

Archived at the Flinders Academic Commons:

<http://dspace.flinders.edu.au/dspace/>

This is the publisher's copyrighted version of this article.

Details can be found at: <http://www.healthpromotion.org.au/journal>

© 2004 Health Promotion Journal of Australia

Published version of the paper reproduced here in accordance with the copyright policy of the publisher. Personal use of this material is permitted. However, permission to reprint/republish this material for advertising or promotional purposes or for creating new collective works for resale or redistribution to servers or lists, or to reuse any copyrighted component of this work in other works must be obtained from the Health Promotion Journal of Australia.

Breastfeeding and health promotion: the experience of Aboriginal and non-Aboriginal mothers

Dawn Gilchrist, Beth Woods, Colin W. Binns, Michael Gracey, Jane Scott and Hannah Smith (nee Herod)

Introduction

Breastfeeding is the best way to feed all infants. The National Health and Medical Research Council (NHMRC) has endorsed exclusive breastfeeding for around six months before other foods are introduced.¹ After six months breastfeeding can continue with suitable complementary foods for as long as the mother and infant desire. Breastfeeding is a national nutrition priority in Australia, including for the Aboriginal population.² Exclusive breastfeeding is associated with benefits for the mother and the baby. For the infant, benefits include reduced rates of infectious disease and infant mortality and reduced rates of diabetes and asthma in adulthood.³ Breastfeeding provides the most appropriate physical rates of growth⁴ and maximises cognitive development.^{5,6}

Until the beginning of the 20th century all infants who were to survive were breastfed.⁷ The rates declined after World War Two, but then began to increase again in the 1970s.^{7,8}

In traditional societies, breastfeeding was universal for Aboriginal women, but has declined somewhat in recent years. Based on a number of studies in Western Australia (WA), Gracey and

colleagues reported that breastfeeding rates declined in groups who lived closer to urban areas.⁹ A study of Aboriginal mothers was undertaken in Perth in the early 1980s and, while the sample size was relatively small (n=127), this showed a trend towards reduced rates of breastfeeding by urban Aborigines.¹⁰ After delivery, 82% of Aboriginal mothers initiated breastfeeding, however by three months this had declined to 50% and after one year only 20% of these mothers were still breastfeeding.¹⁰

A national survey of the Aboriginal population in 1994 included information on breastfeeding as part of a larger study of health and social factors.¹¹ The collection of breastfeeding information by a questionnaire that asks mothers to remember events several years previously makes this study difficult to compare with cohort studies where the data are collected contemporaneously. In this study, 71% of children aged 12 years and under had been breastfed as infants and of these, 27% were breastfed for 12 months or longer. Breastfeeding was more prevalent in non-urban Aborigines where 80% of children were breastfed. Further analysis of this data showed that the 'ever breastfed' rates of Aboriginal children ranged from 53.6% in Victoria to more than

Abstract

Issue addressed: To compare the sources of information about breastfeeding given to Aboriginal and non-Aboriginal mothers in Australia.

Methods: Cohort studies were undertaken on two groups of mothers who gave birth in the Perth metropolitan area; the Perth Infant Feeding Study and the Perth Aboriginal Breastfeeding Study. Similar questions were asked of 556 non-Aboriginal and 425 Aboriginal mothers.

Results: Aboriginal mothers were more likely (88%) to be given a pamphlet about breastfeeding than non-Aboriginal mothers (56%). On the other hand, they were far less likely to receive any other form of education about breastfeeding. Aboriginal mothers were less likely to have discussed potential infant feeding methods with the baby's father prior to delivery.

Conclusions: Aboriginal mothers are less likely to participate in health promotion activities about breastfeeding.

Keywords: Aboriginal women, antenatal education, health promotion, breastfeeding.

Health Promotion Journal of Australia 2004;15:226-30

So what?

There is a need to improve and increase antenatal breastfeeding information for Aboriginal Australian mothers. The young age at which many Aboriginal mothers give birth suggests that health promotion for motherhood could usefully be given to senior high school students.

