

FACTORS DETERMINING THE SUSPENSION OF BREAST-FEEDING IN AN URBAN POPULATION GROUP¹

Héctor Avila,² Pedro Arroyo,³ Deyanira García,² Francisco Huerta, Rodrigo Díaz,⁴ and Esther Casanueva⁵

This article reports findings from a retrospective survey of breast-feeding patterns in a socioeconomically homogeneous sample of mothers visiting Mexican outpatient clinics. The findings suggest that in many cases premature suspension of breast-feeding was related to use of methods incompatible with good breast-feeding practice.

Introduction

The economic, nutritional, and immunological advantages of breast-feeding have been fully documented (1-3). It is therefore significant that a trend toward abandonment or curtailment of this practice has been noted among some populations in industrialized areas. With regard to the factors that directly determine or modify a mother's decision to breast-feed her child, however, information is still scarce.

The purpose of the retrospective study reported here is to explore some variables associated with different patterns of breast-feeding in a primarily industrial urban community affiliated with a social security institution. More specifically, its purpose is to examine the reasons given by mothers for not practicing breast-feeding, or for terminating breast-feeding after shorter or longer periods of time.

Materials and Methods

The investigation was carried out during mornings of May and June 1975 at four clinics of the Mexican Social Security Institute (IMSS). Two of these clinics were located in the northern part of the predominantly industrial metropolitan area of the Federal District; the third was in the eastern area; and the fourth was in the central region.

Mothers attending the outpatient departments of these clinics were interviewed. The mothers included in the study met the following admission criteria: (1) in the three years before the investigation each had given birth to just one live infant; (2) each had an IMSS number (this was needed in order to facilitate obtaining the family's IMSS fee bracket, which is an indicator of worker wage-earnings); and (3) none was practicing breast-feeding at the time.

A pre-coded form, previously evaluated in a pilot study (4), was used in the investigation. It contained the following data: (a) duration of breast-feeding and the reasons given for avoiding or suspending it; (b) the month when feeding with cow's milk began, who suggested it, and where and when the milk was purchased; (c) the time and type of weaning; (d) the child's year of birth, schooling information, and the parity of the mother; and (e)

¹Also published in Spanish in the *Boletín de la Oficina Sanitaria Panamericana* 84(5):383-390, 1978.

²Residents, Human Ecology Section, Basic Research Unit, Mexican Social Security Institute (IMSS), Mexico.

³Chief, Human Ecology Section, Basic Research Unit, IMSS.

⁴Former Research Worker, Department of Public Health Research, IMSS.

⁵Volunteer Assistant, Human Ecology Section, Basic Research Unit, IMSS.

the nature and category of work done by the parents.

First-year nursing school students were engaged to process the completed forms. The students were organized into groups of five to ten members, each group being trained and supervised by one of the investigators. These investigators reviewed each questionnaire to detect possible errors, after which the data obtained were transferred to punch cards and subjected to an automated screening process. In this manner about 10 per cent of the initially registered subjects were eliminated from the study. This left a total of 2,520 cases and a reliability—in terms of the initial criteria—of about 99 per cent.

Results

To analyze the data the publication *Statistical Package for the Social Sciences (5)* was employed, and the mothers were divided into two large groups: those who had breast-fed their infants for at least a month (1,959 mothers or 77.7 per cent) and those who had not (561 mothers or 22.3 per cent). The description of the general characteristics of the mothers studied included these two patterns of breast-feeding, but did not deal with variable characteristics that were found to change with the type of feeding involved.

Maternal Age

The mothers ranged in age from 15 to 48 years. Of four age groups considered (Table 1), the largest consisted of mothers 15-24 years of age and accounted for 41.5 per cent of the subjects studied. The proportion of breast-feeding mothers was similar in all age groups except the oldest (36-48 years), in which a relatively large proportion of women (31.8 per cent) did not breast-feed their infants a month or more. As Table 1 indicates, however, the younger women showed a tendency to practice breast-feeding for shorter periods than did the older women. Observing the column totals, it can also be seen that the

figures on duration of breast-feeding arranged themselves into a Poisson-type distribution, with short durations predominating.

