

Breastfeeding determinants and a suggested framework for action in Europe

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Abstract

This is a background paper for the EURODIET initiative. A number of international initiatives and documents were identified, such as the Baby-Friendly Hospital Initiative, the International Code of Marketing of Breast Milk Substitutes and a number of consensus reports from professional groups, that propose ways forward for breastfeeding promotion. These point at a range of initiatives on different levels. The determinants for successful breastfeeding have to be identified. They can be categorised into five groups; socio-demographic, psycho-social, health care related, community- and policy attributes. A framework for future breastfeeding promoting efforts on European level is suggested, within which these determinants are considered.

A common surveillance system needs to be built in Europe, where determinants of breastfeeding are included. There is also a need for a surveillance system which makes it possible to use the collected data on local level, not only on national and supranational level. Combined with a thorough review of the effectiveness of already existing breastfeeding promotion programmes, a co-ordinated EU – EFTA action plan on breastfeeding should be formulated and implemented within a few years. Urgent action could take place in parallel, especially targeting young, low-income, less educated mothers.

Keywords
Breastfeeding
Infant feeding
Monitoring
Prevalence
Health policy
Health promotion
Disease prevention
Equity
Determinants

Introduction

The initiation and duration of exclusive and partial breastfeeding, depends on a number of determinants. These can be of very different types, for example socio-demographic, psychosocial, or health-care related. These determinants are in some cases possible to modify, while some are less or not at all modifiable. Knowledge about the type and importance of the determinants for breastfeeding is essential for building effective promotion programmes. There is a distinct need for promotion of breastfeeding, to increase the initiation, the exclusiveness, and the extended duration of breastfeeding. This paper was written as a background document for the EURODIET project¹. The aims of the paper are to provide an overview of:

- Current consensus and policy documents, summarising their position on breastfeeding promotion
- Current knowledge regarding determinants for infant feeding; and to
- Put the result into a framework for action for the European region to assist breastfeeding promotion.

Consensus statements

The Innocenti Declaration

This document², which was the result of a joint WHO/ UNICEF meeting in Florence, Italy in 1990, stresses the need for the reinforcement of a 'breastfeeding culture'. This requires commitment and advocacy for social mobilisation from acknowledged leaders of society. The document states that all governments by the year 1995 should have:

- Appointed a national breastfeeding co-ordinator of appropriate authority, and established a multi-sectorial national breastfeeding committee composed of representatives from relevant government departments, NGOs, and health professional associations;
- Ensured that every facility providing maternity services fully practices all ten of the Ten Steps to Successful Breastfeeding set out in the joint WHO/ UNICEF statement 'Protecting, promoting and supporting breastfeeding: the special role of maternity services';
- Taken action to give effect to the principles and aim

of all Articles of the International Code of Marketing of Breast Milk Substitutes and subsequent relevant World Health Assembly resolutions in their entirety; and

- Enacted imaginative legislation protecting the breastfeeding rights of working women and established means for its enforcement.

The document also calls upon international organisations to:

- Draw up action strategies for protecting, promoting and supporting breastfeeding, including global monitoring and evaluation of their strategies;
- Support national situation analyses and surveys and the development of national goals and targets for action; and
- Encourage and support national authorities in planning, implementing, monitoring and evaluating their breastfeeding policies.

WHO/UNICEF

‘Protecting, promoting and supporting breastfeeding: the special role of maternity services: A joint WHO/UNICEF statement’^{3,4} was published in 1989. This document is especially geared towards health care services and presents *Ten steps to successful breastfeeding*. Every facility providing maternity services and care for newborn infants should:

- Have a written breastfeeding policy that is routinely communicated to all health care staff;
- Train all health care staff in skills necessary to implement this policy;
- Inform all pregnant women about the benefits and management of breastfeeding;
- Help mothers initiate breastfeeding within a half-hour of birth;
- Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants;
- Give newborn infants no food and drink other than breast milk unless medically indicated;
- Practice rooming-in – allow mothers and infants to remain together – 24 h a day;
- Encourage breastfeeding on demand;
- Give no artificial teats or pacifiers (also called dummies and soothers) to breastfeeding infants; and to
- Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

The document contains a series of suggestions for action, including the role of health care staff, care of the newborn and discharge recommendations. It concludes that ‘in every country, the competent authorities should

implement the health and social measures required to protect, promote and support breastfeeding. They should ensure that the most appropriate choice with regard to infant feeding is made within families, and that the health system supports this decision in every way.’

