INTRODUCTION

Breastfeeding is associated with a significant decrease in morbidity and mortality both in the infant and in the mother. For the mother, breastfeeding is associated with a significant reduction in the risk of breast cancer (Layde et al., 1989) and ovarian cancer (Gwinn et al., 1990). For the infant, breastfeeding is associated with a reduction in infectious illness (Cunningham et al., 1991), allergic manifestations in infants at risk (Saarinen and Kajosarri, 1995), diabetes (Mayer et al., 1988), Crohn's disease (Rigas et al., 1993), coeliac disease (Challacombe et al., 1997) and ulcerative colitis (Koletzko et al., 1991), and may encourage mother–child attachment and...
bonding (Fergusson and Woodward, 1999). Hence, the protection, support and promotion of breastfeeding is paramount to the health of the infant and mother.

While the initiation of breastfeeding in Australia is very high by world standards, with 81.8% of babies leaving hospital breastfeeding, the breastfeeding rate falls significantly in the first few weeks, with only 46.2% of babies still being fully or partially breastfed at 6 months (Donarth and Amir, 2000).

One of the reasons for this large drop in breastfeeding in the first 6 months is related to the return to paid work of mothers following their maternity leave. With ~27% of women returning to work in the first 12 months of their baby’s life, finding ways to combine breastfeeding and paid work is likely to be an issue for many of these women (Work and Family Unit, 1998). Breastfeeding beyond 12 months is also at risk, given that 49% of women with children aged <5 years are part of the paid workforce [Australian Bureau of Statistics (ABS), 1997a].

In a random survey of >3400 adults living in a low socio-economic area in South Australia, 62% agreed that a mother would need to bottle feed (i.e. use infant formula) when she returns to work (McIntyre et al., 2001). This community attitude to combining breastfeeding and work suggests a lack of knowledge on how the two (breastfeeding and work) can be combined, and how the community can support mothers who wish to combine breastfeeding and work.

In other studies, combining breastfeeding with paid work was usually not considered possible or at best was seen as difficult to do by women (Kurinij et al., 1989; Gielen et al., 1991; Bagwell et al., 1992; Gorman et al., 1995; Nolan and Goel, 1995). While some studies showed that employment did not affect the initiation of breastfeeding, it may decrease the duration of lactation (Littman et al., 1994; Tuttle and Dewey, 1994; Miller et al., 1996; Earland et al., 1997; Visness and Kennedy, 1997). A more recent study found that full-time work decreased both initiation and duration of breastfeeding, while part-time work had no effect on either (Fein and Roe, 1998). More specifically, planning to return to work within the first 6 weeks postpartum reduces the likelihood of initiating breastfeeding (Noble et al., 2001). Separation of mother from baby was associated with a decrease in the duration of breastfeeding, as seen in studies looking at employment outside the home (Gielen et al., 1991; O’Campo et al., 1992), and the use of daycare facilities (Weile et al., 1990). On the other hand, Piper found that delaying the initial return to work resulted in women breastfeeding for longer (Piper, 1996).

This paper describes a strategy that aimed to both develop materials on combining breastfeeding and paid employment, and to distribute and promote these materials to workplaces, employers and women. The objectives of this project were as follows.

(1) To inform employers and workplaces of: (i) the benefits of supporting female employees who wish to continue breastfeeding their babies on returning to paid employment; and (ii) the various workplace practices that support the continuation of breastfeeding among female employees.

(2) To inform women from a variety of socio-economic and cultural backgrounds that: (i) they can continue to breastfeed on returning to paid employment from maternity leave; (ii) there are benefits to themselves and to their babies in continuing to breastfeed on return to paid employment after maternity leave; and (iii) there are steps they can take to maximize their success at combining breastfeeding and paid employment.

(3) To distribute materials containing the above information to workplaces around Australia where women of childbearing age are likely to be employed.