80% in the Northern Territory.¹² Rates in urban areas were lower than for rural locations.

Breastfeeding rates for all Australians have been reviewed by Scott et al.¹³ and Binns et al.¹ and the rates from the cross-sectional National Health Survey have been reported by Donath.¹⁴ Breastfeeding initiation rates reported in these reviews and studies are similar for Aboriginal and other Australian mothers and are reviewed in detail elsewhere.¹⁵

It is a recommendation of the revised NHMRC Infant Feeding Guidelines that all parents-to-be receive information about the benefits of breastfeeding.¹ The National Breastfeeding Strategy¹⁶ emphasises the importance of family education for breastfeeding using a number of educational strategies and media. The aim of this study was to document the health promotion materials and activities that were accessed by Aboriginal mothers who gave birth in Perth hospitals during the study period. Data from the Perth Aboriginal Breastfeeding Study (PABS) were analysed to assess the mothers' exposure to education materials related to breastfeeding and these results were then compared with results from the Perth Infant Feeding Study (PIFS).

Methodology

Mothers who gave birth at two suburban public hospitals were recruited for the PIFS conducted in 1992/93. Details of the sample and methodology have been previously published.^{17,18} A cohort of 556 Perth women completed a baseline questionnaire while in hospital and subsequently were followed-up by telephone interview at 2, 6, 10, 14, 18 and 24 weeks postpartum, or until they ceased to breastfeed. The sample was consecutive and unselected. The questionnaire used requested demographic details, health and breastfeeding history, breastfeeding information sources and details of infant feeding intentions.¹⁹

The PABS used methodology very similar to the PIFS and was conducted in 2000-02. All persons who enter hospitals in WA are asked if they identify themselves as Aboriginal. All self-identified Aboriginal mothers who gave birth in six Perth hospitals during the survey were contacted and invited to participate in the study. The two hospitals included in the PIFS were also included in the PABS. A total of 455 mothers gave birth during the period and 425 mothers completed the initial interview.

The original PIFS baseline questionnaire was designed to identify feeding method while in hospital and to collect information on variables known, or suspected, to be associated with breastfeeding initiation and duration, and details of breastfeeding information and promotion. Steps were taken to ensure that the questionnaire was easy to read and comprehend. The draft questionnaire was reviewed and modified by two adult literacy experts and then pilot-tested on a group of 20 new mothers. The staff of the Derbal Yerrigan Health Service also assisted in

reviewing the language used in the questionnaire. Wherever possible the wording of the PABS questionnaires was kept as close as possible to the PIFS to allow for later comparisons.^{18,20} The wording of the questions related to health promotion and the prompted responses available were the same for both studies. The project research officer, who had extensive experience in epidemiological research in Aboriginal communities, administered the questionnaire orally. The data were coded, cleaned and analysed using SPSS in an identical way to the PIFS data.^{19,20} One limitation of this study is the time difference between the two studies of approximately eight years.

In both studies approval was received from the Curtin Human Ethics Research Committee and the ethics committees of all of the hospitals from which the participants were recruited.

Results

The demographic characteristics of the sample are shown in Table 1. The average age for the PIFS participants was 27.6 (SD 5.4) years compared with 21.8 (SD 5.3) years for the PABS. The youngest Aboriginal mother in the study was 14 years, while the youngest non-Aboriginal mother was 16 years. There were 12 women who identified themselves as Aboriginal and three

Table 1: Demographic characteristics of the PIFS and PABS.

Characteristic	PIFS % (n=556)	PABS % (n=425)
Highest level of education completed		
Before year 10 high school	14.0	40.5
Junior/year 10 did not complete year 10	38.5	44.5
TEE/year 12 final year high school	17.4	5.9
Trade/diploma/TAFE e.g. plumber, secretary	20.9	5.6
Bachelor degree or higher	6.3	2.4
Not stated	2.9	1.2
Marital status		
Never married	6.4	11.8
Now married	70.8	4.5
De facto	21.4	82.6
Divorced or separated	1.4	0.5
Not stated	1.0	0.7
Partner's occupation		
Professional/admin/paraprofessional	17.8	0.0
Sales/clerical/trades/labourers	64.4	1.9
Self-employed	3.8	0.0
CEPD ^a	0.0	7.8
Unemployed	3.4	74.1
Other ^b	1.4	12.2
Not stated	9.2	4.0
Parity		
1	31.8	74.8
2	37.1	8.7
3	18.3	6.4
4	9.4	4.5
5	2.2	1.7
6+	1.3	3.9

(a) CEPD Community employment programs.