The Baby-Friendly Hospital Initiative

UNICEF/WHO further promoted the Ten Steps to Successful Breast Feeding by launching the Baby Friendly Hospital Initiative. This initiative includes an assessment, where a maternity care facility that wishes to be classified and certified as baby-friendly actively adopts the Ten Steps. The certification, which in some countries are supported from national authorities, takes place through the following procedure.

1. The facility makes a self-assessment based on the ten steps.
2. A formal request is sent by the facility to the Baby Friendly Hospital National Committee or to the WHO Office in Geneva.
3. An evaluation team is sent out, consisting of at least one certified BFHI assessor, assisted by local and regional staff. The team uses an accepted, standardized evaluation procedure.
4. The team gives recommendations to certify or not to certify the maternity facility for a limited period.

The WHO International Code of Marketing of Breast Milk Substitutes

The aim of the WHO International Code of Marketing⁵ is to ‘contribute to the provision of safe and adequate nutrition for infants, by the protection and promotion of breastfeeding, and by ensuring the proper use of breast milk substitutes, when these are necessary, on the basis of adequate information and through appropriate marketing and distribution.’ The Code says:

- No advertising of breast milk substitutes to the public;
- No free samples to mothers;
- No promotion of products in health care facilities;
- No company ‘mothercraft’ nurses to advise mothers;
- No gifts or personal samples to health workers;
- No pictures idealising artificial feeding, including pictures of infants on the products;
- Information to health workers should be scientific and factual;
- All information on artificial feeding, including the labels, should explain the benefits of breastfeeding, and the costs and hazards associated with artificial breastfeeding; and
- All products should be of a high quality and take into account the climatic and storage conditions of the country where they are used.

The European Union directives

The WHO Code of Marketing of Breast Milk Substitutes was adopted in 1981 by the World Health Organisation as a recommendation. The European Community and its Member States voted in favour of the Code stating that they would endeavour to give effect to its aims and principles in line with the legal, socio-economic and cultural situations prevailing in the Community⁶.

Breast milk substitutes, covered by the WHO Code, are infant formulae and regulated at Community level by Commission directive 91/321/EEC⁶. This directive includes many provisions inspired by the requirements of the WHO Code. These provisions were debated extensively with Member States and were the subject of substantial input from the European Parliament. They represent the maximum of the WHO Code requirements that could be transposed in Community legislation in line with the considerations agreed during the adoption of the Code. Not all the articles of the Code are fully implemented but this was a conscious choice after lengthy debate with Member States, the European Parliament and other interested parties such as consumers and industry. For example, the advertising of infant formula is restricted, but not the advertising of follow-on milks, other breast milk substitutes or bottles. Advertising in publications specialising in baby care and scientific publications is not restricted in the Commission Directive.

The Community is considered to be very advanced in the implementation of the Code given that there is related legislation. Other countries have not gone that far. In 1992 Council Directive 92/52/EEC⁷ on infant formulae exported to developing countries was adopted. This directive made the labelling and compositional provisions included in directive 91/321/EEC applicable to exported products unless the legislation in importing countries requires otherwise. This is the only case in which Community standards are made applicable to exported products. A council resolution, 92/C 172/01⁸, was passed at the same time as the Council Directive⁷, to ensure that marketing of products is in conformity with the International Code also outside the EU. Criticism has been directed towards the EU measures in relation to the Code.

It should be noted that responsibility for reinforcement of Community legislation, in this case the EU directives related to the International Code of Marketing⁵, lies with the Member States.

British Paediatric Association

A statement, made by the Standing Committee on Nutrition of the British Paediatric Association⁹, mentions a number of determinants of choice of feeding method: smoking; parental educational attainment; socio-economic status; family size and population density. 'All these determinants generally correlate with both breast feeding and health outcome, adjustment is essential but

often difficult. Failure to adjust generally favours an apparent breastfeeding benefit'. The document does not give any advice on promotion of breastfeeding.

