %
Service type	
Long day care (LDC)	78
Family day care (FDC)	15
Occasional care (OC)	8
State	
ACT	8
NSW	62
QLD	19
SA	11
Place of Residence	
Major urban (population of 100,000 and over)	57
Other urban (population of 1,000 - 99,999)	27
Rural	16
Family type	
Couple	93
Single parent	7
Household income (annual)	
Less than $31,999	4
$31,200 - $51,999	9
$52,000 - $77,999	15
$78,000 - $114,399	37
$114,400 or more	35
Education	
Secondary and below	6
Advanced diploma/diploma/certificate	24
Bachelor degree	42
Graduate diploma/certificate	8
Post graduate degree	21
Current work status	
Employed full time[a]	25
Employed part time[b]	52
Employed and currently not working (e.g. paid maternity leave)	8
Self employed	9
Not in the labour force/unemployed	7
Occupation	
Professional	55
Clerical and Administrative Worker	18
Manager	9
Community and Personal Service Worker	12
Sales Worker	4
Technician and Trade Worker	1
Age of child	
< 6 months	2
6 to 12 months	17
13 to 24 months	32
> 2 years	49
Age of mother	
29 years and below	20
30-34 years	32
35-39 years	33
40 years and above	14
Country of Birth	
Australia	87
Mean age of infant when started childcare (months)	10

Notes: [a] 35 hours or more weekly including overtime. [b] Less than 35 hours weekly.

Qualitative data analysis – enablers of and barriers to breastfeeding in childcare

Comments from mothers on what influenced their breastfeeding practices after their child's enrolment in childcare reflected the following themes; awareness of active staff or centre management support; appropriate facilities at childcare service; staff knowledge and willingness to support and facilitate feeding of mothers' milk; and publicly supportive or accommodative written policies or practices. Responses from mothers also referred to external factors such as proximity to infant, time constraints and work schedules, and milk supply issues associated with separation from the infant and needing to express milk.

Examples of enabling factors reported by mothers are: 'being able to go in and feed him each day', 'can breastfeed comfortably at the centre if necessary', 'staff being supportive of it', 'there is a fantastic attitude towards breastfeeding in my workplace and also within the daycare centre'.

On the other hand, the key barriers at the childcare service identified by mothers were lack of facilities, and difficulties expressing or breastfeeding. The latter were often related to problems caused by lack of proximity to the infant and by time constraints on expressing or breastfeeding imposed by work schedules: 'unavailable quiet space, I needed a space where I could lay down and nurse my daughter, but this was very difficult to achieve', 'took my whole lunch break to travel to and from the centre to breastfeed', and 'finding the time at work to express'.

Comments from mothers on discrimination were few but illustrative; 'A private provider would not let me breastfeed my child at lunchtime in the centre. I had to go to my car.' Yet another reported that she 'had to feed in the office'. Subtle pressures were also exerted to discourage breastfeeding with one mother reporting being told that it would be easier to give her baby formula rather than continue struggling with breast milk supply. Another mother reported that 'it's not offered as an option so never questioned'.

Quantitative data analysis – discrimination, breastfeeding support, and breastfeeding prevalence

Discrimination law awareness and reported experiences of discrimination

Table 3 reports childcare service provider responses to questions on their awareness of the law applying to childcare services and on their knowledge of the issue occurring in childcare. Questions were: 'Are you aware of any legislation in Australia that covers discrimination by childcare service providers on the grounds of breastfeeding?', and 'Do you personally know mothers who have experienced discrimination by childcare service providers related to breastfeeding?'

Responses suggest that only around one of four childcare services are well-informed on relevant discrimination laws which apply to their sector. Nearly two thirds (61 per cent) of childcare service leaders were unsure or unaware of the legal responsibilities of childcare services under current legislation. Around one in twenty said they knew mothers who had experienced discrimination by childcare services. It should be noted that these were not necessarily the services which responded to our survey, as they may have been reporting on experiences of mothers using other childcare services.

