PNAAP 924/62

Inv: 34431

INFANT FEEDING: THREE QUESTIONS AND A CAVEAT

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179-5

June 1981

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The Rand Corporation
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- Why don't women who breastfeed little breastfeed more, and why don't some women breastfeed at all?
- What do mothers feed their infants when infant formula is unavailable or they are unaware of its availability?
- Has changing biomedical knowledge about breastfeeding's results affected trends in breastfeeding?

The first two questions encompass much of the knowledge required for designing effective policies and programs to improve infant feeding in less developed countries. The third question may be important in understanding the recent resurgence of breastfeeding in the U.S. and Europe; its answer may also offer hope for reversing breastfeeding declines in less developed countries.

Why don't women who breastfeed little breastfeed more, and why don't some women breastfeed at all?

Many investigators have asked mothers this question. Because mothers infrequently mention the need or desire to take a job, some investigators conclude that employment is not an important influence on breastfeeding. They might as well conclude that formula merchandising, hospital delivery practices, and emotional support from relatives and friends are unimportant: interviewed mothers rarely mention these either. Instead, most responses typically blame lack of milk, child's disinterest, or other amorphous factors that some analysts collectively call the "milk insufficiency syndrome." Can we design interview sequences that tap the actual underlying reasons more precisely? I doubt it.

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*These informal notes were prepared for the Workshop on Determinants of Initiation and Duration of Infant Feeding, Chantilly, VA, June 1981, sponsored by the National Institute of Child Health and Human Development, NIH. Under Grant No. AID/otr-1822 to Rand, the Agency for International Development sponsored research from which these notes are drawn. They reflect many conversations with Julie DaVanzo, Dennis DeTray, Jean-Pierre Habicht and Arleen Leibowitz, but the reflection is far from perfect.

Many factors typically influence a mother's breastfeeding pattern. It would seem rare that one or two factors are so dominant, hence so salient in a woman's thoughts, that interview questions about attitudes and perceptions can partition them out.

If this is the case, two research implications follow. One is that we should stop citing these survey answers as evidence that factor X is not an important influence on breastfeeding (the latest practitioners of this fallacy are Van Esterik and Greiner in *Studies in Family Planning*, Vol. 12, No. 4, April 1981). The other is that we will have to turn to less direct, multivariate statistical methods to identify characteristics and activities of infants, mothers, families, health care institutions and communities which are associated with very early weaning. This is harder work and it requires more data. As a reward, these methods can identify characteristics of mothers, institutions and communities that place a child at elevated risk of short or no breastfeeding. Screening profiles built from these characteristics can then find the cases most likely to benefit from intervention.

As another reward, the methods can identify, as potential interventions, particular environmental factors that are associated in the data with short breastfeeding. Since causality cannot usually be demonstrated with these methods, direct policy intervention is not usually indicated. However, multivariate analyses can point to specific factors, out of the myriad possible, that are likely to cause short breastfeeding. Focused field investigations can then select the ones with causal relationships, the ones on which interventions should be targeted.

What Do Mothers Feed Their Infants When Infant Formula is Unavailable or They are Unaware of its Availability?

A widespread faith asserts that women without access to infant formula will breastfeed. With rice water widely available in Southeast Asia; corn starch and sugar water in Latin America; evaporated milk in the Caribbean, U.S. and Europe; mashed cassava in Africa; and water, tea, coffee and soft drinks nearly everywhere, this faith may not be justified. Virtually nothing is known about what women who have been feeding formula do when the formula or associated bottles become less available. If they breastfeed more, most babies presumably benefit. If they instead feed one of these inferior substitutes instead of formula, the babies presumably suffer. Anthropological

investigations of infant feeding behavior among populations experiencing breastfeeding declines are critically needed. Likewise, epidemiological and nutritional investigations of the morbidity and mortality consequences of alternative infant feeding patterns are required. Combining these, we can formulate policy and program approaches that encourage breastfeeding, rather than encourage other substitutes for infant formula that are much less desirable than either.