Swedish concerted action

In a letter to the Swedish Minister of Health and Welfare in March 1998 from a number of Swedish non-governmental organisations¹⁰, the need for a national breastfeeding co-ordinator was emphasised and tasks for an officially appointed national breastfeeding co-ordinator were specified:

- Develop a national plan of action for breastfeeding promotion;
- Improve current surveillance practices;
- Serve as a resource centre for recent research findings;
- Co-ordinate, advocate and develop actions to promote breastfeeding, including those regarding the International Code for Marketing of Breast Milk Substitutes;
- Initiate and lead the work in a National breastfeeding expert committee; and
- Maintain and develop international collaboration.

The letter was signed by the breastfeeding support group 'Amningshjälpen', the Swedish Paediatric Society and other health care staff organisations (Riksföreningen för Barnsjuksköterskor, Svenska Barnmorskeförbundet, Riksföreningen för Distriktssköterskor and Vårdförbundet). It was suggested that such a co-ordinator could be placed within an authority, a university or a clinical setting, or within a non-governmental organisation, such as a breastfeeding support group, in order to emphasise that these organisations play an important role in the promotion of breastfeeding. Appointment should be made from Ministry level and high quality data, especially on exclusive breastfeeding, should be regularly reported.

American academy of pediatricians (AAP)

In the statement from the AAP¹¹, equity issues in breastfeeding are highlighted. Higher rates of breastfeeding are seen in higher-income, college-educated mothers aged over 30. Obstacles that are highlighted are 'physician apathy and misinformation', as well as disruptive health care practices and routines, lack of follow-up, lack of media advocacy and promotion of infant formula at hospital discharge.

The statement from AAP also contains a section on promotion, where the importance of the paediatrician in promoting, protecting and supporting breastfeeding is emphasised. A set of recommended breastfeeding practices are included, covering mainly health care practices essential to successful breastfeeding. Finally, the statement strongly encourages paediatricians to increase their competence in the physiology and clinical management of breastfeeding, to actively develop supportive policies and to ensure media advocacy as well as to encourage

employers to support maintenance of breastfeeding after mothers return to work.

The AAP concludes 'Although economic, cultural and political pressures often confound decisions about infant feeding, the AAP firmly adheres to the position that breastfeeding ensures the best possible health as well as the best developmental and psychosocial outcomes for the infant. Enthusiastic support and involvement of paediatricians in the promotion and practice of breastfeeding is essential to the achievement of optimal infant and child health, growth and development.'

The American dietetic association (ADA)

A position statement regarding breastfeeding was published in 1997¹². In the document, the ADA strongly encourages the promotion and advocacy of activities that support longer duration of successful breastfeeding, and suggests that public health and clinical efforts to promote breastfeeding should be sustained and strengthened.

The statement mentions demographic, psycho-social and employment-related barriers to breastfeeding, but also emphasises lack of knowledge among health care professionals and aggressive marketing practices of milk substitutes from the commercial sector. The ADA states that:

- All health care professionals have a responsibility to support breastfeeding through active lactation management;
- Critical review of undergraduate and graduate training programs in dietetics regarding breastfeeding is recommended; and
- Breastfeeding promotion activities should continue to support initiation, but broadly based additional efforts are clearly needed to increase duration rates of breastfeeding. The establishment of breastfeeding for at least 6 months, but optimally for at least one year, as a cultural norm supported by medical, social and economic practices is a fundamental cornerstone of the true promotion of wellness.

Healthy people 2010

Out of the 467 objectives within 28 focus areas that have been identified in the new US Department of Health document Healthy People 2010¹³, one specifically targets breastfeeding, within the focus area 'Maternal, infant and child health'. The objective is: 'Increase the proportion of mothers who breastfeed their babies'.

The target mentioned for the year 2010 is 75% for the early postpartum period, at 6 months 50% and at 1 year 25%. This represents an increase from the baseline in 1998 when rates were 64, 29 and 16% respectively. The document continues by describing the health benefits for mother and child, pointing out the socio-economic variations in breastfeeding. The promotion measures that are highlighted in the document are:

- Education of mothers and their partners as well as health providers;
- Changes in maternity care practices;
- Social support including support from employers; and
- Greater media portrayal of breastfeeding as the normal method of infant feeding.