Table 3 - Experience of discrimination in childcare

	Providers (N=178)		*Mothers (N=89)*	
Awareness and knowledge of discrimination (%)	*Yes*	*No or unsure*	*Yes*	*No or unsure*
Are you aware of any legislation in Australia that covers discrimination by childcare service providers on the grounds of breastfeeding?	20	79	21.3	79
Do you personally know mothers who have experienced discrimination by childcare service providers related to breastfeeding?[a]	5	95	n.a.	n.a.
Have you ever experienced any discrimination from childcare service providers related to breastfeeding?[b]	n.a.	n.a.	5	96

Notes: [a] This question was not asked in the survey of childcare mothers. [b] This question was not asked in the survey of childcare services

In the mothers' survey, mothers were asked, 'Have you ever experienced any discrimination from childcare service providers related to breastfeeding?' Responses from mothers are reported in table 3.

Only 21 per cent of the mothers using childcare were aware of Australian legislation covering discrimination against breastfeeding by childcare services. Around half (54 per cent) were not aware any legislation and a further 25 per cent were unsure. Among mothers, five per cent reported having themselves experienced discrimination against breastfeeding in childcare. The proportion was higher (10 per cent) among the currently breastfeeding mothers.

Breastfeeding accommodation in childcare

Discrimination can be indirect as well as direct. Indirect discrimination is where a condition, requirement or practice disadvantages breastfeeding women.

Lack of support or accommodation for breastfeeding mothers in a childcare service, unless it can be shown to be reasonable, may be unlawful indirect discrimination if it disadvantages breastfeeding mothers compared to those not breastfeeding. If a policy, practice or procedure is associated with higher breastfeeding prevalence in a childcare service, this suggests that a childcare service which does not provide such accommodation or support may be disadvantaging breastfeeding women (through for example, causing a lactating mother discomfort, or taking away her option of breastfeeding her child), and therefore may be acting unlawfully.

Table 4 reports responses from childcare services on the extent and nature of breastfeeding accommodations and support which they offered. Services reported high rates of provision for some forms of accommodation and support, such as welcoming access by breastfeeding mothers and having breastfeeding policies, but much lower rates of support in the form of communicating supportive policies, or regarding staff training or qualifications on breastfeeding. Table 4 also reports responses to questions on the availability of these support measures, but from breastfeeding mothers whose children were enrolled at one of the sampled childcare services. The pattern of support reported by mothers was broadly similar, but generally mothers reported experiencing lower rates of support on the individual measures than was reported by providers.

Table 4 - Breastfeeding accommodation and support in childcare – childcare services and childcare mothers' reports

Breastfeeding accommodation/support	*Childcare services % reporting this support (n=178)*	*Childcare mothers % reporting this support[a,b] (n=31)*
Environment/ management attitudes		
Encourage parents to come to the service as often as they prefer	98	84
Display 'Breastfeeding is Welcome Here' sign	48	52
Display posters showing breastfeeding as normal	60	32
Provide children's books and toys showing breastfeeding as normal	61	16
Provide information on ABA Breastfeeding Helpline	70	23
Provide information on local ABA groups	67	13
Provide information on ABA website	64	16
Provide information on breastfeeding websites	57	10
Facilities		
Suitable place for expressing milk e.g., with privacy, power point	69	100
Facilities for hand washing	88	100
Easy access to car parking for dropping in to breastfeed	90	100
Comfortable chair or convenient place for breastfeeding	94	100
Fridge for milk storage	98	100
Staff support and capabilities		
Staff have formal training or qualifications in breastfeeding support	51	10
Staff have training in storing, handling and feeding EBM[c]	75	29
Provide quality breastfeeding resources for parents and staff	71	13
Staff have personal experience of breastfeeding in childcare	87	26
Policies		
Written policy on breastfeeding support for mothers	68	26
Policy communicated to all parents at first contact	78	n.a
Policy is communicated to all staff	97	n.a
Children of staff can attend the childcare service	93	n.a
Staff allowed to take lactation breaks for own baby	98	n.a
Practices		
Display procedures for handling, storing EBM	69	26
Label and store EBM with date and child's name	93	54
Cup-feed child with EBM if requested by mother	98	77
Contact mothers by phone when child requires breastfeeding	90	39
Welcome mothers to breastfeed at the childcare service	98	84

Notes: [a] Among those currently breastfeeding. [b] Responses of 'don't know', and missing responses were excluded from the analysis. [c] Expressed breast milk.

