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Breastfeeding trends and patterns

N.E. Williamson

Program Evaluation Division, Family Health International, Research Triangle Park, NC (U.S.A.)

Introduction

This paper gives a brief overview of the worldwide situation with respect to breastfeeding trends and patterns, based primarily on the work of demographers. It begins with a few comments on problems of studying breastfeeding, reviews the situation in developing as well as developed countries, and ends with a few recommendations.

But first, why does anyone care what is happening to breastfeeding? Most people around the world give breastfeeding scarcely a thought. However, it turns out that breastfeeding is of great significance to human welfare. Breast milk provides the ideal food for most infants. It is tailored to the infant's needs in both quantity and quality. It provides protection from infection. It saves the family money and saves countries foreign exchange they would need to import infant formula. And breastfeeding contributes to the bond between mother and child.

Breastfeeding also confers a significant amount of child spacing in the months after the baby's birth, especially if the mother has not resumed regular menstrual cycles and is fully breastfeeding. Breastfeeding has been called "nature's contraceptive." In many developing countries, the infertility associated with breastfeeding is a major factor keeping children from being born too close together and for keeping family sizes below the biological maximum. The duration of postpartum amenorrhea apparently depends on many factors including breastfeeding patterns (intensity/frequency, intervals between feeds, night feeds), introduction of substitute foods for breast milk, time since delivery, possibly the mother's nutrition, and other factors which we have not discovered.

Although all the facts are not yet in, it appears that the contraceptive effectiveness of breastfeeding for a lactating woman before she resumes menstruation, compares favorably with the effectiveness of most of the temporary methods of family planning (pills, barrier methods, natural family planning) as people actually use them [20].

Hence, if people do not care about what is happening with breastfeeding worldwide, they clearly ought to. Perhaps breastfeeding has suffered from being too uncontroversial. Few people have worried about it until recently and relatively few resources have been spent on either breastfeeding research or breastfeeding promotion.

But before we describe what has been happening with breastfeeding, we must review briefly how one goes about studying breastfeeding.

Measurement issues

How do scientists measure changes in breastfeeding practices? One cannot obtain

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information on breastfeeding from any routine registration system or census. Breastfeeding is essentially a private behavior; but one with very public ramifications.

The best sources of information about breastfeeding behavior and changes in this behavior are household surveys, preferably those which interview nationally representative samples of women rather than women in a single hospital or social group. Better yet than a single survey is a pair or trio of comparable surveys timed 5 or 10 years apart. The Nutrition Unit of the World Health Organization (WHO) in Geneva has recently started to compile and maintain a data bank containing national and local surveys on breastfeeding [22].

It is difficult to get accurate information on breastfeeding [13]. If women are asked about how long they breastfed in the past, they may have forgotten and may round off their answers to "1 year" or "6 months". One reason for such vagueness is that breastfeeding may taper off gradually and may not have a clear ending point. The calendar date when supplemental foods were introduced is also not a very memorable event for many mothers. These recall problems can be solved by studying women prospectively and this has been done. But such studies are slow and expensive.

There are also definitional problems. What do we mean by breastfeeding? Does breastfeeding refer to full breastfeeding (i.e. the baby is receiving no other food or liquid having calorific value other than breast milk) or to partial (or supplemented) breastfeeding? Another important distinction is whether the food given in addition to breast milk is a supplement or a substitute for breast milk. These turn out to be important distinctions when we are trying to understand the contribution breastfeeding makes to child spacing. Until recently, few national surveys distinguished between full and partial breastfeeding.

Even if women are breastfeeding fully, they may employ different styles of breastfeeding. Some women breastfeed frequently at short intervals and sleep with their babies who breastfeed even while their mothers sleep. Other mothers breastfeed on a fixed schedule at relatively infrequent intervals but for long bouts. These are just two of the varying styles of breastfeeding that have proven to be important, especially for the contraceptive effects of breastfeeding.

In order to summarize breastfeeding patterns, demographers use three related concepts:

(i) Prevalence of breastfeeding: the percentage of new mothers who initiate breastfeeding at all.

(ii) Mean (or median) age of the child at weaning: the average duration of breastfeeding for those infants who are breastfed.