ILO Maternity Protection Convention

In June 2000, the governing body of the ILO met in Geneva and revised the Maternity Protection Convention in order to further promote equality of all women in the workforce and the health and safety of mother and child. In relation to breastfeeding, the major changes were¹⁴:

- The introduction of a maternity leave of not less than 14 weeks;
- Cash benefits not less than two-thirds of the woman's previous earnings;
- A woman shall be provided with the right to one or more daily breaks or a daily reduction of hours to breastfeed her child; and
- The period during which nursing breaks or the reduction of daily hours of work are allowed, their number, the duration of nursing breaks and the procedures for the reduction of daily hours of work shall be determined by national law and practice. These breaks or the reduction of daily hours of work shall be counted as working time and remunerated accordingly.

The next step for this convention is the member ratification process, which has now started. After that the Director-General of ILO will draw the attention of the member states of ILO to the date upon which the convention shall come into force.

Determinants of breastfeeding

Information gathered for a previous paper by the authors, provided an overview of the prevalence of breastfeeding in Europe¹⁵. In gathering the prevalence data, a great number of data concerning determinants were found, either from official national reports or as a part of papers describing the prevalence of breastfeeding. Furthermore, a Medline search was performed and additional good and relevant papers were added. The determinants that were extracted from the different sources were put into a framework (Table 1), thus describing the diverse nature of the determinants. This framework was further used for analysing the levels at which promotion needs to take place, using the Precede-Proceed model¹⁶ (Fig. 1).

There are four diagnostic steps in the adaptation of the Precede-Proceed model used here. These are:

- epidemiological diagnosis;
- social, behavioural and environmental diagnosis;

Table 1 Determinants for breastfeeding

Concept	Definition
Demographic attributes	Background factors, social class, educational level, ethnicity, marital status, employment, geography (urban-rural), gender of child, age of mother
Psychosocial attributes	Factors directly related to the mother's intra- and interpersonal processes, maternal confidence, shyness, stage of change, health belief etc., and primary groups including family, friends, peers, that provide social identity, support, and role definition
Health care attributes and biomedical constraints	Rules, regulations, policies and practices within the health care system, which may constrain or promote breastfeeding; e.g. prenatal classes, early initiation, breastfeeding skills training, rooming in and biomedical constraints, e.g. peri-natal health of mother and child.
Community attributes	Social networks and norms, or standards, which exist as formal or informal among individuals, groups, and organisations. Existence of peer support groups. Existence of links between peri-natal care systems and peer support groups
Public policy	Local, state, federal policies and laws that regulate or support prenatal, peri-natal and child health care, inclusion of breastfeeding into school and health care staff training curricula, maternity benefits etc.

- educational and organisational diagnosis; and
- administrative and policy diagnosis.

Each step can be used to identify objectives for promotion, based upon the impact of change and the feasibility of and timing of change. In this paper, determinants of breastfeeding have been categorised according to these principles, with the intention to provide a platform for designing a frame work for action in Europe, which can be further used to formulate needs and priorities for action, regionally, nationally or at European level.

Results

(Table 2).

Demographic attributes

Great geographic differences in the prevalence of breastfeeding are found within and between European countries¹⁵. This might reflect differences between rural and urban areas, and/or socio-demographic, and/or deprivation characteristics e.g. in suburban areas, but also differences in several other types of determinants,