Breastfeeding support and childcare service characteristics

Table 5 presents analysis of breastfeeding support by service characteristics, using Chi-square tests of independence.

We found some statistically significant relationships between childcare service characteristics and breastfeeding supports offered.

There were some significant relationships between the type of childcare (LDC, FDC, OC) and the proportion of services offering breastfeeding supports, for example, provision of information on breastfeeding websites $\chi 2$ (2, n = 175, p 0.015, Cramer's V = 0.219), having a written policy on breastfeeding support for mothers $\chi 2$ (2, n = 176, p=0.002 Cramer's V = 0.264), and displaying procedures for handling,

Table 5 - Breastfeeding support measures offered by characteristics of childcare service, Chi square tests of independence

	Services offering the support measure								
	Service Type				*State*				
Breastfeeding accommodation/support %	*LDC*	*FDC*	*OC*	*p-value*	*ACT*	*NSW*	*QLD*	*SA*	*p-value*
Environment/ management attitudes									
Display posters showing breastfeeding as normal	62	56	44	0.37	53	49	75	58	0.02*
Provide information on ABA Breastfeeding Helpline	69	67	73	0.93	69	62	83	58	0.03*
Provide information on local ABA groups	68	44	73	0.31	56	66	77	50	0.09
Provide information on breastfeeding websites	60	22	33	0.02*	50	55	60	50	0.80
Facilities									
Comfortable chair or convenient place for breastfeeding	95	78	100	0.06	100	90	97	96	0.30
Fridge for milk storage	99	89	100	0.08	100	97	98	100	0.77
Staff support and capabilities									
Staff have training in storing, handling and feeding EBM	64	67	56	0.82	65	47	75	79	0.002*
Staff have personal experience of breastfeeding in childcare	87	86	87	0.10	50	95	87	75	0.001*
Policies									
Written policy on breastfeeding support for mothers	73	56	31	0.002*	71	67	67	71	0.98
Children of staff can attend the childcare service	93	100	86	0.42	73	91	98	96	0.008*
Practices									
Display procedures for handling, storing EBM	73	25	54	0.009*	67	56	80	78	0.03*

	Ownership			*Location*			
Breastfeeding accommodation/support	*Not for profit*	*For profit*	*p-value*	*Minor urban*	*Minor urban*	*Rural*	*p-value*
Environment/ management attitudes							
Provide information on breastfeeding websites	47	71	0.003*	53	62	52	0.47
Facilities							
Comfortable chair or convenient place for breastfeeding	96	90	0.10	96	96	85	0.09
Staff support and capabilities							
Provide quality breastfeeding resources for parents and staff	66	81	0.05*	64	84	63	0.02*
Staff have personal experience of breastfeeding in childcare	86	87	0.94	77	95	96	0.006*
Policies							
Staff allowed to take lactation breaks for own baby[a]	100	93	0.01*	98	97	100	0.61

Notes: [a] Small cell size. *significant p<0.05), ** highly significant p<0.001.

storing expressed breast milk (EBM) $\chi 2$ (2, n = 160, p=0.009, Cramer's V = 0.243). For example, 60 per cent of LDC services provided information on breastfeeding websites, whereas less than a third of OC or FDC services did so. Likewise, a higher proportion of LDC services had the above policies and procedures on breastfeeding and EBM handling.

There were significant associations between the State in which the childcare service was located and the proportion of services whose childcare workers received training in storing, handling and feeding expressed breast milk, $\chi 2$ (3, n = 174, p = 0.002, Cramer's V = 0.292). For example 47 per cent of NSW services reported this compared to 79 per cent in SA.

There was a significant association between ownership of the childcare service (for profit, not for profit), and whether services provided information about relevant websites on breastfeeding, $\chi 2$ (1, n = 174, p = 0.003, Phi = -0.228), with for profit services more likely (71 per cent) to provide this than not for profit services (47 per cent).

No statistically significant relationships were found between childcare service location (major urban, minor urban, rural) and whether any of the breastfeeding supports were provided.

ANOVA revealed no significant differences in breastfeeding prevalence between States, location, type, or ownership category for any of the age groups (not presented).