(iii) Mean (or median) duration of breastfeeding: this is a function of the other two and includes all infants whether or not they were breastfed.

The median, defined as the middle value if values are ordered from lowest to highest, tends to be a better measure than the mean, the average of all values, since the median is not distorted by extreme values.

Another way to look at durations of breastfeeding is to examine the proportions of women still breastfeeding at different durations (3 months, 6 months, etc.) postpartum. This approach partially mitigates the problem cited before that women may round off the number of months of breastfeeding since it does not average in the reported values. This approach is more sensitive to the differential effects of breastfeeding at different ages postpartum on health and fertility since decreases in breastfeeding in the second year of life probably have a much smaller effect on child spacing than do those which occur in the first year of life.

Demographers must also deal with the problem of censoring. A one-time survey will include women who are still breastfeeding and for whom it is not known how long they will continue. Other women have their breastfeeding prematurely shortened by pregnancy or child death. One way of studying com-

pleted breastfeeding histories is to look at a woman's experience with her previous child (called the "penultimate" child) if she has had more than one living child.

When one looks at changes in breastfeeding behavior using these different measures, one finds that the changes do not all go in the same direction. In Malaysia, for example, one researcher recently found an increase in the prevalence but not in the duration of breastfeeding [4]. In other words, more women started breastfeeding but the overall duration did not improve. But more typically in developing countries, prevalence remains high while the duration begins to shrink.

Now that we have reviewed some of the complications in measuring changes in breastfeeding behavior, we turn to some results on trends and patterns.

Trends in breastfeeding

Only several dozen countries in the world have conducted comparable surveys on nationally representative samples in which information on breastfeeding was collected and is available outside the country. Even if this information has been collected, it may not have been analyzed since only recently have policy makers or researchers become concerned about breastfeeding changes. At best, we have data for only a decade or two; sometimes, the time between surveys is only a few years, hardly long enough to measure a trend. And in many of these countries, little is known about how women are breastfeeding (full vs. partial; on schedule vs. on demand).

However, even with these limitations, we can try to make a few generalizations. Fortunately, in the next few years, the situation will improve when data become available from the Demographic and Health Surveys (DHS) which are collecting detailed information on breastfeeding in about 35 developing countries. Also, we hope that more countries will attempt to pull together data already collected as the interest in breastfeeding increases.

Discussing the situation in developed countries first, both the duration and prevalence of breastfeeding have declined over the past century or more [1,2,23]. The change has been very marked, from the vast majority of children being breastfed to the majority not being breastfed.

But in the last two decades, there has been an upturn documented in developed countries such as Canada, the United States, Sweden and the U.K. [5,6,8]. Sometimes, improvements have been documented over a very short period of time [5,6]. The data in Fig. 1 show increases in breastfeeding in the United States during the period 1973—1975 among

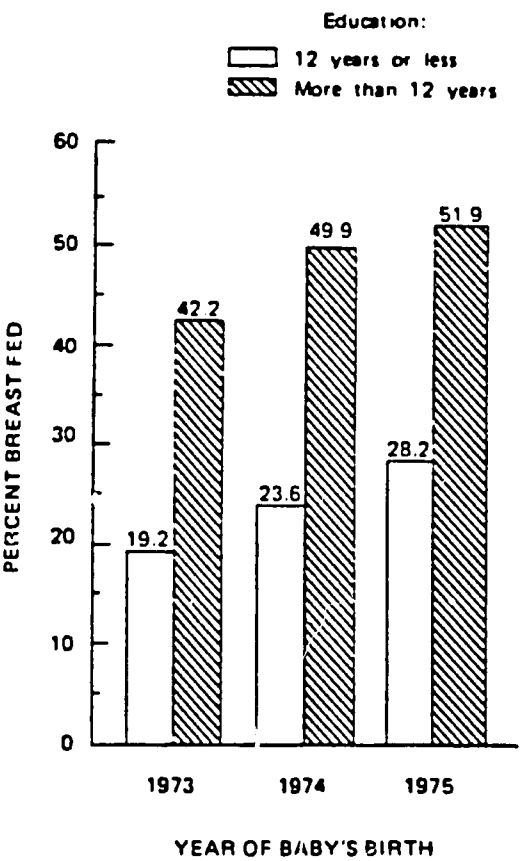

Fig. 1. Percent of babies who were breastfed, by year of baby's birth and mother's education: United States, 1973—1975 (From Ref. 6).

those with fewer than 12 years of schooling as well as among those with more education.