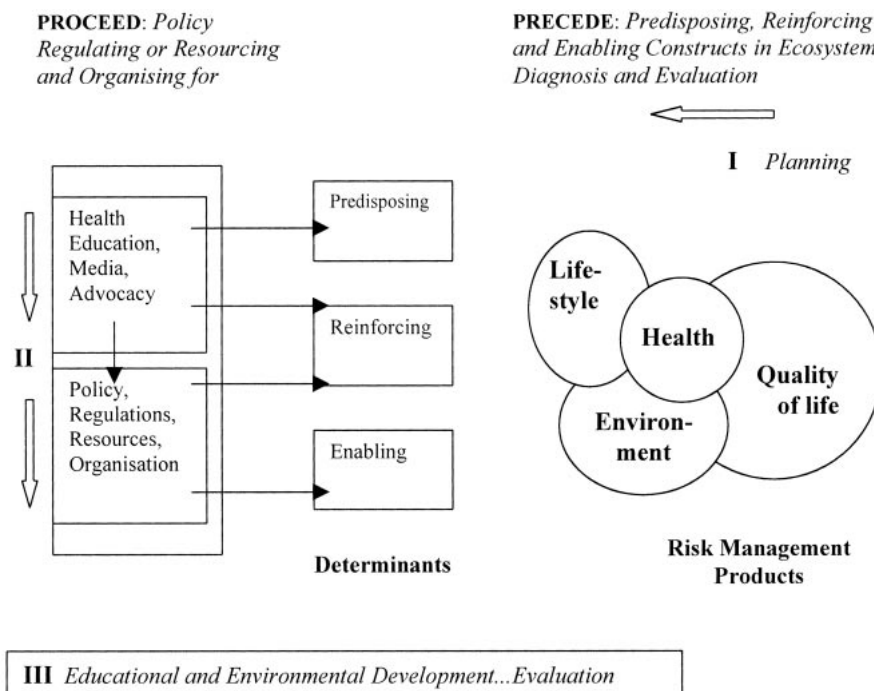


Fig. 1 The Precede–Proceed Model¹⁶

Table 2 Determinants for breastfeeding (*bf*)

Concept	Positive impact	Negative impact
Demographic attributes	High education and age of mother, small family	Low education, young age, single mother, urban, first child, employment
Psychosocial attributes	Supportive family and peers, cultural acceptance, previous successful <i>bf</i> experience, having seen mothers <i>bf</i>	Low maternal confidence, shyness, mother not breastfed herself
Health care attributes and biomedical constraints	Early initiations, prenatal class, participation, skills training, apprenticeship, low birth weight baby, maternal belief regarding <i>bf</i> and health of the baby	Premature birth, difficult labour, use of analgesics, sore nipples, maternity ward use of teats and bottle feeding, distribution of free samples of breast milk substitutes, smoking, baby of male gender
Community attributes	Consensus statements, media advocacy, workplace support, existence and acceptance of peer support groups, high level of community awareness and knowledge regarding <i>bf</i> prevalence and process	<i>Bf</i> considered as indecent exposure, miss-beliefs, low level of community support, low media advocacy
Public policy	Official recommendations, surveillance systems, maternity, benefits including prolonged paid maternity leave, baby-friendly hospitals initiative, inclusion of <i>bf</i> into school curriculum and in health care staff training, code of marketing of breast milk substitutes	Short maternity leave, low priority of <i>bf</i> as a health concern, no supportive structure for <i>bf</i> issues

for example the performance of maternal health services.

It has been shown that young mothers breastfeed less than older mothers. A low educational attainment, having a first baby and single marital status of the mother were other important negative determinants of breastfeeding. Mothers with small families are more likely to breastfeed, compared to those with numerous children^{17–30}.

Employment of the mother is an obstacle for breastfeeding, even for initiation, and certainly a risk factor for shorter duration and decreased exclusiveness of breastfeeding^{18,19}. This is especially emphasised in countries where a paid maternity leave is non-existent or short, or where employers provide little or no support for breastfeeding women.

Psychosocial attributes

Fathers have an important role in the decision about whether to breastfeed or not^{31–33}. Having a mother who breastfed herself, or having friends who master the skills and knowledge required to give effective support to the new mother, is extremely important^{34,35}. In some cases this factor may be even more important than supportive health care staff. A mother who has a previous successful breastfeeding experience, will have a much better chance of being successful again compared with someone who previously had a bad experience of breastfeeding. The whole issue of low maternal confidence, or low self-efficacy, where mothers are unsure that the milk they can provide is enough, or

who have difficulties in believing that they can be successful in breastfeeding, is an important obstacle for breastfeeding^{36–38}. It has been shown that mothers who are willing to breastfeed in front of others breast feed longer than women who are not comfortable doing so³⁹.

A role model who is breastfeeding or has previously breastfed successfully has a positive influence^{36,40,41}. The importance of exposing young mothers to other mothers while breastfeeding is therefore great. Breastfeeding can be seen as a practical skill, where learning to perform may be easier to gain through apprenticeship than through theory. In societies where breastfeeding is not the norm, and where breastfeeding in public is difficult, young mothers from low-educated families especially will find themselves in a 'cultural pocket' where they will not receive the positive influence of exposure to other breastfeeding women⁴².

Women who have a negative attitude to formula feeding, who very early on decide to breastfeed their babies, and who intend to breastfeed for a longer time, have a greater chance of success^{36,43}. Methods for measuring breastfeeding knowledge and self-efficacy have been developed, in order to identify those mothers who will need additional support^{44–48}. Assessing 'Stages of Change'⁴⁹ for breastfeeding has also been used in order to design more effective promotional strategies.