Family Occupations

In 56.1 per cent of the cases the child's father was a laborer; in 19.5 per cent he performed domestic service activities; and in 15.9 per cent he held a commercial or administrative position. Of the mothers studied, 22.5 per cent did remunerative work. About a third of these were laborers, roughly another third worked as sales clerks, secretaries, etc., and the remaining third were engaged in other occupations. No significant differences in breast-feeding patterns were related to different parental occupations or salaries. Overall, 87.5 per cent of the insured subjects involved were earning between US\$4 and US\$8 per day (US\$1 = 12.5 Mexican pesos).

Literacy

Of the mothers studied, 9.7 per cent were illiterate; 67.5 per cent had completed primary school or received some primary education; 18 per cent had attended secondary school; and 4.8 per cent had attended college or pursued higher studies. Interestingly, breast-feeding was found to be less common among women in the most educated category than it was among their less-educated counterparts, the respective percentages not practicing breast-feeding being 32 and 22 per cent.

Duration of Breast-feeding

To analyze factors relating to the suspension of breast-feeding, the mothers who had practiced breast-feeding (i.e., had practiced it for a month or more) were divided into two groups: Those who had fed their infants from the breast for 1 to 3 months, and those who had continued to do so for 4 months or more. This classification took into account

Table 1. Numbers and percentages of the mothers studied who practiced breast-feeding for particular lengths of time, by age group.

Maternal age groups	Duration of breast-feeding (months)											
	1 month		2-3 months		4-5 months		6-9 months		≥ 10 months		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
15-25 years	242	29.4	238	28.9	76	9.2	152	18.5	115	14.0	823	100.0
26-30 years	141	24.6	141	24.6	57	9.9	110	19.2	125	21.8	574	100.0
31-35 years	70	21.1	76	22.9	37	11.1	62	18.7	87	26.2	332	100.0
36-48 years	44	20.1	49	22.4	29	13.2	40	18.3	57	26.0	219	100.0
Total	497	25.5	504	25.9	199	10.2	364	18.7	384	19.7	1,948*	100.0

*Number of cases not observed = 11.

the study group's distribution with respect to duration of breast-feeding. Table 2 lists the mothers in the non-breast-feeding and two breast-feeding categories according to their stated reasons for avoiding or suspending breast-feeding. In 1,061 cases (42.7 per cent of the total) the mothers cited a lack or insufficiency of milk; half of the mothers citing this cause breast-fed their infants but did so for only 1-3 months. Other common reasons given for early suspension of breast-feeding were that the child did not accept the breast or hurt it; breast infection or maternal illness; sickness of the child; and job difficulties.

Mothers who did not practice breast-feeding frequently cited absent or insufficient milk, sickness of the child, and breast infection or maternal illness as the reason for their decision. On the other hand, mothers who practiced breast-feeding for more than 3 months, besides citing absent or insufficient milk, tended to cite growth of the child, rejection of the breast by the child, or another pregnancy as the reason for ending the practice.

Table 3 relates the duration of breast-feeding to the person who suggested that another kind of milk be used. In 1,880 cases (75.5 per cent of the total), the physician recommended an artificial substitute. Such physician influence was especially marked in the case of mothers who did not breast-feed or who did so for 3 months or less. On the

other hand, in the case of prolonged feeding (4 months or more), the decision to substitute another kind of milk was more often made by the mother herself.

Introduction of Artificial Feeding

Table 4 relates the type of milk substitute introduced to the duration of breast-feeding involved. Powdered milk was used in 1,868 cases (75.0 per cent of the total), and was especially favored when breast-feeding was not practiced or was practiced for 3 months or less. Though powdered milk still predominated, other types of milk (fresh, evaporated, or condensed) were used more often by mothers who breast-fed their infants 4 months or more. In 1,240 cases (49.8 per cent), including half of the cases where breast-feeding was of short duration, the substitute milk was provided by the IMSS.

Table 5 shows that in 662 cases (34.2 per cent of the cases where breast-feeding was practiced) some kind of substitute milk was introduced before breast-feeding ended. Though breast-feeding proceeded 4 months or more in most of these cases, in 22.8 per cent a substitute was introduced before suspension of breast-feeding and the breast-feeding was of short duration. No significant relationship was observed between the breast-feeding patterns studied and the introduction of foods other than milk.

Table 2. Reasons given by mothers for avoiding or terminating breast-feeding, showing the numbers and percentages of mothers grouped according to the length of time that breast-feeding was practiced.