Breastfeeding support and breastfeeding prevalence in childcare

Table 6 reports t-tests comparing mean breastfeeding prevalence in a childcare service according to whether or not the childcare service reported that it provided this breastfeeding support measure. Analyses are for newborns (less than six months), infants (six months to one year), and toddlers (one to two years). Breastfeeding prevalence in childcare services varied significantly according to the types of support for breastfeeding that were offered by childcare services. Statistically significant variables were found across all five of the support domains proposed; environment, facilities, staff capabilities, and policies and practices, and the effect was in the expected direction. Whether or not a particular type of support was linked to breastfeeding outcomes differed between children's age groups.

For breastfeeding prevalence among the youngest infants, the most important measures for breastfeeding support were in the domains of childcare services' environment and management attitudes, and staff support and capabilities. Specifically, in childcare services that did not display posters showing breastfeeding as normal practice for babies and young children, breastfeeding prevalence among infants aged less than six months were 26 per cent, significantly lower than breastfeeding prevalence of 46 per cent at services which did display such posters (p=0.037). There was also significantly lower mean prevalence of infants aged less than six months breastfeeding at services where the service did not provide information on the national ABA Breastfeeding Helpline (p=0.033), where staff did not have formal training or qualifications in breastfeeding support (p=0.011), or where children of staff could not attend the childcare service. The results for the youngest children suggests the importance for mothers of younger babies of knowing breastfeeding was welcomed, and dealing with staff who had adequate breastfeeding support skills and knowledge to refer mothers for help if they needed it.

Table 6 - Differences in mean breastfeeding prevalence in childcare services by domain and type of support offered, two-sided T tests[a])

	Breastfeeding prevalence (%)								
Child age	*< 6 months*			*6 months to 1 year*			*1-2 years*		
Breastfeeding accommodation/support	*Yes*	*No*	*p-value*	*Yes*	*No*	*p-value*	*Yes*	*No*	*p-value*
Environment/ management attitudes									
Display posters showing breastfeeding as normal	46	26	0.037* (0.082)	24	25	0.885 (0.509)	6	6	0.821 (0.513)
Provide information on ABA Breastfeeding Helpline	45	20	0.033* (0.048*)	24	25	0.836 (0.514)	7	3	0.027* (0.098)
Provide information on local ABA groups	37	45	0.460 (0.476)	24	24	0.971 (0.959	7	3	0.034* (0.274)
Provide information on ABA website	42	35	0.544 (0.606)	25	22	0.597 (0.462)	7	3	0.006* (0.033*)
Facilities									
Comfortable chair or convenient place for breastfeeding[b]	40	33	0.881 (0.847)	25	2	0.0001** (0.072)	6	6	0.983 (0.494)
Staff support and capabilities									
Staff have formal training or qualifications in breastfeeding support	52	27	0.011* (0.013*)	31	17	0.009* (0.004*)	5	7	0.367 (0.895)
Provide quality breastfeeding resources for parents and staff	42	34	0.432 (0.488)	28	14	0.018* (0.014*)	6	6	0.970 (0.212)
Staff have training in storing, handling and feeding EBM	40	46	0.683 (0.672)	28	14	0.015* (0.026*)	5	8	0.268 (0.806)
Policies									
Children of staff can attend the childcare service[b]	42	6	0.002* (0.223)	23	35	0.312 (0.589)	5	11	0.569 (0.686)
Practices									
Contact mothers by phone when child requires breastfeeding[b]	38	75	0.060 (0.041*)	24	24	0.955 (0.919)	6	5	0.864 (0.949)

Notes: [a] p-values for Mann-Whitney U tests in parenthesis. [b] Small cell size. *significant p<0.05), ** highly significant p<0.001.

For older infants (six months to one year) breastfeeding prevalence was significantly lower at childcare services that were lacking in the domain of facilities, or staff support and capabilities; that is, where the service did not provide a comfortable chair or convenient place for breastfeeding ($p<0.000$), where childcare workers at the service had no formal training or qualifications in breastfeeding support ($p=0.009$), where there was no access for childcare workers and parents to resources such as quality books, booklets, or CD/DVD materials on breastfeeding ($p=0.018$); or where staff had received no training in storing, handling and feeding expressed breast milk ($p=0.015$). This suggests that breastfeeding mothers of older infants were disadvantaged if they could not visit the service to breastfeed or if staff were not skilled in handling EBM or were not well informed about breastfeeding older babies.