Health care attributes and biomedical constraints

In moving from pregnancy to infant feeding, biomedical issues and health care are of course very important^{3,4,50}.

The mother's understanding and beliefs in relation to breastfeeding and health of the baby and herself seem to be of the utmost importance in the decision to breastfeed^{51,52}. Knowing the skills required to breastfeed, e.g. the practical details about positioning, supply and demand, onset of lactation etc is important^{53–56}. Early discharge from maternity wards, which is increasing in prevalence, could be seen as a threat to gaining those skills. It does, however, not appear to be a problem, as long as post-discharge services including breastfeeding support are available^{57,58}.

The birth as such, including analgesic use, a difficult labour or an otherwise problematic situation for mother and/or child, can of course hinder breastfeeding initiation. So does a clinical practice that does not include supporting mothers to initiate breastfeeding when the baby is ready to suckle within the first period of awakesness with skin-to-skin contact. This period can last up to 2 hrs⁵⁹. The importance of an early initiation for the success of breastfeeding and bonding between mother and child can not be overemphasised^{59–62}.

Another negative factor is health care staff giving conflicting advice regarding breastfeeding^{63,64}. Maternity ward staff providing children with occasional bottle feeds hinders the onset of lactation. Distribution of free samples of breast milk substitutes has been shown to negatively influence breastfeeding⁶⁵.

Smoking mothers breastfeed less, and tend to breastfeed for a shorter duration⁶⁶. In a few studies, boys are breastfed less than girls¹⁷. This might be due to mothers' perception that 'boys need more'.

Community attributes

Local knowledge and action can support breastfeeding. Breastfeeding in public places is in some communities not acceptable, which provides a big problem for mothers⁶⁷. Work place programmes that provide opportunities for mothers to take an extended maternity leave, perhaps on a part-time basis are positive determinants⁴¹. A work place that provides extended support over time, including facilities for expressing breast milk or even breastfeeding at work, can greatly increase the breastfeeding duration⁶⁸.

In some cultural contexts, the view of the breast as a sexual object can create problems for women who want to breastfeed their babies⁶⁹. Another problem is the 'bottle-feeding pockets' that seem to emerge, with some groups in the population not being exposed to breastfeeding women. This can leave teenagers in particular without breastfeeding role models^{42,70}.

Public policy

Official recommendations, consensus statements, surveillance and support systems, which demonstrate an official

concern, have a positive influence on the prevalence of breastfeeding in countries⁷¹. A prolonged maternity leave is also of great importance, not only for duration but also for initiation of breastfeeding^{71,19}. The International Code of Marketing of Breast Milk Substitutes, provides additional protection and support to vulnerable mothers^{5,61,71}.

Inclusion of breastfeeding issues in local as well as national training of health care staff, as well as in school health education curriculum for children, is supportive⁷².

The steps included in the Baby Friendly Hospital Initiative are designed to act on the determinants described above, and have been shown in several studies to be of great importance, both for initiation and duration of breastfeeding^{3,4}. The inclusion of breastfeeding in European National plans of action for nutrition, composed as a response to the 1992 ICN meeting in Rome, is monitored by WHO Europe⁷³. WHO Europe also monitors the follow-up of the Innocenti Declaration^{2,74}.

Discussion

The determinants described and categorised above, can be further analysed for their effects on different aspects of breastfeeding: initiation, duration, and exclusiveness. In the section below, these are discussed from the perspective of predisposing, enabling and reinforcing factors, according to the Precede–Proceed model¹⁶.

Initiation

For initiation to take place, predisposing factors (e.g. breastfeeding knowledge, positive cultural beliefs and readiness to adopt breastfeeding) and enabling factors (e.g. available breastfeeding support and resources, supportive health care practice) are important.

The previous experience that the mother or her social network has regarding breastfeeding is of great importance for the mother's decision regarding infant feeding. This is important to recognise, since it is also the grandmothers' and friends' experiences of breastfeeding that will have an impact. Unsuccessful experiences will hence be 'inherited' within the social network of family and friends, leading to a low prevalence of breastfed children in certain social strata. That is also the case regarding short duration of breastfeeding. Or, as one author puts it 'opportunities for *exposure to breastfeeding* may be decreasing' due to smaller family size, more women working, increasing geographical separation of families and an increased socio-economically dependent geographic distribution of the population in suburbs⁴². In societies where breastfeeding is not the norm, and where breastfeeding in public is difficult, young mothers from low-educated families in particular will find themselves in a 'cultural pocket' where they will not receive the kind of positive influence that exposure to breastfeeding women could mean. The above issues can be described as 'experience, expectations and exposure', where all the

three components are of importance for initiation of breastfeeding.