(b) Includes students and invalid pensioners.

Table 2: Proportion of women who received a pamphlet or participated in any of the following activities on breastfeeding during their pregnancy.

	PABS (n=425)	PIFS (n=556)
Pamphlet	83.1 ^b	55.7 ^b
Lectures	0.0	26.7
Demonstrations	0.2 ^b	19.5 ^b
Individual consultation ^a	1.2 ^b	50.5 ^b
Video	0	41.8

(a) 'Individual consultation' means breastfeeding was discussed during a consultation with a health professional.
(b) $p < 0.01$.

as Torres Straits Islanders in PIFS. These numbers were too small for any separate breastfeeding analysis.

There are major differences between the two groups in education level, marital status, partner's occupation and parity. The PIFS was biased towards a lower socio-economic sample by the choice of the hospitals, but even so the differences between the PIFS and the PABS highlighted the economic deprivation of the Aboriginal participants.

Each mother was asked whether they had received information about infant feeding and/or participated in any antenatal classes that included specific information on infant feeding. The details are shown in Tables 2 and 3. In the PIFS study there was no difference in the type of activities participated in according to country of birth. In both the PIFS and PABS the level of educational attainment was not significant.

Very few of the participants in the PABS participated in any health promotion activities related to breastfeeding. When conventional health education methods are considered, Aboriginal mothers were more likely ($p < 0.01$) to be given pamphlets about breastfeeding and far less likely to participate in other forms of breastfeeding promotion. The PIFS and the PABS data were examined for the influence of education level and for PIFS the country of birth was also studied, but no significant differences in the types of health promotion received was found. To check the validity of these figures, data for the

Table 3: Proportion of women who had ever attended antenatal classes on infant feeding.

	PABS (n=425)	PIFS (n=556)
Yes, this pregnancy	3.3 ^a	22.4 ^a
Yes, previous pregnancy	1.7 ^a	35.6 ^a
Yes, this and previous	0.7 ^a	5.5 ^a
No	94.3 ^a	36.4 ^a

(a) $p < 0.01$.

Table 4: Reasons for and attitudes to breastfeeding (percentage of mothers agreeing with each statement).

Statement	PABS (%)	PIFS (%)
Breastfeeding helps prevent allergies	58.1	41.7
Breastmilk is better for the baby	87.4	78.1
Breastfeeding is cheaper	79.3	49.8
Breastfeeding is more convenient	70.7	61.9
Breastfeeding is fashionable	30.2	0.7
Breastfed babies are more intelligent	18.8	4.1
Breastfeeding more often increases milk supply	39.8	64.4
Babies naturally know how to breastfeed correctly	21.8	26.1
Formula-fed babies sleep longer at night	3.2	17.4

Aboriginal mothers who participated in the PIFS, a total of 15 mothers (approximately 3% of the total PIFS sample), were re-examined. In this group 11 mothers were given breastfeeding pamphlets, while only one attended a lecture and three attended a demonstration. While these numbers are very small, they do confirm the trend evident in the PABS.

Breastfeeding mothers in each survey were asked the question 'Why did you decide to breastfeed?' They were then shown a list of possible reasons for breastfeeding and were asked to choose the items related to them. There was also a space for open-ended responses. The results of the items included in the question are presented in Table 4. Generally the responses of the PABS mothers reflected a greater knowledge of the benefits of breastfeeding.