For toddlers in childcare (one to two years), the most important domain was environmental and attitudinal: childcare services had significantly lower rates of breastfeeding prevalence where they did not provide information on accessing the national ABA Breastfeeding Helpline ($p=0.027$), on accessing the ABA website ($p=0.006$), or on contacting ABA mother-to-mother support groups ($p = 0.034$). This suggests social support was particularly important for breastfeeding mothers of toddlers, in contrast to the young infants when practical supports such as a specific place to breastfeed or access to trained staff were more necessary.

Effect sizes (measured as eta squared) are moderate to large in some of these analyses. For example, breastfeeding support explains six to 11 per cent of variance in breastfeeding prevalence in the two younger age groups for the variables indicating provision of information to mothers of infants on accessing the national ABA Breastfeeding Helpline, and staff having training in breastfeeding support.

Most of the same variables remained significant or approached significance using non-parametric tests (Mann-Whitney U).

4. Discussion

This study is unique in its use and analysis of wide ranging new data on breastfeeding support across childcare settings in Australia, and in its focus on the issue of discrimination against breastfeeding in childcare. Key findings relate to the low awareness of relevant law, the existence of discrimination against breastfeeding mothers in childcare services, and the links between accommodation and support for breastfeeding and breastfeeding prevalence among children enrolled in Australian childcare services.

Importantly, while there was a low degree of reported discrimination against breastfeeding in childcare services, it is a concern to find it exists at all. Also, there was limited knowledge about protection of breastfeeding under sex discrimination legislation among both childcare services and mothers accessing these services so discrimination may be underreported. Mothers related that they assumed they could not keep breastfeeding once their child commenced in childcare, and were unaware they could ask their childcare service to provide reasonable accommodation and support for their breastfeeding. In such cases, discrimination is unlikely to be recognised as such.

Particularly important to the issue of discrimination in childcare services is our finding is that significantly lower breastfeeding prevalence was evident in

childcare services that did not offer certain breastfeeding support measures. We also found, unsurprisingly, that the types of breastfeeding support that were important to breastfeeding prevalence among children enrolled in childcare varied by the age group of the children.

There were high levels of support for breastfeeding as reported by the participating childcare services. Childcare services reported higher levels of support than mothers. However, mothers may not have been aware of such support being available if they did not have a particular current need of it including even if were currently breastfeeding.

A further interesting finding was that childcare service characteristics such as State, location, type and not for profit status were not significantly associated with breastfeeding prevalence among children in childcare. However, this may reflect inadequate sample size, given that characteristics such as type of childcare or not for profit status are only a very broad indicator of factors affecting breastfeeding continuation in childcare.

Our research extends previous studies in Australia and overseas by comprehensive documentation and quantitative analysis of the wide range of potential supports for breastfeeding in the Australian childcare setting. This enabled us to show that childcare services can provide effective support for breastfeeding in a number of ways in addition to agreeing to feed children their mothers' milk, or by permitting mothers to breastfeed on premises (Batan *et al*. 2012).

Our findings confirm the picture revealed through an earlier comparison with the United States (Cameron *et al*. 2012); while there is a weaker degree of policy support for breastfeeding in childcare, Australian childcare services reflect a more supportive social and economic environment with comparatively widespread encouragement for mothers to breastfeed at childcare, and provision of access to facilities such as a comfortable place to breastfeed. Our study provides supporting evidence however, that appropriate referral of mothers by childcare services to sources of information and support for breastfeeding is considerably less frequent than the provision of facilities yet is particularly important to breastfeeding mothers of young infants or toddlers. Our findings also reinforce concerns raised in other studies about the low level of relevant training among childcare workers, and a relative absence of specific measures to ensure that all parents perceive and experience that breastfeeding is both normal and welcome in childcare.

Our results showing the variability of support and breastfeeding prevalence in childcare raise the issue that individual childcare services can obtain State government licencing and national accreditation (enabling access to public subsidy) despite offering minimal support for breastfeeding. Mothers' reports illustrated their experiences of practical barriers to maintaining breastfeeding (including discrimination against breastfeeding mothers) in some childcare services.