Reason for avoiding or suspending breast-feeding	Did not breast-feed 1 month		Breast-fed 1-3 months		Breast-fed 4 months or more		Total	
	No.	%	No.	%	No.	%	No.	%
Absence or insufficiency of milk	240	22.6	531	50.0	290	27.3	1,061	100.0
Child rejected or hurt the breast	58	18.9	137	44.6	112	36.5	307	100.0
Sickness of the child	105	39.8	86	32.6	73	27.6	264	100.0
Breast infection or maternal illness	80	34.0	96	40.8	59	25.1	235	100.0
The child has become large	—	—	2	0.9	210	99.1	212	100.0
Employment difficulties	26	20.3	76	59.4	26	20.3	128	100.0
New pregnancy	—	—	11	10.0	99	90.0	110	100.0
Medical advice	11	15.5	26	36.6	34	47.9	71	100.0
Other reasons	30	31.6	29	30.5	36	37.9	95	100.0
Total	550	22.2	994	40.0	939	37.8	2,483*	100.0

*No reason was given in 37 cases.

Table 3. Parties (the mother, physician, or others) who suggested introduction of a milk substitute, showing the numbers and percentages of mothers affected and the duration of breast-feeding involved.

Party suggesting introduction of a milk substitute	Did not breast-feed 1 month		Breast-fed 1-3 months		Breast-fed 4 months or more		Total	
	No.	%	No.	%	No.	%	No.	%
Mother	40	9.3	111	25.8	280	65.0	431	100.0
Physician	487	25.9	834	44.4	559	29.7	1,880	100.0
Others	26	14.6	57	32.0	95	53.4	178	100.0
Total	553	22.2	1,002	40.2	934	37.5	2,489*	100.0

*No particular person was cited in 31 cases.

Table 4. The various types of milk substitutes introduced, showing the numbers and percentages of mothers affected and the duration of breast-feeding involved.

Type of milk substitute introduced	Did not breast-feed 1 month		Breast-fed 1-3 months		Breast-fed 4 months or more		Total	
	No.	%	No.	%	No.	%	No.	%
Fresh milk	33	8.5	75	19.4	278	72.0	386	100.0
Evaporated milk	27	14.0	78	40.4	88	45.6	193	100.0
Condensed milk	7	16.7	13	31.0	22	52.4	42	100.0
Powdered milk	486	26.0	836	44.8	546	29.2	1,868	100.0
Total	553	22.2	1,002	40.2	934	37.5	2,489*	100.0

*The type of substitute milk was not specified in 31 cases.

Table 5. When a milk substitute was introduced (before or at the same time as breast-feeding ended), showing the numbers and percentages of mothers and the duration of breast-feeding involved.

Timing of introduction of milk substitute	Breast-fed 1-3 months		Breast-fed 4 months or more		Total	
	No.	%	No.	%	No.	%
Preceded suspension of breast-feeding	151	22.8	511	77.2	662	100.0
Coincided with suspension of breast-feeding	851	66.8	423	33.2	1,274	100.0
Total	1,002	51.8	934	48.2	1,936*	100.0

*Timing was not specified in 23 cases.

Discussion

Though retrospective, this study throws light on the frequency and duration of breast-feeding practiced by an urban wage-earning population that is employed principally in industry and is for the most part relatively homogeneous. The level of the study group's formal education is favorable relative to the overall populations of both Mexico as a whole and the Federal District (6). However, in absolute terms the group's length of schooling and income are both low.

Because of the group's relative homogeneity, no major differences in styles and patterns of breast-feeding were linked to the above-mentioned socioeconomic indicators. Generally speaking, however, it may be said that the tendency not to breast-feed, or to breast-feed for a brief period, was more pronounced among younger mothers and among those with the highest levels of education. This finding may be explained by the so-called modernization processes that occur among urban social groups and that have a particularly marked impact on younger and more educated individuals (7). Various publications (1-3) have pointed out the adverse consequences of this anti-breast-feeding trend from the point of view of nutrition, immunology, psychology, epidemiology, and economics; but few efforts to analyze the

factors causing the trend have been made. The decision to breast-feed is taken, in the last analysis, by the mother; it depends on an array of factors that may be felt compelling at different times and that involve different levels of planning.

Chronologically, both before and during pregnancy the mother is influenced by beliefs, values, and habits concerning breast-feeding that she shares with her family and social group. In particular, it is worth singling out the experience and practical knowledge possessed by other members of the family—experience and knowledge that can strengthen or inhibit a favorable attitude toward breast-feeding. When the mother has been pregnant before, her attitude may be considerably affected by her own past experience, whether negative or positive; thus a mother who has failed with breast-feeding before will probably resist breast-feeding a new child.