Has Changing Biomedical Knowledge About Breastfeeding's Results Affected Trends in Breastfeeding?

Until at least the late 1930s, breastfeeding was probably thought by most mothers and pediatricians in the U.S. to be superior to alternative foods for infants. By the early 1950s at the latest, most mothers and pediatricians probably considered the available infant formulas to be as good as, if not better than, breastfeeding. In the late 1960s, medical and nutritional research began scientifically documenting the immunologic, anti-allergic, psychological and nutritional advantages of breastfeeding for the baby, compared even with modern formulas. Increasing numbers of mothers and pediatricians were aware of these findings during the 1970s. These three periods--before the 1930s, the 1930s through the 1960s, and the 1970s--correspond roughly to the periods of high, declining, and now rising breastfeeding among American women.

Similarly, biomedical evidence that suckling in lactation lengthens the postpartum anovulatory period, hence the interval between births, began accumulating in the late 1960s and was firm by the early 1970s. Knowledge of the scientific basis for this relationship among Ob-Gyns and mothers was apparently widespread in the U.S. by the mid-1970s. Breastfeeding activity began rising in the early 1970s. Desired family size of American couples began falling a decade earlier, accompanied by rising use of other contraceptive methods.

Indeed, examination of the pediatric and gynocological textbooks and journals and of the underlying scientific literature shows little reason why a mother would have wanted, or should have been advised, to breastfeed in the 1940s, 50s and 60s. The scientific evidence that breastfeeding provides a superior infant food and a natural contraceptive was only established in the late 1960s. It is intriguing that the decade which followed has seen a broad breastfeeding resurgence in the United States and part of Western Europe, after declines since 1930 or earlier.

Are these historical correspondences causal? Surveys can be designed to test the proposition. If supported, it would suggest that declining breastfeeding in the Third World might soon turn around as this new knowledge spreads to health personnel and mothers. Events there might mirror events here with a lag: traditionally, mothers breastfeed (pre1930s in the U.S., pre1960s in developing countries). They turn from it under a variety of pressures and incentives that accompany modernization and development (1930s to 1960s in U.S., 1960s and 1970s in developing countries). Then new evidence indicating breastfeeding's advantages spreads (1970s in U.S., 1980s (?) in developing countries), and many women return to it despite the pressures.

This scenario may be a fantasy. But if real, its implications for policies and programs in the Third World are important. Economists and sociologists have studied similar diffusion processes in other areas; application of their techniques here might be useful for designing information interventions in less developed countries.

It would be useful to study, first, the process of dissemination of this new scientific knowledge through the primary scientific literature, then to the literature physicians read, and, most importantly, to mothers. Finally, it is important to estimate the extent to which the breastfeeding resurgence in the U.S. and Europe is being caused by this new scientific information and its diffusion.

A Caveat

Unless we can persuade mothers themselves to tell us what the truly critical influences were on their actual breastfeeding patterns, we shall have to force the information out of data describing these mothers, their infants and families, their health care providers and their communities. Although some "social experimentation" might be both possible and ethical in this area, the instrument of force must usually be multivariate statistical analysis. Many pitfalls attend these techniques, including the inference of causality from statistical association. The example I have particularly in mind concerns the relationships between health personnel's attitudes and advice, and hospital delivery procedures, on the one hand, and breastfeeding on the other. Presumably, mothers who want to breastfeed seek out health personnel who they hear will help them, and hospitals

or clinics whose procedures allow or even facilitate breastfeeding. Data that show statistically significant associations between breastfeeding and these other factors do not on that account indicate that changing physicians' or midwives' knowledge or changing hospital or clinic procedures will have the effect of increasing breastfeeding. It may be that only changing the attitudes and desires of mothers will accomplish this, with the other factors adjusting passively. Statistical methods are available and in common use that can investigate relationships that are "jointly endogenous" like this. Ordinary least squares, analysis of variance, and path-analytic techniques cannot.