A strength of this study is its population based sample, which is broadly representative of the States in which it is conducted and has adequate representation of most service types except for IHC. Also, our surveys collected both qualitative and quantitative data, from childcare services and from mothers using those services, which allows us to compare breastfeeding accommodations and support reported by

childcare services with the experience of mothers. Questionnaire design including identification of the support domains and various types of breastfeeding support was informed by partnership with a volunteer organisation which is Australia's leading source of practical information and support on breastfeeding and responds to over 90,000 calls a year from breastfeeding mothers including on discrimination issues (The Allen Consulting Group 2012). This expertise and knowledge was particularly important for this study, because many discrimination issues are not publicly reported, and are not lodged as complaints with official agencies because of the sensitivities involved for women who may have few alternative options for childcare, and who must prioritise maintaining amicable relationships with those caring for their children even if breastfeeding support is not forthcoming.

Study limitations

Our findings need to be considered in the context of the following limitations of the study.

Firstly, although the response rate for the childcare service provider survey was adequate, with 178 (24 per cent) of those invited choosing to participate, not all Australian childcare services were included in our sampling frame. This may make our results less generalisable to Australia as a whole, if the excluded jurisdictions have different childcare licencing regimes, local breastfeeding practices, or other factors affecting breastfeeding in childcare services. The survey of childcare services also had some overrepresentation of less common types of childcare such as OC, and the smaller jurisdictions such as the ACT and SA, because of deliberate oversampling. Nevertheless, the sample of 178 services included 75 childcare services from NSW and 151 LDC services so that our findings may be considered broadly representative unless there are large differences between these jurisdictions or childcare types and other jurisdictions or childcare types on the key variables under investigation.

Secondly, despite purposive oversampling, small cell sizes in some analyses of childcare services data meant that some of the breastfeeding support measures or characteristics of childcare which were found here to be insignificant may in fact be associated with higher breastfeeding. That is, the sample size may be inadequate for investigating such weakly associated variables.

Our analyses also focussed mainly on data from childcare services and number of breastfeeding infants enrolled in childcare, because of the low participation in the mothers' survey, and the clustering of the 89 participants in a small number of services (55). These deficiencies in data obtained through the cluster design make it inappropriate to draw strong conclusions from comparing childcare services' responses with mothers' responses. Our findings on mothers' experiences of discrimination need to be replicated in larger studies using direct recruiting strategies in the wider population of mothers to ensure they accurately represent the discrimination experiences of breastfeeding mothers. Such a study has been recently been conducted but only preliminary results are currently available.

Thirdly, in interpreting our findings on breastfeeding prevalence, it is worth noting that childcare services may not have accurate knowledge of the breastfeeding status of enrolled children, and will underestimate breastfeeding prevalence among older infants and children who may not be observed to breastfeed or consume breastmilk whilst attending childcare.

Fourthly, there is the possibility of sampling bias. The invitation to childcare services to participate in the research conveyed the study purpose in broad terms. However, it is possible that directors of childcare services who were very unsupportive of breastfeeding chose not to participate in the survey. Likewise, our results may underestimate the effects of poor breastfeeding support because some women may not enrol their children in formal childcare at all if they perceive inadequate support for breastfeeding. Informal or parental care may be preferred by such women, and is indeed associated with higher rates of breastfeeding among employed mothers in Australia (Baxter, 2008).

A related complication in interpreting the results of this study is that women who are most committed to breastfeeding may concentrate in childcare services which offer better breastfeeding support. A high proportion of breastfeeding women attending a particular service, such as one located in an area of high socioeconomic status, may exert pressure which improves breastfeeding support practices, so that high breastfeeding prevalence at the childcare service may reflect its client population rather than high support levels, which may instead be a response to demand rather than reflecting their initiatives to facilitate breastfeeding. Conversely services in areas of socioeconomic disadvantage where breastfeeding is less prevalent may not perceive a demand for breastfeeding support and do not offer it, despite being very willing to provide it if requested. This may have complex implications for interpreting the relationship between the breastfeeding prevalence at a particular childcare service, and what a breastfeeding mother presenting at the service may experience in practice.