METHODS

Development of the information kit

Information provided in the kit was derived from information booklets and leaflets that had already been written on issues relevant to balancing breastfeeding and work by organizations such as the Nursing Mothers’ Association of Australia [NMAA, recently renamed to the Australian Breastfeeding Association (ABA)], the World Alliance for Breastfeeding Action (WABA) and the Australian Council of Trade Unions (ACTU). Information was also derived by reading case studies published in NMAA newsletters, by holding discussions with women who had balanced breastfeeding and work, and from a literature review of relevant articles identified from electronic databases (Medline, CINAHL).
Consideration was also given to the presentation of this information to ensure its acceptability by the target groups as well as its durability as a re-usable resource. It was decided that the kit would comprise a poster to display key points and a booklet to provide more detailed information, set out in an easy to read manner.

The original version of the poster and booklet was tested in several ways—using focus groups with working women, focus groups with human resource managers, and interviews with interested individuals who were unable to attend the focus groups. Further testing was also conducted with other key stakeholders (policy officers, public health academic, nutritionists, health promotion officers) via the use of a response form on a website. In addition, the advisory team to the project included a working mother who was breastfeeding and an NMAA Breastfeeding Counsellor, while the project manager herself was also a lactation consultant.

Distribution strategies

Distribution of this kit was achieved through identifying and using current employer networks. Budget constraints prevented the printing of sufficient kits for every workplace in Australia. Thus, the strategies outlined were implemented so businesses that employed women of childbearing age were targeted. These strategies included the following.

- Industry sectors with the highest proportion of females in their workforce were the main focus: the retail trade (16.9% of females in the workforce), health and community services (18.1%), property and business services (10.6%), education sectors (12.4%) and manufacturing (8.0%), giving a total of 66% of females in the workforce (ABS, 1997b). At the same time it was acknowledged that other industry sectors should not be ignored entirely. In addition, the size of the industry sector also needed consideration. In the top four industry sectors, the retail industry employs 14.3% of all employed people, manufacturing 14.8%, property and business services 10.4%, and health and community services 10.3%. Thus, focusing on industries in these sectors ensured more women of childbearing age were likely to have access to the information.

- It was also decided to distribute the kit to human resource managers, CEOs and union representatives in these industry sectors, since these people were most likely to be concerned with work policies, practices and employment conditions.

- Media promotion of the project by the project manager generated requests for the information kit from interested people (employees, employers and union representatives).

- Using the internet, searches were conducted for businesses, and employer and employee organizations in these key industry sectors. Where they were available, national contact addresses (or state or local addresses where a national address was not available) were included on the database as they were identified. Contact was made via email/fax/phone/letter to these organizations requesting their help in the distribution of the kit, e.g. by providing labels or a mailing list, or by distributing multiple copies of the kit through their internal distribution system.

- Other organizations agreed to include an article about the project in their newsletter/journal so that their members could request a copy of the kit if they were interested.

- When an organization was approached, it was asked if it was interested in this project and if so, how many kits it would require for distribution to employers/workplaces in their organization. As a consequence, some organizations did not request as many as others. However, we believe this system (compared with sending the same number to each organization) is more likely to ensure that the kits sent will be used. In addition, some organizations, while they only requested one kit, were likely to have a substantial influence on female employees in many workplaces.

- The cost of mailing the kits was minimized by ensuring the kit was below a certain weight, was of a standard size and was enclosed in an appropriately labelled envelope in accordance with the mailing contractor. In addition, the team involved in collating and addressing the envelopes ensured the addresses were sorted according to the mailing contractor’s specifications, thus reducing the mailing costs further.

- It was planned that all material would be placed on the Australian National Breastfeeding Strategy website (http://www.health.gov.au/pubhlth/strateg/brfeed/), so that even if people did not have a physical copy of the kit they could still access the information.
**Project promotion**

Promotion of the project included sending news releases to the mass media and articles to relevant professional organizations, women’s and parents’ magazines, and business journals. In addition, the project manager negotiated to present aspects of the project at various conferences and seminars.

**Evaluation of the project**

Evaluation of the project focused primarily on process and was kept as brief as possible to ensure it would not take respondents too long to complete. The time frame of this project did not allow sufficient time to evaluate the implementation of the strategies proposed in the kit.