For successful initiation of breastfeeding, prenatal and peri-natal care is also of extreme importance. The information and support, skills training and empowerment, that a mother can receive from properly trained health care staff in prenatal classes is vital to her decision concerning breastfeeding. The common practice of initiation of breastfeeding within the baby's first awake period after delivery, is a key element to success for breastfeeding. If initiation for some reason is delayed, the risk of short duration is increased.

Duration

For a long duration of breastfeeding, the reinforcing factors come into play. These factors provide reassurance and reminders of the importance of continued breastfeeding. The most important factors for the duration of breastfeeding will be found in the supportive systems that exist as the child gets older; peer-support groups, social network support, workplace support, maternity leave benefits and media advocacy. Cultural ingredients such as failure of the community to accept breastfeeding in public, will also threaten the duration of breastfeeding.

A factor that drastically shortens the duration of breastfeeding, is early introduction of breast milk substitutes, teats or other infant feeding systems. This is a result of the disturbance of the self-regulatory system that breastfeeding provides. Too early abandoning of exclusive breastfeeding gives shorter duration of breastfeeding.

Exclusiveness

For improved exclusiveness of breastfeeding, it is again mostly predisposing factors and enabling factors that are important. Differences in exclusiveness of breastfeeding will depend to a great extent on the mother's knowledge about the breast milk production process and also cultural beliefs. If she is also aware of the importance of not giving any other types of infant feeds during the first 6 months, she is more likely to breastfeed exclusively. For example mothers who are worried that their children will develop allergies, abstain from early introduction of other foods, because they know about the protective effects of exclusive breastfeeding. The routines at the maternity wards need to be highly supportive. The support systems that a mother will need, in order to keep up exclusive breastfeeding, will be those from the prenatal and perinatal care, child care and peer support groups. A paid maternity leave of extended duration will increase the chances of a prolonged exclusive breastfeeding period, as well as a supportive work place.

The Precede-Proceed model applied to provide a framework for European action

The Precede-Proceed model can be used for designing

a framework for European action to promote breastfeeding.

Diagnosis

A task force urgently needs to be set up, to co-ordinate the diagnostic work, and also to start developing urgent remedies for problems that have already been identified. The diagnostic steps that need to be developed are listed below:

- Epidemiological diagnosis and follow-up

Development of a surveillance system that provides comparable data about the prevalence and duration of exclusive and partial breastfeeding in the population in order to design targeted promotional models.

- Social, behavioural and environmental diagnosis

Broadening of the surveillance system above, to include identification of determinants of breastfeeding initiation, duration and exclusiveness, for example characterised as psychosocial attributes, health care attributes and medical constraints as suggested above. This diagnosis will provide further background for identifying the priorities and needs of different community groups. The methods that need to be used for this task are interviews, questionnaires and cross-comparisons with other data sets, e.g. on socio-economic status. Tools for assessing self-efficacy and stages of change have been used previously in this type of work, and need to be developed centrally, to ensure that when they are used the results are comparable.

- Educational and organisational diagnosis

This phase could focus on a system analysis of how breastfeeding issues are incorporated into curricula, beginning with the educational system in schools and include training of professionals. Identification of partnerships and structures that are, or can be, used for breastfeeding promotion should also be included.

- Administrative and policy diagnosis

This needs to include identification of factors such as existing recommendations, policy documents, maternity benefits, baby-friendly hospital initiatives.

For effective promotion, all these four steps of diagnosis need to be performed and put into the context of what is already known about effective interventions. This leads to the suggestion of building a proper system for a comprehensive diagnosis, comparable over Europe.

The European level

Currently some prevalence data are collected¹⁴, but only random surveys are carried out of determinants characterised here as psychosocial attributes and medical constraints. There is also some follow-up of the number of baby-friendly hospitals in Europe, as well as sporadic

follow-up of the Innocenti Declaration and of the inclusion of breastfeeding into National policies^{74,75}. A more comprehensive way of putting all this information into a model, which can be used on local, regional and national level and compared over Europe, would greatly increase the chances of early identification of risk groups within and between countries, thereby providing opportunities to design effective promotion programs. By introduction also of European consensus reports and recommendations, the European Community could provide its member states with a strong foundation for advocacy and training.