Finally, data collection from childcare services was through self-report, which may cause systematic positive (social desirability) bias by childcare service providers in response to questions such as the degree of support offered to breastfeeding mothers.

Sampling bias may also affect the mothers' survey. Although publicity material was designed to be neutral with regard to whether participants were currently breastfeeding or not, it is possible that the 89 respondents to the mothers' survey may over-represent women with either strongly positive or a strongly negative experience of breastfeeding in childcare; the direction of any such effect is not clear.

It would be useful to further explore the links between the support variables and breastfeeding prevalence to provide the best indicators of a 'breastfeeding friendly' service. This might allow development of valid indicators and scoring systems to relate breastfeeding prevalence to implementation of a 'breastfeeding friendly childcare' program, including to underpin incorporation of breastfeeding support into the national childcare quality improvement and accreditation system. Further analysis of the acceptability and feasibility of wider implementation of breastfeeding support measures in childcare services is also needed. A trial of a 'breastfeeding friendly childcare' package in a small number of childcare services is currently underway in the jurisdictions included in this study.

5. Conclusion

Preferences may be cited as reasons for low labour force participation of breastfeeding mothers or low breastfeeding among employed mothers. However, our findings suggest that discrimination and inconsistent levels of breastfeeding support by childcare

services are barriers to continued breastfeeding for women using childcare. That is, discrimination, not just different preferences about infant feeding versus employment, discourages labour force participation by women who also want to breastfeed, and reduces the option to breastfeed for employed women.

More than half of new mothers in Australia continue breastfeeding through 6 months, and many return to work in the second half of the first year. Hence lack of adequate support for breastfeeding in childcare could either unnecessarily discourage or delay maternal labour force participation, or shorten the duration of breastfeeding of an infant when a mother does return to employment. This makes childcare a potentially significant barrier to fully realising the potential economic efficiency and health benefits from better integration of women's paid and unpaid work lives.

The recent amendments to the *Sex Discrimination Act (1984)*, the introduction of the Paid Parental Leave (PPL) scheme, and nationwide efforts to improve childcare quality through the Quality Improvement and Accreditation System (QIAS) are important steps towards reconciling the competing labour force, gender equity and health policy objectives in this area.

'Breastfeeding friendly childcare' strategies might contribute to reconciling potential conflict between public health strategies aimed at protecting maternal/child health, and economic and social policies promoting female labour force participation.

Our study documents the many existing ways that some childcare services provide encouragement and support for breastfeeding, as well as illustrating how some childcare services could become more 'breastfeeding friendly'. It is evident from our data that some childcare services offer excellent encouragement and support for breastfeeding.

However, a major implication of our findings is that lack of support for breastfeeding in some childcare services disadvantages breastfeeding women. This may represent indirect or direct discrimination against breastfeeding women under the *Sex Discrimination Act* and related state legislation. Childcare services and mothers may benefit from easily accessible and nationally consistent information on Australian sex discrimination law and on what is considered to be reasonable accommodation of breastfeeding by childcare services. As breastfeeding affects children's as well as women's rights, this is an issue relevant to Australia's Children's Commissioners as well as to Commonwealth and State or Territory agencies responsible for sex discrimination and human rights legislation.

Our findings may also be relevant to regulatory authorities such as the Australian Children's Education and Care Quality Authority (ACECQA). ACECQA sets quality standards for accreditation of childcare services in Australia, which determines access to federal government subsidies for childcare. At present it is possible for childcare services to breach Australian anti-discrimination laws protecting breastfeeding, yet still gain ACECQA accreditation certifying satisfactory standards of care. An absence of systematic support for mothers to maintain exclusive or ongoing breastfeeding in childcare services, in accordance with health authority recommendations, indicates potential for very poor quality of care even in accredited, publicly funded services. This study supports the case for inserting specific 'breastfeeding friendly' principles and indicators in Australia's new childcare standards.

