Promoting the initiation of breast feeding

L Fairbank, S O'Meara, A J Sowden, M J Renfrew, M M Woolridge

Background

This paper summarises *Effective Health Care*, volume 6, number 2,¹ which is based on a systematic review to evaluate the effectiveness of interventions to promote the initiation of breast feeding.²

Breast feeding is a key public health issue. Health benefits associated with breast feeding include protection against gastroenteritis, respiratory infection, otitis media, urinary tract infections, and diabetes mellitus for the infant³ and premenopausal breast, ovarian, and endometrial cancers for the mother.⁴ These health benefits may be countered by some concern over pathogen transmission through breast feeding, for example, in the case of HIV.⁵

Despite national initiatives, successive surveys have shown that the incidence and prevalence of breast feeding in the UK have remained static since 1980. In 1995 62% of women started to breast feed in England and Wales, 48% in Scotland, and 41% in Northern Ireland.⁶ (Figures standardised for mother's age and age finished full time education.)

Furthermore, breast feeding rates in the UK have been found to be strongly associated with social class; 90% of women from social class I started to breast feed in 1995 compared with only 50% of women from social class V.⁷ Policies to increase the prevalence of breast feeding have been recommended in a recent Department of Health action report on reducing health inequalities⁷ (arising from the White Paper *Saving lives: our healthier nation*⁸).

Promoting initiation

This bulletin is based mainly on interventions which have been evaluated using randomised controlled trials (RCTs) or non-RCTs. Reference is made to findings from before/after studies where there is limited or no evidence

from RCTs and/or non-RCTs. Details of all the studies together with the methods used are available in the full report.²

The studies were difficult to synthesise because they vary according to the populations studied and, within an intervention category, by the type, duration and the way in which the intervention was delivered. Lack of standardisation in measuring the initiation of breast feeding also made comparisons between studies difficult.

Interventions to promote the initiation of breast feeding have been classified into five categories which are listed in table 1.

HEALTH EDUCATION

Various health education interventions have been evaluated in 10 RCTs.^{9–18} Some provided information via leaflets or pamphlets and some via group or one-to-one educational sessions. The majority focused on the benefits of breast feeding and, in some, technical information about how to breast feed was also included.

One trial conducted in the USA recruited women in their first pregnancy who were already enrolled for childbirth classes.⁹ The intervention group attended a breast feeding education class which focused on the benefits of breast feeding and information about how to breast feed. Breast feeding rates were significantly higher in the intervention group than in the control group (no details given of the control) (RR 3.00, 95% CI 1.51 to 5.95).

Of three RCTs^{14–16} which evaluated interventions aimed at specific ethnic or cultural groups, two significantly increased initiation rates.^{14–17} Both studies focused on the benefits of breast feeding which were discussed in either a group^{14–17} or one-to-one format.¹⁶ In one trial Vietnamese immigrant women in Australia were offered a videotape followed by a series of small group discussions about the benefits of breast feeding, the content of which was adapted for their cultural needs.¹⁷ The number of women breast feeding at birth was significantly greater in the intervention group than in the control group (RR 1.92, 95% CI 1.44 to 2.56) and was maintained at 4 weeks postpartum but not at 6 months. In the other trial Black American women of low income were randomised to receive group or one-to-one educational sessions.¹⁴ The sessions covered the benefits of breast feeding together with common problems and inhibitions about

Mother and Infant Research Unit, University of Leeds, UK
L Fairbank, research fellow

NHS Centre for Reviews and Dissemination, University of York, UK
S O'Meara, research fellow
A J Sowden, associate director

Mother and Infant Research Unit, University of Leeds, 22 Hyde Terrace, Leeds LS2 9LN, UK
M J Renfrew, professor of midwifery
M M Woolridge, senior lecturer, infant feeding