However, even if the prevalence increased, average durations remain short by historical standards, usually under 6 months and most often only 2—3 months. But even short breastfeeding should not be discounted since it confers some immunological protection, a sound nutritional start, and bonding between mother and child. However, such short durations confer little contraceptive protection.

In developing countries, there have also been declines in breastfeeding, particularly in urban areas and in certain regions like Latin America [10,19]. But one can also find countries where breastfeeding has not changed in recent years and some countries in which it has increased. Table I, based on a

Table I. Changes in breastfeeding patterns in 18 developing countries.

A. Countries showing increases in breastfeeding

Costa Rica (1976—1981): Moderate increase in mean duration of breastfeeding in both rural and urban areas

Guatemala (1978—1983): Small increase in mean duration of breastfeeding in all three regions of Guatemala

Singapore (1950—1980): Dramatic decrease in % of women delivering at selected hospitals and breastfeeding children until 1971 and then sharp increase by 1976, especially for upper class

See also entries for Malaysia and Thailand

B. Countries showing little change in breastfeeding

Colombia (1976—1980): Similar % ever breastfed; slight increase in mean age at weaning for those ever breastfed; similar mean duration of breastfeeding

Dominican Republic (1975—1983): Little change in % ever breastfed; little change in mean age at weaning; little change in mean duration of breastfeeding

Jamaica (1975—1983): Slight increase in % ever breastfed; larger increase in mean age at weaning and mean duration of breastfeeding

Jordan (1976—1983): Slight increase in mean duration of breastfeeding in urban, no change in rural

Morocco (1981—1983/84): Slight increase in % ever breastfed; slight decrease in mean age at weaning; slight decrease in mean duration of breastfeeding in rural area, no change in urban area. (Note: this is only a short period to assess change)

Philippines (1973—1983): Some decrease in % ever breastfed but an increase in mean age at weaning; result was little change in mean duration with constant urban/rural differential

Sri Lanka (1975—1982): Slight increase in % ever breastfed but breastfeeding was almost universal to begin with; slight decrease in mean age at weaning; constant mean duration

Mexico (1976—1979): Little change in either the % ever breastfed or % breastfed at 3, 6, 12 and 18 months

C. Countries showing decreases in breastfeeding

Taiwan (1967—1968 to 1985): In both urban and rural areas, marked decreases in mean duration of breastfeeding, proportion ever breastfed and mean age at weaning for those children ever breastfed

Haiti (1977—1983): Some decrease in mean age at weaning in rural areas but not in urban areas; mean duration of breastfeeding is still high for Latin America/Caribbean, 17 months

Pakistan (1975—1979/80): No change in % ever breastfed; decrease in mean age at weaning and mean duration with more decrease in urban areas

Thailand (1969—1979): Clear decrease in mean age of child at weaning in both rural and urban areas during this decade. However, between 1981 and 1984, a slight upturn has been documented [12] for the median duration of breastfeeding, reflecting an increase in urban areas. A very large urban/rural differential (4.3 months vs. 17.1 months median duration) persists

Panama (1976—1979): Slight decrease in % of women breastfeeding with more decrease in the rural than the urban areas

S. Korea (1950—1970): Slight decrease in % of women who breastfed more than 9 or 12 months; marked decrease of those breastfeeding 18 or 24 months

Malaysia (before 1950 vs. 1970 or later): Decrease in % breastfed and in mean duration. More recent evidence of an upturn in % breastfed (with biggest increase in Indian-origin population)

paper by Millman [14], classifies 18 developing countries by whether breastfeeding has recently decreased, increased, or remained constant. Developing countries such as Singapore, Malaysia and Thailand [11,12] experienced decreases but have recently seen an upturn. (Since the upturns have been very recent, the latter two countries are still in the decrease category in Table I).