The evaluation process used available email addresses and fax numbers from the database. Responses were requested via return email, return fax, or accessing and responding to a website form.

**Timeline**

Development and testing of the information kit took ~10 months. Packaging and distribution of the kit took ~6 weeks, although the database for distribution took several months to set up; this was set up at the same time the information kit was being developed, however. Promotion of the project and the information kit commenced at the beginning of the project and continued throughout the 14 months of the project.

Evaluation of the project (taking ~4 weeks) commenced ~1 month after the information kit had been distributed, in line with the project time frame.

**RESULTS**

**Design and content of the information kit**

The information kit consisted of an A4 poster, a resource booklet (32 pages) and statements of endorsement. Both the poster and booklet cover were laminated to enhance their presentation and durability. Endorsements from relevant organizations—NMAA, ACTU and the Australian Chamber of Commerce and Industry (ACCI)—were included as a separate letter in the kit to further encourage the reader to utilize the kit.

‘Balancing breastfeeding and work’ was selected for the project title and was used on both the poster and booklet. The poster contained pertinent information for employers on the back of the coloured graphic. The resource booklet contained information for both employers and employees/mothers. It was arranged in two sections and included resources for further information.

A summary of the material for mothers was translated into five languages (six including English) and printed as trifold fliers on different coloured paper (Arabic, yellow; Chinese, pink; Spanish, green; Turkish, buff; Vietnamese, blue; English, white). Two thousand copies of each non-English version and 6000 copies of the English version were printed and distributed via Working Women’s Centres and Migrant Resource Centres throughout Australia.

**Distribution**

Table 1 shows how the kits were distributed according to various industries in Australia.

Table 2 shows the distribution of kits according to states and territories, and the percentage population in each state and territory. A limitation to this data is that for some organizations, multiple copies of the kit were sent to their address in a particular state, but the kits were then distributed throughout Australia by the organization.

**Table 1:** Distribution of kits according to the type of industry as categorized by ABS (1997b)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of kits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing, meat industries</td>
<td>12</td>
</tr>
<tr>
<td>Communication services</td>
<td>246</td>
</tr>
<tr>
<td>Construction</td>
<td>3</td>
</tr>
<tr>
<td>Cultural and recreational services</td>
<td>55</td>
</tr>
<tr>
<td>Education</td>
<td>10 140</td>
</tr>
<tr>
<td>Electricity, gas and water supply</td>
<td>16</td>
</tr>
<tr>
<td>Finance and insurance</td>
<td>2150</td>
</tr>
<tr>
<td>Government administration and defence</td>
<td>15 026</td>
</tr>
<tr>
<td>Health and community services</td>
<td>7 444</td>
</tr>
<tr>
<td>Accommodation, cafés and restaurants</td>
<td>1 648</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>22 48</td>
</tr>
<tr>
<td>Mining</td>
<td>1</td>
</tr>
<tr>
<td>Unions covering mixed industries</td>
<td>1 594</td>
</tr>
<tr>
<td>Personal and other services</td>
<td>562</td>
</tr>
<tr>
<td>Property and business services</td>
<td>6 980</td>
</tr>
<tr>
<td>Retail trade</td>
<td>2 418</td>
</tr>
<tr>
<td>Transport and storage</td>
<td>73</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>1</td>
</tr>
<tr>
<td>Insufficient information provided for coding</td>
<td>280</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50 895</strong></td>
</tr>
</tbody>
</table>
Hence, it is not possible to state exactly how many kits ended up in workplaces within each state.

**Promotion of the project**

Media releases, distributed at the commencement of the project as well as at the launch of the information kit, resulted in a high level of media interest. The project was featured in 17 radio interviews and news items around the country. There were also 20 newspaper articles. In addition, the project was mentioned in 18 newsletters and professional journals, and three magazines.