Correspondence to:
Ms L Fairbank
L.Fairbank@leeds.ac.uk

Table 1 Categories of intervention to promote the initiation of breast feeding

Category of intervention	Description
Health education interventions	Factual information about breast feeding often delivered via leaflets or educational sessions, usually grounded in professional expertise
Health sector initiatives	Interventions which aim to change the organisational nature of health services in favour of promoting breast feeding, including health professional training, social support from health professionals, the Baby Friendly Hospital Initiative, and the Women, Infants & Children Programme
Peer support programmes	Interventions delivered by knowledgeable peers
Media campaigns	Interventions which use a public medium such as TV and press
Multifaceted interventions	Interventions which have more than one component

breast feeding. Both groups were also compared with a non-randomised control group who received usual care. Both group (RR 1.73, 95% CI 1.08 to 2.76) and one-to-one education (RR 1.97 95% CI 1.21 to 3.21) significantly increased initiation of breast feeding in hospital compared with usual care, and this difference was maintained at 12 weeks in women who received group education.

Four other RCTs also targeted low income women in the USA.^{10 11 13 18} All trials compared the use of written literature and/or formal advice from a health professional in the prenatal period. Only one trial reported significantly increased initiation rates although, when the results were re-calculated to include all women regardless of whether or not they withdrew, the difference was no longer statistically significant (RR 1.40, 95% CI 0.99 to 1.99).¹⁰

Another RCT evaluated the effects of written literature in the form of a fact sheet about the benefits of breast feeding among women attending an antenatal clinic in Ireland.¹⁵ There was no evidence that breast feeding rates at hospital discharge were influenced.

Overall, the results from these studies provide some evidence to suggest that small informal discussion classes emphasising the benefits of breast feeding and practical advice on how to breast feed can increase initiation rates, including women of certain ethnic groups. Literature alone appears to have limited impact, particularly among women on low incomes.

HEALTH SECTOR INITIATIVES

General health sector initiatives

One RCT¹⁹ and three non-RCTs evaluated the effectiveness of general health sector initiatives.²⁰⁻²² In the RCT women from a low income urban population in Nicaragua were randomised to early mother-infant contact combined with breast feeding promotion followed by complete separation until discharge or standard care (complete separation).¹⁹ Rooming in (defined as continuous contact between mothers and babies until discharge) with breast feeding promotion was added as a third arm at a later date. Rates of initiation were significantly greater after rooming in than after standard care (RR 1.94 95% CI 1.06 to 3.56) and were just significant in favour of rooming in compared with early contact (RR 0.74 95% CI 0.56 to 0.97). There was no significant difference between early contact and standard care.

Three non-RCTs which evaluated general health sector initiatives found mixed results.²⁰⁻²² One Brazilian trial of rooming in, breast feeding promotion, and assistance with breast feeding significantly increased breast feeding in the delivery room compared with a control who received standard care (rooming in) (RR 3.34, 95% CI 2.78 to 4.02).²⁰ Initiation rates did not differ significantly in either the study evaluating a structured breast feeding programme integrated into the Maternal and Child Health Services in Jerusalem²¹ or the provision of one-to-one midwifery practice in the UK.²²

Training of health professionals

One RCT was identified which evaluated the effectiveness of training for health professionals.²³ Knowledge of breast feeding and clinical and counselling skills of health professionals were assessed after a 40 hour training course and all three outcomes were found to improve significantly after the course relative to the control. The effect on initiation of breast feeding was not measured. Two UK based before/after studies which assessed initiation rates after training midwives^{24 25} and health visitors²⁴ found no evidence of improvement.

Social support from health professionals

One UK based RCT evaluated the effect of social support in the form of home visits and telephone calls from a midwife to socially disadvantaged women on a number of different outcomes, including initiation of breast feeding at hospital discharge.²⁶ Initiation rates between the intervention and control group (standard care) were not significantly different. Womens' attitudes towards the intervention were very positive with 80% of those who responded reporting that the midwife listening to them was important.