Discussion

The time a mother makes her infant feeding choice has been reported to influence breastfeeding initiation and duration.^{17,20,21} Women who make their infant feeding choice before becoming pregnant are more likely to initiate breastfeeding and to breastfeed for longer than women who make their choice once they have become pregnant.^{17,20,21} This demonstrates the importance of health promotion about the benefits of breastfeeding either prior to pregnancy or as early as possible during a pregnancy. While this and other studies²² have shown that antenatal classes are well attended by non-Aboriginal mothers, in particular primiparous mothers, this is not the case for Aboriginal women in Perth. The Aboriginal mothers reported receiving antenatal education about breastfeeding only rarely and usually did not attend formal antenatal education classes. On the other hand, in excess of 80% reported receiving an educational pamphlet on breastfeeding, probably the least effective form of health promotion for a low-literacy group. In this study the rates of breastfeeding by Aboriginal mothers were higher than the

comparison group (PIFS) despite the differences in exposure to health promotion activities. The NHMRC report on Nutrition in Aboriginal Communities emphasised the importance of breastfeeding and appropriate health promotion activities to maintain and improve breastfeeding rates.¹²

In other comparable countries the breastfeeding rates of Indigenous populations have declined or remained static while non-Indigenous breastfeeding rates have increased.^{23,24} For example, in New Zealand Māori mothers' full breastfeeding rates at three months are 41% compared with 56% of European mothers.²⁴ The information is not available in Australia to show if such a trend is evident here. However, given the overseas experience and the lower rates of breastfeeding in Australia in lower socio-economic groups,^{13,14} there is certainly the potential for a decline in Australian Aboriginal breastfeeding rates, particularly for urban mothers. This justifies concern about the need for health promotion activities about breastfeeding in this population to forestall any potential decline and to increase rates to the proposed national targets.

In this study, the Aboriginal mothers scored higher on their knowledge of the benefits of breastfeeding (see Table 4). This may reflect informal health promotion because of the larger size of Aboriginal families. However, this may not be the case in the future as the total fertility rates for Indigenous mothers has fallen from about 5.8 babies per woman in the 1960s to 2.1 babies per woman in 1999.^{25,26}

Thompson and Gifford have emphasised how important it is to base health promotion in a cultural context.²⁷ They describe how an ethnographic approach was used to contextualise the behavioural risk factors for non-insulin dependent diabetes (NIDDM) and the development of a more meaningful and appropriate epidemiological risk factor survey instrument for Aborigines living in Melbourne, Victoria. "Contextualising behavioural risk factors within their wider social meanings provides public health with the important answers to the question 'why'? For example, family food is food that brings Aboriginal families together both symbolically and physically, and sport and everyday activity reinforce a sense of connectedness between the individual and the wider social community. For Melbourne Aborigines, health is ultimately about keeping a sense of balance and reinforcing the precarious ties that connect the individual to his or her family and community."

Examples of culturally appropriate health promotion activities have been gathered by the NHMRC.²⁸ The anthology included information on nine successful health promotion programs in Aboriginal communities. One project, the 'Nga Gundi - The Mother/Child Project', included breastfeeding as a priority.

The review was summarised: "These projects provide new hope for improved health in the future. There is pride in their

achievements and a keen sense of identity being nurtured among the younger generation. There is growing respect between Aboriginal and non-Aboriginal team mates for their assistance, dedication and energy and a sense of purpose felt by all. In addition, there is a boost in everyone's self-esteem, with ultimately better health outcomes for all."²⁸

Another example of a culturally relevant health promotion program is the Strong Woman Strong Babies Strong Culture Program in the Northern Territory.²⁹ While the program's impact on breastfeeding rates has not yet been reported, published results of this program show a decrease in the number of low birth weight infants following appropriate antenatal care.