Recommendations for action

The equity issue of young, low-income, low-educated women, perhaps also immigrant women, who breastfeed less than their peers, is a matter of great concern. This is especially important since the problem has a tendency to perpetuate itself when these women live in a social context where breastfeeding is not the norm. In order to reach these groups and others, who previously have not been reached to a great extent, a number of issues should be highlighted with urgency:

Assessment tools

- The development of assessment tools aiming at early identification of vulnerable groups or even 'at risk' individuals. These assessment tools should be linked to national and supra-national surveillance systems, which also need to be developed.

Intervention tools

- The development of baby-friendly health care facilities, as a prolongation of the Baby-Friendly Hospital initiative in the community. A close link to peer support groups should hereby be ensured.
- The development of guidelines for workplace breastfeeding promotion in EU and EFTA countries, possibly building on the EU network for work place health promotion in collaboration with the European network for public health nutrition.
- The development of plans and support materials for media advocacy of breastfeeding.

Networking

- The development of a strong network of nationally appointed breastfeeding co-ordinators or promoters in EU and EFTA countries, all with specified remit and resources for action.
- The development of a strong network of breastfeeding experts in collaboration with the already existing European Network for public health nutrition as well

as peer support groups, in EU and EFTA countries, who as a joint venture can provide an update of research findings regarding breastfeeding promotion and related topics at yearly meetings.

Policy

- The development of a strong EU recommendation to countries for signing the ILO convention regarding minimum maternity leave.
- The development of a strong European consensus statement regarding breastfeeding and health of mother and child in European countries.
- The development of a common recommendation on breastfeeding exclusiveness and duration for EU and EFTA countries.
- An analysis concerning the implementation of the International Code of Marketing of Breast Milk Substitutes in EU and its impact on breastfeeding prevalence.

Training

- Ensuring that breastfeeding issues are covered in curricula for training of health professionals, using the above consensus statements and recommendations.
- Introducing breastfeeding issues early in the curriculum of schools – especially for the benefit of teenage mothers and prospective fathers.

Resources

- Sufficient resources should be made available for model intervention projects, as well as for evaluation of ongoing breastfeeding promotion.
- Research activities covering the health impact of breastfeeding as well as the development of promotion programmes, should be prioritised within the EU research programmes.

Local level

When there is a local consensus from health professionals on community level, as well as a good local surveillance system, the possibility for effective breastfeeding promotion activities is high^{75,76}. The determinants for breastfeeding vary over time in all communities and therefore need to be followed over time on local level. Simple assessment tools for assessing breastfeeding self-efficacy, stages of change or knowledge level regarding breastfeeding, may very well be used at an early stage of pregnancy and after birth⁴⁴⁻⁴⁷. By collecting local data on determinants of breastfeeding, 'bottle-feeding pockets' in local communities can be identified and the vicious circle broken through targeted promotion activities. Therefore, it is important that national or supranational bodies

provide tool kits for collecting good local data for local use in targeted breastfeeding promotion, as well as for use in national surveillance systems.

Conclusions

Existing programmes such as the Baby Friendly Hospital Initiative, and the Code of Marketing of Breast Milk Substitutes, need to be sustained and further supported. They include a number of initiatives, especially geared towards health care staff and against marketing of breast milk substitutes. However, these initiatives leave some aspects aside, which now need the full attention of the European Commission. One of those is the equity aspect, where less educated, low-income, young mothers, sometimes of ethnic origin, breastfeed less than their peers. Another is the great difference in breastfeeding prevalence seen between countries. Promotion, protection and support should be provided to *all* breastfeeding mothers and their babies, in order not to perpetuate today's situation when a child is provided the benefits of breastfeeding depending on nationality, economic circumstances, and their mother's educational level and age.

One way of assuring effective breastfeeding promotion, would be the creation of a comprehensive surveillance system, for example using the Precede-Proceed model with its four diagnostic steps. Combined with a thorough review of the effectiveness of already existing breastfeeding promotion programmes, a co-ordinated EU-EFTA action plan on breastfeeding could be formulated and implemented within a few years. Urgent action could take place in parallel, especially targeting young, low-income, less educated mothers.

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