Baby Friendly Hospital Initiative (BFHI)

The UK BFHI was launched in 1994 with the aim of helping all parents to make informed decisions about feeding their babies and then supporting them in their chosen method.²⁷ Best practice is represented by the *Ten steps to successful breast feeding*²⁷ and, more recently, the *Seven point plan* which focuses on the community based health care sector.²⁸ No RCTs or non-RCTs have evaluated the effectiveness of the BFHI on the initiation of breast feeding; one RCT was identified which evaluated the implementation of the *Ten steps to successful breast feeding*.²⁹ A hospital in Brazil that had recently achieved the Baby Friendly award provided a training course which covered all aspects of the *Ten steps to successful breast feeding* to four other hospitals. Six months after the intervention the four intervention hospitals were found to have implemented more of the 10 steps than the four control institutions (scores out of 10 were 3.95 and 2.95, respectively).

US Department of Agriculture Special Supplemental Nutrition Programme for Women, Infants and Children (WIC)

WIC is one of the largest federally funded nutrition programmes in the USA. It is targeted at low income pregnant and breast feeding women, infants, and children up to 5 years of age who are considered to be at nutritional risk. Six trials³⁰⁻³⁵ were identified which evaluated the effectiveness of WIC programmes. One RCT evaluated one-to-one education sessions focusing on the benefits of breast feeding and support by a lactation consultant to women eligible for the WIC programme.³⁰ In the intervention group more women breastfed in hospital than in the control group who received routine care (RR 1.73, 95% CI 1.20 to 2.51). The median duration of

breast feeding was also significantly increased in the intervention group (84 days) compared with the control group (33 days). In a second RCT women and their partners attending WIC clinics were offered education covering the benefits and practice of breast feeding.³¹ The sessions were also intended to motivate and empower women to breast feed and prizes for participating in breast feeding classes were offered. The authors reported significantly higher rates of breast feeding in the intervention group than in the control group who received standard breast feeding education. However, when the results were re-calculated to include all women, regardless of whether or not they withdrew from the study, the difference was no longer statistically significant.

Three non-RCTs which evaluated interventions carried out in WIC clinics found that the number of women initiating breast feeding was significantly increased as a result of the intervention.^{32–34} The duration of breast feeding was also significantly increased in all intervention groups at 7–10 days postpartum,³³ after 6 weeks,³⁴ and up to and including 12 weeks.³² All three interventions consisted of peer support and in one a video, posters, and pamphlets were also included.³³

One other non-RCT offered education about the benefits and the technique of breast feeding to women who had expressed a desire to breast feed.³⁵ No significant differences in initiation between the intervention group and the control group who received standard WIC care were found. However, the average duration of breast feeding was found to be significantly greater in the intervention group (76 days) than in the control group (30 days).

These studies suggest that both initiation and duration rates can be increased following the implementation of WIC programmes in low income women. In particular, those programmes which included a peer support component appeared to influence initiation of breast feeding.

PEER SUPPORT PROGRAMMES

Two non-RCTs have examined the effect of peer support on initiation rates, both in women on low incomes.^{36, 37} In one US study trained volunteers and mothers who planned to breast feed were matched according to ethnicity and socioeconomic background.³⁶ Volunteers talked with mothers and maintained telephone contact for at least 12 weeks after the baby was born. At discharge from hospital significantly more women in the intervention group were breast feeding than in the control group (RR 1.34, 95% CI 1.09 to 1.65). Differences in the numbers of women breast feeding remained significant up to the final follow up at 12 weeks postpartum. In a UK study two similar socially deprived communities in Glasgow were identified and women in one were offered peer counselling.³⁷ No significant differences in breast feeding were detected overall between the two communities. However, when the results were re-analysed to take account of differences in socioeconomic status, significantly more women in the intervention group initiated

breast feeding at delivery. By 6 weeks postnatally the difference was no longer statistically significant.