The important point is that there is no inevitable pattern of steady and irreversible decline in breastfeeding duration and incidence. There are examples in both the developing and developed world of improvements in breastfeeding practices, sometimes occurring in a short period of time.

In some settings, the upturns may be associated with breastfeeding promotion efforts. In others, they may be due to declining economic conditions which prevent women from buying infant foods. As far as we know, little research has been done on this.

A WHO paper [21] postulated that changes in breastfeeding are part of the development transition and cultural diffusion. Thus, typically almost all women in traditional societies breastfeed. Then, as modernization occurs, the educated elite find it more convenient and more modern to start bottlefeeding. This practice gradually works its way down the social structure until even poor and rural women reduce breastfeeding. Then educated women gradually learn that breastfeeding is superior and take up the practice again. And eventually, breastfeeding spreads to the middle class and poor.

In general, this process does seem to be happening. Only Sweden has made the complete transition to a highly modernized country where women of all social classes now breastfeed although for not as long as in traditional societies.

Although this process is going on, there is nothing inevitable about it. Some countries may go through the transition faster than others. It may also be possible to maintain moderate durations of breastfeeding in all social classes by enlightened social policies, including hospital practices that allow "rooming in" (i.e. the baby stays next to the mother) and discouragement of supplementation and bottles.

It would be very unfortunate if all developing countries have to go through this prolonged (and futile) process of reducing breastfeeding from one social class to another — only to end up at the same end point where they started (i.e. all women breastfeeding). Now that we know that giving up breastfeeding is misguided, there is no logical reason for developing countries to pass through a transition that causes considerable misery, particularly among the poor, through higher infant mortality and morbidity, shortened child spacing intervals, and higher fertility than couples would otherwise have.

Although international organizations like WHO and UNICEF have been promoting breastfeeding and many countries are beginning to do likewise, relatively few resources have been spent on breastfeeding promotion. Perhaps one explanation for this (besides the fact that people take breastfeeding for granted) is that some development experts may believe that breastfeeding inevitably declines with modernization and that there is little that can be done to halt the slide.

There is still some uncertainty whether active breastfeeding promotion programs will be able to dramatically change breastfeeding behavior, partly because few countries have tried to do this, the programs are quite recent, or they have not been evaluated. However, recent papers reviewing the results to date [7,9] present evidence that many breastfeeding promotion programs have had at least a short-term impact. Some small hospital-based breastfeeding promotion programs have increased the prevalence of breastfeeding. But it is harder to assess their long-term impact on duration. We need to carefully evaluate the impact of such programs and to experiment with ways to increase cost-effectiveness.

In any case, we do know that breastfeeding does not inevitably and irreversibly go down since some countries have not experienced

declines recently while others have had upturns. This is the important point.

Patterns of breastfeeding

How do breastfeeding practices differ by social characteristics? The answer to this question is complicated [3,14,15]. But we will limit ourselves to only four factors: urban/rural residence, education, ethnic groups and region of the world.

In most countries, especially developing countries, rural women breastfeed longer than urban women. This pattern is very widespread, often dramatic, and has probably persisted for decades.

The pattern by education varies in developed and developing countries. In a country like the United States, better educated women are more likely to breastfeed than poorly educated women. But in developing countries, it is usually the reverse: better educated women are less likely to breastfeed and if they do, for a shorter time. In a study in Indonesia [18] on breastfeeding practices of hospitals, it was found that better educated women were more likely to say that breastfeeding in public embarassed them. This may be one important reason why they are less likely to breastfeed. But there are many other factors including working patterns, availability of household helpers, beliefs about what's best for the babies, clothing styles, and simply fashion. In some times and places breastfeeding somehow becomes unfashionable among both health professionals and mothers.

It is not simply a matter of convenience (e.g. that women breastfeed more if they are at home). In the United States, precipitous declines in breastfeeding have occurred among women who have never worked outside the home, while women who have had jobs as professionals or managers have a higher prevalence of breastfeeding. In the modern world, women's beliefs about breastfeeding matter (and probably so do the beliefs held by their husband, friends and relatives).