One media article was posted on the electronic discussion list set up by the Work and Family Unit in the Commonwealth Department of Employment, Workplace Relations and Small Business (DEWRSB). This was followed by a request for suggestions for distribution contacts, resulting in many emails with suggestions and requests for the kit. Information about the project was also posted on international and national electronic discussion lists for health professionals working in this area.

Aspects of the project were presented by the project manager at three conferences and one seminar. A workshop using this kit as the basis for discussion was conducted at the joint UTLC (United Trades and Labour Council) and SAECCI (South Australian Employers’ Chamber of Commerce and Industry) Occupational Health and Safety Conference ‘Working Together’ at the Adelaide Convention Centre in April 2000. A paper was presented outlining the development and distribution process of the project material at the Commonwealth Department of Finance and Administration ‘Breastfeeding and Work’ Conference in August 2000, at the ALCA (Australian Lactation Consultants Association) national conference in October 2000 in Melbourne, and at a SACLC (South Australian College of Lactation Consultants) seminar in August 2000.

**Evaluation of the project**

Evaluation of the project focused primarily on process. The time frame of this project did not allow sufficient time to evaluate the implementation of the strategies proposed in the kit.

The evaluation used available email addresses and fax numbers from the database. Responses were given via return email, return fax, or by accessing and responding to a website. The evaluation survey was emailed to 808 addresses, and faxed to 1360 fax numbers. There were 174 undeliverable email addresses and 423 invalid fax numbers, giving a total of 1571 valid contacts. The response rate was 12.8%, with 202 evaluation forms returned.

In summary:

- Most (76%) responses were from medium to large organizations.
- Responses came predominantly from management, CEOs, HR managers and administration (67%).
- Respondents to the evaluation were most likely from government departments in administration, defence, health and community services (70%).
- Most (68%) of the workplaces employed <50% of women of childbearing age.
- Most (76%) rated the kit as excellent or very good, i.e. 5 (30%) or 4 (40%) on a scale of 1–5. Over one-third (34%) had displayed the poster while a further 26% intended to display the poster. Posters were most likely displayed in the canteen/staffroom.
- Over one-half (55%) anticipated the kit would be useful in their organization.
- Most (70%) agreed that the kit provided sufficient information to support balancing breastfeeding and work in their organization.
- Most (68%) agreed that the kit provided suitable solutions to support balancing breastfeeding and work in their organization.

The comments below are a selection of those received to reflect the kit’s reception. The overall response was quite favourable. The kit was seen to be a valuable resource to both assist in the

### Table 2: Population and distribution of kits to Australian states and territories

<table>
<thead>
<tr>
<th>State</th>
<th>Percentage of population&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Percentage (n) of kits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Capital Territory</td>
<td>2</td>
<td>17 (8750)</td>
</tr>
<tr>
<td>New South Wales</td>
<td>34</td>
<td>24 (12 023)</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>1</td>
<td>1 (580)</td>
</tr>
<tr>
<td>Queensland</td>
<td>18</td>
<td>16 (8194)</td>
</tr>
<tr>
<td>South Australia</td>
<td>8</td>
<td>12 (5980)</td>
</tr>
<tr>
<td>Tasmania</td>
<td>2</td>
<td>2 (1241)</td>
</tr>
<tr>
<td>Victoria</td>
<td>25</td>
<td>17 (8456)</td>
</tr>
<tr>
<td>Western Australia</td>
<td>10</td>
<td>11 (5671)</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100 (50 895)</td>
</tr>
</tbody>
</table>

<sup>a</sup>(ABS, 1997a).
development of policy as well as to raise awareness of the issues surrounding balancing breastfeeding and work.

I believe the kit will provide invaluable assistance when devolving our corporate policy on work and breastfeeding. We anticipate distributing the kit to each of our Districts for their use.

Excellent—great to see a breastfeeding campaign raising awareness for all in the workplace and assisting working mother’s/improving self esteem whilst breastfeeding.

The kit is an excellent resource for our members. We are a female dominated union (nurses) and consider this to be invaluable for those women in this age group.

I thought the kit was extremely informative and very useful for my role in implementing family friendly work practices and a supportive work culture.