A qualitative study provides evidence of why peer support programmes may be effective.³⁸ Women were more likely to decide to breast feed if they had regularly seen a relative or friend successfully breast feeding. Peer support programmes offer the opportunity of contact over time with women who have successfully breastfed, and the trials reviewed here offer some support for such programmes.

MEDIA CAMPAIGNS

Although no RCTs or non-RCTs evaluating the impact of media campaigns were identified, the results from two before/after studies suggest that local campaigns targeted at pregnant women³⁹ or girls in high school⁴⁰ can influence breast feeding rates³⁹ and attitudes towards breast feeding.⁴⁰

MULTIFACETED INTERVENTIONS

A “package” of different interventions provided simultaneously has been evaluated in one non-RCT in Mexico.⁴¹ Four groups of pregnant women within communities were allocated to receive either breast feeding education from a trained health professional, peer support, both interventions, or no intervention. Initiation of breast feeding was reported to be 89% for all intervention groups combined compared with 56% in the control group (the results were not compared statistically).

Findings from five before/after studies indicated that successful multifaceted interventions tended to include education about breast feeding, structural changes to the health sector combined with peer support programmes,⁴² and/or some kind of media activity.^{43–46}

Gaps in the evidence

There is very limited information on either the cost effectiveness of interventions to promote the initiation of breast feeding or the acceptability of the intervention to women themselves.

Only one before/after study has provided some evidence for the effectiveness of the implementation of government policy about the promotion of breast feeding.⁴⁵ Infant feeding practices in Scotland following recommendations from the Department of Health in 1974 were monitored over a 3 year period. In addition, the media gave extensive coverage to the advantages of breast feeding and initiation rates were reported to increase by around 20%.

No studies were identified which have evaluated the impact of providing supportive environments such as facilities for women to breast feed in public places.

Implications

While a few of the studies were conducted in the UK, many of the interventions were implemented and evaluated in the USA. Although there are issues around applicability because sociocultural factors can have an important

influence, a number of recommendations for policy and practice can be made based on the evidence in this bulletin.

Consideration needs to be given to the revision of local and national policy to reflect an evidence based approach to the promotion of breast feeding with particular emphasis on the reduction of inequalities in health in accordance with *The NHS plan*.⁴⁷ Specific policy developments could include: the development of national health inequality targets to support local initiatives; the collection of standard data about the uptake of breast feeding; and increased access to breast feeding promotion services for black and ethnic minority communities.

Trusts have an important role to play in promoting breast feeding and should be encouraged to update policies to take account of the evidence presented here. This could include an audit of existing information and education programmes combined with increased emphasis on the provision of small discussion classes focusing on the benefits of breast feeding along with practical advice.

Although the RCT evidence for peer support programmes is relatively limited, the breadth of evidence suggests that such programmes could be further developed, particularly to improve both the initiation and duration of breast feeding among women on low incomes. The impact of peer support programmes needs to be monitored, including those where peer support is provided as part of a "package" of different services.

Trusts should be encouraged to meet the required standard for accreditation as "Baby Friendly". In achieving accreditation they are required to collect statistics on breast feeding rates as well as to develop a written policy, provide training for staff, offer information to women about benefits and on practices which support breast feeding.

Although evidence for the impact of media activities is limited, campaigns such as National Breast Feeding Awareness Week offer an opportunity to promote breast feeding via a coordinated public campaign. The different impacts of local and national media activities in helping to create a culture which is supportive of breast feeding need to be evaluated.

The introduction of current good practice needs to be monitored and, as a minimum, breast feeding rates should be routinely recorded. The definition of "ever breastfed" used in UK surveys could be adopted⁸ and guidance on the use of standard definitions for measuring initiation rates would make it possible to distinguish between exclusive and partial breast feeding at different stages.

Research is needed to identify the most cost effective interventions for promoting breast feeding and women's views of those services, including both health service and public/social interventions such as early return to work, media activities, lack of public facilities, and lack of tolerance for breast feeding in public.