In any case, in developing countries, better educated women are often less likely to breastfeed, breastfeed for shorter periods, and supplement earlier. Hence, they get less contraceptive effect from breastfeeding.

In some countries, there are pronounced ethnic differences in breastfeeding practices. A few examples will suffice. In Latin America, women of Indian origin breastfeed longer than women of mixed or Spanish origin. In the United States, white women breastfeed longer than black women. And in Malaysia, Malays breastfeed longer than Indian- or Chinese-origin Malaysians.

The pattern by region of the world is fairly clear cut [10,15]. Women in Africa, the Middle East and South Asia breastfeed the longest, often 18—24 months. Women in South East Asia breastfeed moderately long (6—18 months) while women in Latin America have shorter durations (usually less than a year). Women in Europe and the United States breastfeed the shortest: usually fewer than 6 months. Of course, within each region, one finds differences by urban and rural residence and by education as well as other factors.

Discussion

We have briefly described the present situation. What would be the ideal situation? This is harder to say but gradually a consensus is building that child spacing and child survival would be fostered if: (i) all women receive, prenatally and right after delivery, practical instruction on how to deal with potential problems they may encounter during breastfeeding; (ii) hospital staff and other birth attendants actively promote breastfeeding at the time of birth (including offering rooming in and encouraging mothers to breastfeed very soon after birth and giving babies the colostrum); (iii) women are encouraged to breastfeed fully for as long as the child continues to thrive and for at least for 4—6 months; and (iv) if a woman does not want another child immediately and does not want to use another family planning method, that

she breastfeeds intensively and starts another method when she begins to supplement or when she menstruates, whichever comes first.

The current situation is far from ideal. Most women in developed countries breastfeed only a short time or not at all. The same is true for well educated women in some developing countries. And even when women do breastfeed, they often introduce unnecessary supplements too early, possibly introducing a source of infection and diminishing the contraceptive effect of breastfeeding.

Recommendations

Breastfeeding research

More information is needed on breastfeeding trends and patterns for more countries and over longer time periods. More detail is needed on breastfeeding behaviors (especially supplementation patterns, bottlefeeding, night feeds, etc.), since these factors affect child spacing and child survival. The Demographic and Health Surveys will be making a contribution here in the next few years.

More information should be collected to determine optimal supplementation patterns, both from the viewpoint of child nutrition and child spacing. In some settings (e.g. Bangladesh, sub-Saharan Africa), supplements may be introduced too late. But in most settings they are probably started too early. Early supplements are sometimes given at the urging of pediatricians who recommend supplementing by 2 months.

We need to know more about the contraceptive effectiveness of breastfeeding compared to other methods and more about when and which family planning methods are appropriate during breastfeeding. A major study is going on at Family Health International and the International Institute for Studies in Natural Family Planning to determine how well breastfeeding women can identify natural family planning (NFP) fertile signs and symptoms.

Breastfeeding promotion

Findings on breastfeeding trends and patterns should be disseminated widely so that development experts become aware that breastfeeding does not inevitably decline as countries develop.

More resources should be devoted to breastfeeding promotion including projects which include careful evaluations of the effectiveness of different approaches to improve breastfeeding practices.

Breastfeeding promotion can be integrated into many kinds of development programs: maternal and child health, family planning, literacy education, and church-affiliated family life education, to mention only a few. There is much room for improvement in hospital practices toward breastfeeding and improved attitudes among health personnel [16]. It is still not unusual for infants to be separated from their mothers at birth, kept in a nursery, brought to the mother only on a schedule, and given bottled glucose feeds in the nursery.

Breastfeeding promotion programs should offer support for women and practical advice on how they can handle problems in breastfeeding and how they can integrate breastfeeding into the other important activities in their lives, including outside work and commuting within urban areas. Breastfeeding should not be romanticized or oversold (i.e. telling mothers that their children will have no health problems if the mothers breastfeed). Promotion programs also should not make women feel terribly guilty if they cannot breastfeed.

Breastfeeding promotion programs must also be evaluated. Existing information on the effectiveness of most breastfeeding programs is anecdotal. We need to understand the overall impact of promotion programs and the relative effectiveness of selected components.