However, there were also some concerns about the position of workplace promotion of breastfeeding and whether it was even possible to combine the two.

Parts of section two are more concerned with promoting breastfeeding per se, than with balancing breastfeeding with work demands. This is a very personal choice; one that the organization would not want to be perceived as trying to influence. We would therefore need to consider carefully whether we would assemble our own kit or use this one with some form of disclaimer.

Very nice thought but totally impractical in a business that is struggling for survival in today’s manufacturing environment.

The kit was informative and well presented. However, we do not wish to publicise the kit to staff for now as some of the suggestions are not consistent with current personnel policies and we do not wish to unduly raise staff expectations.

**DISCUSSION**

This project promoted balancing breastfeeding and work by producing materials (as a kit) for employers and the workplace as well as for breastfeeding mothers. A major component of the project was the distribution of kits to workplaces around Australia. This distribution strategy is one of the project’s strengths in that the project was not just concerned with developing a kit but also with establishing ways of disseminating this to the appropriate organizations and people. As well as disseminating the kit, the exposure of the project to the general community through the mass media (print and audio) has enhanced the awareness of the issue of balancing breastfeeding and work.

Nevertheless, there are several limitations to this project. Since the distribution of the kits comprised a multi-strategy approach, it was realized that in some cases, more than one copy was sent to a workplace, e.g. the kit may have been sent to the CEO and the union representative at the same workplace. This may not necessarily be a waste of resources since both parties would then be aware of the kit when it comes to enterprise bargaining or other workplace agreements. However, this did mean that as a consequence some workplaces did not receive a kit at all.

Restricting the allocation of kits to medium to large sized businesses (i.e. those businesses with ≥20 employees) has meant that small businesses (comprising >40% of the workforce) did not receive a kit. However, it is hoped that the extensive promotion of the project has addressed this limitation to some extent. In addition, placing all the material on a webpage enables this information to be available to all employers and employees, provided they have access to the internet.

The timing of the evaluation, which was implemented almost immediately after the distribution of the kit, has meant that the evaluation could only focus on process and was unable to address outcomes or impact. This is a problematic feature of short-term projects, i.e. evaluation is required to be conducted within a restrictive time frame and results of the evaluation need to be included in the final report.

While the project developed and disseminated material to workplaces, it remains to be seen how this information will be used. Feedback during the evaluation process indicates that the material is useful and some workplaces have started to incorporate the material into their policies. Cohen and Mrtek showed that where a lactation programme (worksite breast pump room plus breastfeeding counselling) had been implemented, the breastfeeding rates at 6 months were equivalent to the rates for mothers who were not employed outside the home (Cohen and Mrtek, 1994). Compared with a group of
42 formula-feeding employed mothers and their babies, fewer and less severe infant illnesses and less maternal absenteeism were found in a comparable group of 59 breastmilk feeding employed mothers and their babies (Cohen et al., 1995).

This project may have had a greater impact if there had been the opportunity to develop, implement and evaluate strategies to assist employers and workplaces to incorporate this material into their workplace practices. It needs to be acknowledged that issues surrounding breastfeeding and work cannot be resolved entirely by merely providing information on the how and why of combining the two. There needs to be a willingness by all concerned (employers, employees and the workplace environment) to make balancing breastfeeding and work a reality. Projects such as this are most likely to be successful if the workforce is actively involved in the planning and implementation process (Springett and Dugdill, 1995). While this project involved employers and employees in the development and distribution of the materials, there was no opportunity for implementation, although from comments during the evaluation stage this was happening in some workplaces.

In conclusion, while this project has successfully achieved its aims and objectives, there is much that still needs to be done before breastfeeding mothers who are returning to work can continue to breastfeed as long as they and their baby require it.

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Address for correspondence:
Ellen McIntyre
Primary Health Care Research and Information Service
Department of General Practice
Flinders University
Bedford Park
SA 5042
Australia
E-mail: ellen.mcintyre@flinders.edu.au

REFERENCES