- 1 NHS Centre for Reviews and Dissemination. Promoting the initiation of breast feeding. *Effective Health Care* 2000;6:1-12.
- 2 Fairbank L, O'Meara S, Renfrew MJ, et al. A systematic review to evaluate the effectiveness of interventions to promote the initiation of breast feeding. *Health Technol Assess* 2000;4(25).
- 3 Heinig MJ, Dewey KG. Health advantages of breast feeding for infants: a critical review. *Nutr Res Rev* 1996;9:89-110.
- 4 Heinig MJ, Dewey KG. Health effects of breast feeding for mothers: a critical review. *Nutr Res Rev* 1997;10:35-56.
- 5 WHO/UNICEF. *HIV and infant feeding: a policy statement developed collaboratively by UNAIDS, WHO and UNICEF*. 1997.
- 6 Foster K, Lader D, Cheesbrough S. *Infant feeding 1995*. London: Office for National Statistics, The Stationery Office, 1997.
- 7 Department of Health. *Reducing health inequalities: an action report. Our healthier nation*. London: The Stationery Office, 1999.
- 8 Department of Health. *Our healthier nation*. London: Department of Health, 1998.
- 9 Wiles LS. The effect of prenatal breast feeding education on breast feeding success and maternal perception of the infant. *J Obstet Gynecol Neonatal Nurs* 1984;13:253-7.
- 10 Coombs DW, Reynolds K, Joyner G, et al. A self-help program to increase breast feeding among low income women. *J Nutr Educ* 1998;30:203-9.
- 11 Hill PD. Effects of education on breast feeding success. *Maternal-Child Nurs J* 1987;16:145-56.
- 12 Howard C, Howard F, Lawrence R, et al. Office prenatal formula advertising and its effect on breast-feeding patterns. *Obstet Gynecol* 2000;95:296-303.
- 13 Kaplowitz DD, Olson CM. The effect of an educational program on the decision to breast feed. *J Nutr Educ* 1983;15:61-5.
- 14 Kistin N, Benton D, Rao S, et al. Breast-feeding rates among black urban low income women: effect of prenatal education. *Pediatrics* 1990;86:741-6.
- 15 Loh NR, Kelleher CC, Long S, et al. Can we increase breast feeding rates? *Ir Med J* 1997;90:100-1.
- 16 McEnery G, Rao KP. The effectiveness of antenatal education of Pakistani and Indian women living in this country. *Child Care Health Devel* 1986;12:385-99.
- 17 Rossiter JC. The effect of a culture-specific education program to promote breast-feeding among Vietnamese women in Sydney. *Int J Nurs Stand* 1994;31:369-79.
- 18 Serwint JR, Wilson ME, Vogelhut JW, et al. A randomized controlled trial of prenatal pediatric visits for low income families. *Pediatrics* 1996;98:1069-75.
- 19 Lindenberg CS, Artola RC, Jimenez V. The effect of early post-partum mother-infant contact and breast-feeding promotion on the incidence and continuation of breast-feeding. *Int J Nurs Stand* 1990;27:179-86.
- 20 Lutter CK, Perez-Escamilla R, Segall A, et al. The effectiveness of a hospital-based program to promote exclusive breast-feeding among low income women in Brazil. *Am J Public Health* 1997;87:659-63.
- 21 Palti H, Valderama C, Pogrund R, et al. Evaluation of the effectiveness of a structured breast-feeding promotion programme integrated into a maternal and child health service in Jerusalem. *Is J Med Sci* 1988;24:342-8.
- 22 Page L, McCourt C, Beake S, et al. Clinical interventions and outcomes of one-to-one midwifery practice. *J Public Health Med* 1999;21:243-8.
- 23 Rea MF, Venancio SI, Martinez JC, et al. Counselling on breast feeding: assessing knowledge and skills. *Bull WHO* 1999;77:492-8.
- 24 Brimblecombe FSW, Cullen D. Influences on a mother's choice of method of infant feeding. *Public Health* 1977;91:117-26.
- 25 Stokoe B. Failure breeds success. *Health Visit* 1994;67:170.
- 26 Oakley A, Rajan I, Grant AM. Social support and pregnancy outcome. *Br J Obstet Gynaecol* 1990;97:155-62.
- 27 UNICEF. *Implementing the ten steps to successful breast feeding*. London: UNICEF, 1998.
- 28 UNICEF. *The Baby Friendly Initiative in the community. A seven point plan for the protection, promotion and support of breast feeding in community health care settings*. London: UNICEF, 1999.
- 29 Westphal MF, Taddei JA, Venancio SI, et al. Breast-feeding training for health professionals and resultant institutional changes. *Bull WHO* 1995;73:461-8.
- 30 Brent NB, Redd B, Dworetz A, et al. Breast-feeding in a low income population. Program to increase incidence and duration. *Arch Pediatr Adolesc Med* 1995;149:798-803.
- 31 Sciacca JP, Phipps BL, Dube DA, et al. Influences on breast-feeding by lower-income women: an incentive-based, partner-supported educational program. *J Am Diet Assoc* 1995;95:323-8.
- 32 Schafer E, Vogel MK, Viegas S, et al. Volunteer peer counselors increase breast feeding duration among rural low income women. *Birth* 1998;25:101-6.
- 33 Caulfield LE, Gross SM, Bently ME, et al. WIC-based interventions to promote breast feeding among African-American women in Baltimore: effects on breast feeding initiation and continuation. *J Hum Lact* 1998;14:15-22.
- 34 Shaw E, Kaczorowski J. The effect of a peer counseling program on breast feeding initiation and longevity in a low income rural population. *J Hum Lact* 1999;15:19-25.
- 35 Reifsnider E, Eckhart D. Prenatal breast feeding education: its effect on breast feeding among WIC participants. *J Hum Lact* 1997;13:121-5.