It is evident from our study that there is still a way to go in ensuring that all Aboriginal women have access to culturally appropriate breastfeeding promotion programs. The delivery of these programs is made more difficult by frequent changes in address. The Aboriginal mothers usually gave the hospital a local Perth address, but when we visited them after delivery we sometimes found that they had returned to a rural location. Thus it is easy to understand how routine antenatal activities and breastfeeding information could 'fall through the cracks'. All mothers need appropriate breastfeeding education and promotion regardless of which area of the State they are living in during the antenatal period. In the 1960s, breastfeeding rates in the Western world fell to low levels. In countries such as the USA, rates remain low³⁰ while in Australia initiation rates have increased. This highlights the vulnerability of breastfeeding in a modern society and the importance of maintaining health promotion efforts. For Aboriginal mothers it is important that these efforts are culturally appropriate and are undertaken through community based organisations that can maintain contact with a mobile society.

Another negative risk factor is the age of the mother at the time of the birth as it has been shown that older mothers are more likely to commence breastfeeding and to breastfeed for longer.^{20,21} However, one positive effect of the younger age of Aboriginal mothers is that they have more recently been in high school. Including breastfeeding information in the high school health education curriculum might be a way of ensuring that decisions on breastfeeding are made before pregnancy.

There are some limitations that apply to the PABS. Aboriginal mothers were all self identified. Mothers who chose not to identify themselves as Aboriginal would not be included. A further limitation that needs to be considered is the time difference between the PABS and the PIFS. The extent of changes in health promotion in that period of time is not known, but if the range of health promotion activities has increased as a result of the National Breastfeeding Strategy, the differences outlined in this paper will be even greater.

Conclusion

The access of Aboriginal mothers delivering in Perth hospitals to culturally appropriate breastfeeding promotion is limited. A major reason for this might be the transient location of many Aboriginal families. The young age of many Aboriginal mothers may provide an opportunity for breastfeeding information to be included in the high school health education curriculum.

Acknowledgements

We gratefully acknowledge the willing assistance given by the mothers in our study, the hospital staff and community health workers. Without this assistance the study would not have been possible.

Funding

The Perth Infant Feeding Study was funded by the Commonwealth Department of Health and Ageing.

The Perth Aboriginal Breastfeeding Study was funded by the National Health and Medical Research Council.