Conclusion

Too long has breastfeeding been taken for granted. Both in the past and even now, it has made a fundamental contribution to child

survival and child spacing. Yet, recently, trends in urbanization, women's education, and modernization have led to declines, particularly in the duration of breastfeeding.

However, the changes are by no means inevitable and the trend in breastfeeding is not always downward. Most women want to do the best for their children. What they lack is information on the benefits of breastfeeding, encouragement before and after delivery, practical advice, and the opportunity to integrate breastfeeding into their modern lives. These problems are amenable to solution if those concerned with development, maternal and child welfare, and family life turn their attention to the problem. Breastfeeding is uncontroversial and diverse groups ought to be able to agree on the need for its promotion. There is really no excuse for delay once policy makers and health professionals realize the many reasons for protecting and promoting breastfeeding.

References

1 Brown RE: Breastfeeding trends. Am J Public Health *76:* 238, 1986.

2 Cunningham A: Breastfeeding and morbidity in industrialized countries: an update. *In* Advances in International Maternal and Child Health (eds D Jeliffe, EFP Jeliffe), p 128. Oxford University Press, New York, 1981.

3 Ferry B, Smith DP: Breastfeeding Differentials. Comparative Studies No. 23. International Statistical Institute and World Fertility Survey, 1983.

4 Haaga JG: Evidence of a reversal of the breastfeeding decline in peninsular Malaysia. Am J Public Health *76:* 245, 1986.

5 Hendershot GE: Trends in breast feeding [in the U.S.]. Advance Data, No 59, p 1, National Center for Health Statistics, 1980.

6 Hendershot GE: Trends and differentials in breast feeding in the United States, 1970—1975. Working Paper Series, National Center for Health Statistics, 1981.

7 Huffman SL, Combest C: Promotion of breastfeeding: yes, it works! Center to Prevent Childhood Malnutrition, Bethesda, 1988.

8 International Breast-feeding Compendium, 3rd edn, Ross Laboratories.

9 International Nutrition Communication Service: A retrospective and prospective look at international breastfeeding promotion programs. INCS, Boston, 1985.

10 Kent MM: Breast-feeding in the developing world: current patterns and implications for future trends. Reports on the World Fertility Survey, Population Reference Bureau, 1981.

11 Knodel J, Debavalya N: Breastfeeding in Thailand: trends and differentials, 1969—79. Stud Fam Plann *11:* 355, 1980.

12 Knodel J, Kamnuansilpa P, Chamratrithirong A: Infant feeding practices, postpartum amenorrhea, and contraceptive use in Thailand. Stud Fam Plann *16:* 302, 1985.

13 Lesthaeghe R: Lactation and lactation-related variables. Contraception and fertility: an overview of data problems and world trends. Int J Gynecol Obstet *25* (Suppl): 143, 1987.

14 Millman S: Breastfeeding trends in eighteen developing countries. Unpublished paper available from Dept of Sociology, Brown University, Providence, RI, USA, 1987.

15 Pokin BM, Bilsborrow RE, Akin JS: Breast-feeding patterns in low income countries. Science *218:* 1088, 1982.

16 Potter JE, Mojarro O, Nunez L: The influence of maternal health care on the prevalence and duration of breastfeeding in rural Mexico. Stud Fam Plann *18:* 309, 1987.

17 Tatiz LS: Breast feeding trends in Sheffield, 1976—82. Br Med J *287:* 648, 1983.

18 Thapa S: Breastfeeding policies in Indonesia, in preparation, 1989.

19 Williams L: WFS reports confirm changes in Asian breast-feeding patterns. INTERCOM, Population Reference Bureau, 1979.

20 Williamson NE: Breastfeeding women and family planning programs: special needs and opportunities. Asian Pac Popul Forum *1:* 1, 1987.

21 World Health Organization: The prevalence and duration of breast-feeding: a critical review of available information. World Health Stat Q *35:* 92, 1982.

22 World Health Organization: Breast-feeding data bank. Nutrition Unit, World Health Organization, Geneva, 1987.

23 Wray JD: Maternal nutrition, breast-feeding and infant survival. *In* Nutrition and Human Reproduction (ed WH Mosley), p 197. Plenum Press, New York, 1977.