The responses of women responding to this study indicated that breastfeeding was not always supported in childcare, as many reported inadequate staff training or breastmilk handling procedures or lack of other breastfeeding support, or other forms of disadvantage because they were breastfeeding. This perception appears soundly based in some childcare services, based on childcare services' own reports of the support measures they offered. On the basis of this study, for example, existing practices which fail to effectively convey that breastfeeding is welcome and usual, of not providing referral to breastfeeding support for mothers of infants in the nursery, not allowing mothers to comfortably breastfeed their children at childcare or having staff with relevant qualifications or training in breastfeeding support and not providing access to quality information resources on breastfeeding or referring mothers to social support for breastfeeding of toddlers, are areas that should be addressed as a priority. Such discrimination or lack of accommodation of the needs of breastfeeding women creates a disadvantage which appears significantly associated with reduced breastfeeding prevalence in a childcare service.

Childcare service policies such as excluding the children of staff members should also be reviewed, and it needs to be recognised that not providing lactation breaks for breastfeeding staff is now a form of discrimination in childcare as much as in other workplaces. Anecdotal reports of childcare services fee structures which charge exclusively breastfeeding mothers for the cost of formula points to another area needing attention. Likewise, as full-time employment is linked in many studies to reduced breastfeeding rates, the practice of some childcare services of offering only full-time childcare places warrants scrutiny as to its reasonableness under anti-discrimination law.

More fundamentally, lack of appropriate accommodation of family responsibilities and breastfeeding in either workplaces or childcare contributes to gender inequality. Women are concentrated in part-time, low quality jobs because of the gendered distribution of work hours and because mothers continue to take primary responsibility for the care of young children (Charlesworth et al. 2011). Our study illustrates how gender inequality may be reinforced by lack of accommodation of breastfeeding in childcare, as women may reduce employment participation so they can breastfeed, or reduce breastfeeding because they are employed and needing childcare. Some services' lack of appropriate accommodation of breastfeeding mothers may be due to poor awareness of anti-discrimination law or failure of childcare accreditation standards to provide adequate guidance to childcare services on acceptable standards of care regarding breastfeeding support. However, Australian governments must systematically address such inadequacies to make it possible for Australian women to follow NHMRC health recommendations and ANBS policy goals on feeding their infants and young children.

As well as producing inequity, lack of accommodation of women's needs in public life results in lower national productivity growth, as a source of highly educated labour – in scarce supply – is being underutilised (Toohey *et al*. 2009). As NSW Human Rights Commissioner Elizabeth Broderick has pointed out, if national productivity growth is to be maintained, there is a need to recognise the different life cycles of men and women and apply that knowledge to develop good policy solutions and business practices;

> [In 2012], there is still a fundamental mismatch between unpaid caring work and workplace structures and cultures. If we continue to refuse to recognise that workplaces are part of the social context in which individuals make their decisions on work and family, we will struggle to achieve significant progress. Our seemingly 'private' decisions are in fact shaped by the public context in which they are made (Broderick 2012, p. 207).

Childcare services are part of the social context in which the aforementioned private work and family decisions are made. Lack of childcare services' support for breastfeeding reduces national productivity by reducing maternal work force participation. Mothers who would prefer to return to work after childbirth may extend their absence from work in order to continue breastfeeding, or use less satisfactory but more accommodative childcare arrangements such as informal rather than formal childcare. Lack of breastfeeding accommodation and support is also an obstacle to improved gender equality, by creating disadvantage, physical discomfort or even distress for lactating women participating in community life.

Discrimination against breastfeeding mothers (and their children) also undermines the efficiency of production of human capital, because of the implications for child health and development and later life chronic disease burdens if infants and young children unnecessarily reduce breastfeeding when their mothers use childcare. Reduced breastfeeding among children in childcare may also increase employer costs and lower workplace productivity, due to higher absenteeism by parents whose infants experience more illness attributable to premature weaning from breastfeeding (Cohen *et al*. 1995).

Helping mothers balance goals of work and family including through more breastfeeding friendly childcare services thus has important economic efficiency implications as well as affecting gender equity and maternal and child health. Governments have implemented a number of policies to improve the quality and availability of childcare, and to address issues of discrimination affecting maternal workforce participation. This paper shows that some childcare services' practices on breastfeeding may diminish the economic and social benefits of these public policies, as does discrimination against breastfeeding mothers which is now also unlawful.

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