- 36 Kistin N, Abramson R, Dublin P. Effect of peer counselors on breast feeding initiation, exclusivity and duration among low income urban women. *J Hum Lact* 1994;10:11–5.
- 37 McInnes RJ, Love JG, Stone DH. Evaluation of a community-based intervention to increase breast feeding prevalence. *J Hum Lact* 2000;22:138–45.
- 38 Hoddinott P, Pill R. Qualitative study of decisions about infant feeding among women in east end of London. *BMJ* 1999;318:30–4.
- 39 Coles EC, Cotter S, Valman HB. Increasing prevalence of breast feeding. *BMJ* 1978;2:1122.
- 40 Friel JK, Hudson NI, Banoub S, *et al.* The effect of a promotion campaign on attitudes of adolescent females towards breast feeding. *Can J Public Health* 1989;80:195–9.
- 41 Rodriguez-Garcia R, Aumack KJ, Ramos A. A community-based approach to the promotion of breast feeding in Mexico. *J Obstet Gynecol Neonatal Nurs* 1990;19:431–8.
- 42 Hartley BM, O'Connor ME. Evaluation of the 'Best Start' breast-feeding education program. *Arch Pediatr Adolesc Med* 1996;150:868–71.
- 43 Rea MF. The Brazilian national breast feeding program: a success story. *Int J Gynaecol Obstet* 1990;31:79–82.
- 44 Wright AL, Naylor A, Wester R, *et al.* Using cultural knowledge in health promotion: breast feeding among the Navajo. *Health Educ Behav* 1997;24:625–39.
- 45 Kirk TR. Appraisal of the effectiveness of nutrition education in the context of infant feeding. *J Hum Nutr* 1980;34:429–38.
- 46 McDivitt JA, Zimicki S, Hornik R, *et al.* The impact of the Healthcom mass media campaign on timely initiation of breast feeding in Jordan. *Stud Fam Plann* 1993;24:295–309.
- 47 Department of Health. *The NHS Plan. A plan for investment. A plan for reform.* Cm 4818–1, 2000.

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