References

- Binns C, Davidson G. Infant Feeding Guidelines for Health Workers. In: *Dietary Guidelines for Children and Adolescents in Australia*. Canberra (ACT): National Health and Medical Research Council; 2003.
- Strategic Inter-Governmental Nutrition Alliance (SIGNAL). *Eat Well Australia. A Strategic Framework for Public Health Nutrition/National Aboriginal & Torres Strait Islander Nutrition Strategy & Action Plan*. Canberra (ACT): National Public Health Partnership; 2001.
- Oddy W. Breastfeeding protects against illness and infection in infants and children: a review of the evidence. *Breastfeed-Rev* 2001;9:11-18.
- Kramer MS, Guo T, Platt RW, et al. Breastfeeding and infant growth: biology or bias? *Pediatrics* 2002;110(2 Pt 1):343-7.
- Fergusson DM, Woodward LJ. Breast feeding and later psychosocial adjustment. *Paediatr Perinat Epidemiol* 1999;13(2):144-57.
- Horwood LJ, Darlow BA, Mogridge N. Breast milk feeding and cognitive ability at 7-8 years. *Arch Dis Child Fetal Neonatal Ed* 2001;84(1):F23-7.
- Hitchcock NE. Infant feeding in Australia: An historical perspective. Part 2: 1900-1988. *Aust J Nutr Diet* 1989;46(4):102-8.
- Scott JA, Binns CW, Aroni RA. Breast-feeding in Perth: recent trends. *Aust N Z J Public Health*. 1996;2:210-11.
- Gracey M, Murray H, Hitchcock N, Owles E, Murphy B. The nutrition of Australian Aboriginal infants and young children. *Nutr Res* 1983;3:133-47.
- Phillips F, Dibley M. A longitudinal study of feeding patterns of Aboriginal infants living in Perth, 1980-1982. *Proc Nutr Soc Aust* 1983;8:130-2.
- Australian Bureau of Statistics. *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples 1997*. Canberra (ACT): ABS; 1997. ABS Catalogue No.:4704.0.
- National Health and Medical Research Council. *Nutrition in Aboriginal and Torres Strait Islander Peoples: An Information Paper*. Canberra (ACT):NHMRC; 2000.
- Scott J, Binns C, Aroni R. Breastfeeding Perth - Recent Trends. *Aust N Z J Public Health* 1996;20(2):210-11.
- Donath S, Amir L. Rates of breastfeeding in Australia by State and socio-economic status: evidence from the 1995 National Health Survey. *J Paediatr Child Health* 2000;36(2):164-8.
- Binns C, Gilchrist D, Woods B, et al. Breastfeeding by Aboriginal mothers in Perth. *Nutr Diet*. In press 2004.
- Department of Health and Ageing. *National Breastfeeding Strategy*. Canberra (ACT): Commonwealth of Australia; 2003. [cited 2004 March 31]. Available from: URL: <http://www.health.gov.au/pubhth/strateg/brfeed/index.htm>
- Scott JA, Aitkin I, Binns CW, Aroni RA. Factors associated with the duration of breastfeeding amongst women in Perth. Australia. *Acta Paediatr Scand* 1999;88(4):416-21.
- Scott JA, Binns CW, Aroni RA. The influence of reported paternal attitudes on the decision to breastfeed. *J Paediatr Child Health* 1997;33:305-7.
- Scott JA, Binns CW, Aroni R. *Infant Feeding Practices in Perth and Melbourne*. Report for the National Better Health Promotion Program. Perth (WA): Curtin University; 1995.
- Scott J, Landers M, Hughes R, Binns C. Factors associated with the initiation and duration of breast feeding amongst two populations of Australian women. *J Paediatr Child Health* 2001;37:254-61.
- Scott JA, Binns CW. Factors associated with the initiation and duration of breastfeeding. *Aust J Nutr Diet* 1998;55(2):51-61.
- Lumley J, Brown S. Attenders and nonattenders at childbirth education classes in Australia: how do they and their births differ? *Birth* 1993;20(3):123-30.
- Polhamus B, Dalenius K, Thompson D, Scanlon K, Borland E, Smith B, et al. *Pediatric Nutrition Surveillance 2001 Report*. Atlanta (GA): US Department of Health and Human Services, Centers for Disease Control and Prevention; 2003.
- Ministry of Health. *Breastfeeding: A Guide to Action*. Wellington (NZ): Ministry of Health; 2002.
- Australian Bureau of Statistics. Populations of Australia and New Zealand: A Comparison. In: *Australian Social Trends*. Canberra (ACT): ABS; 2001.
- McLennan W, Madden R. *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples*. Canberra (ACT): Australian Bureau of Statistics; 1999.
- Thompson S, Gifford S. The social and cultural context of risk and prevention: Food and physical activity in an urban aboriginal community. *Health Educ Behav* 2000;27(6):725-43.
- National Health and Medical Research Council. *Promoting the Health of Aboriginal and Torres Strait Island Communities: Case Studies and Principles of Good Practice*. Canberra (ACT): AGPS; 1996.
- Mackerras D. Birthweight changes in the pilot phase of the Strong Woman Strong Babies Strong Culture Program in the Northern Territory. *Aust N Z J Public Health* 2001;25(1):34-40.
- Institute of Medicine. *Infant Formula: Evaluating the Safety of New Ingredients*. Washington (DC): National Academy of Science; 2004.

Authors

Dawn Gilchrist, Goldfields South-East Health Region, Western Australia.

Beth Woods, Colin W. Binns, Michael Gracey, School of Public Health, Curtin University of Technology, Western Australia

Jane Scott, Division of Developmental Medicine, University of Glasgow, United Kingdom

Hannah Smith (nee Herod), School of Public Health, Curtin University of Technology, Western Australia

Correspondence

Professor C. W. Binns, Curtin University of Technology, School of Public Health, GPO Box U1987, Perth, Western Australia 6845.
Tel: (08) 9266 2952; fax: (08) 9266 2958; e-mail: cbinns@health.curtin.edu.au