A decision to breast-feed is implemented in the immediate postpartum period, a time when various negative factors may impede establishment of sufficient breast stimulation to induce effective secretion of milk. Prominent among these factors are separation of the child from its mother and bottle-feeding of newborns in hospital nurseries. It is likely that a considerable share of the mothers who did not breast-feed—and who cited as the

cause absence of milk, insufficient flow, or rejection of the breast by the child—actually experienced problems obtaining the vigorous and continuing stimulation provided by a hungry infant.

Another aspect of the problem could involve lack of information—on the part of both mothers and health service personnel—about the proper way to achieve alternate and effective emptying of the breasts. This appears indirectly demonstrated by the significant number of mothers who said they did not breast-feed because of breast infection—a condition apt to arise as a result of lacteal stasis.

One final factor of importance was sickness of the child, a factor cited more frequently by non-breast-feeding mothers than by those who successfully initiated breast-feeding.

It is evident that another type of investigation would be required to identify psychological and sociological factors that induce an attitude causing mothers to accept breast-feeding or reject it. But before coping with such factors it is necessary first to eliminate the objective conditions in medical institutions—such as those mentioned above—that interfere with adoption of an adequate technique for initiating breast-feeding (8).

A different problem is how to keep breast-feeding from being suspended prematurely. Again, the most frequently mentioned reason for premature suspension of breast-feeding was a lack or insufficiency of milk. It is difficult to account for this on pathological or nutritional grounds, because over half the mothers involved had these problems. Rather, it is more logical to assume the existence of problems involving breast-feeding technique.

Normal breast-feeding requires effective and frequent sucking by the child. Alternate breast-feeding and bottle-feeding tends to

prevent this. Obviously, the physician plays a very important role in the decision to bottle-feed, since in a large number of cases it was he who advised the introduction of another type of milk. This matter should be analyzed within the context of the institution (the IMSS) with which the study population was affiliated. Under Mexico's Social Security Law, a mother receives a milk allowance for 6 months (9). Approximately half the mothers that practiced breast-feeding for 3 months or less obtained milk from the IMSS. As things stand at present, this milk allowance is undoubtedly of great value; but it would be more useful if the milk were provided as a food supplement for the child after breast-feeding is suspended and not before, except in special cases.

Overall, an exceptionally large number of the mothers who stopped breast-feeding in 3 months or less cited employment problems as the reason. (The end of an insured mother's maternity leave period falls in this time-frame.) On the other hand, mothers who continued breast-feeding 4 months or more made less frequent mention of absent or insufficient milk, and more commonly ascribed suspension of breast-feeding to growth of the child, a new pregnancy, or the advice of a physician.

The results of the present study suggest that the trend toward abandoning or prematurely curtailing breast-feeding should be investigated in socioeconomically homogeneous populations—and that the conditioning factors involved should be analyzed separately at different stages of the investigation process. Only in this way will it be possible to identify in advance the women who are at greatest risk of not practicing breast-feeding or of practicing it for only a short period—information that is needed in order to take specific and effective preventive measures.

ACKNOWLEDGMENTS

The authors wish to thank the IMSS School of Nursing and the authorities of the

institutions where this study was carried out for the support that they provided. They also

wish to thank Mr. Guillermo Reyes Sosa for his assistance in processing the data, Dr. Marcos Arana and Dr. Silvestre Frenk for

their critical review and comments, and Miss Emma Rosa Leroux for her transcription of the manuscript.

SUMMARY

A retrospective survey of breast-feeding patterns was made using a sample of 2,520 mothers visiting outpatient clinics of the Mexican Social Security Institute (IMSS) in the Federal District. These mothers belonged to a population group with relatively little schooling and low income that was predominantly engaged in industrial activities. All had given birth to just one live infant during the 3 years preceding the study. Of these mothers, 22.2 per cent had not breast-fed their infants, 40 per cent had done so for 1 to 3 months, and 37.8 per cent had done so for 4 months or more.

The younger and better-educated mothers showed a tendency to avoid breast-feeding or to practice it a relatively short time. Also, most mothers who had avoided or curtailed breast-feeding attributed this fact to causes that could have

been related to improper breast-feeding technique—factors such as an absence or shortage of milk, breast infections, painful nipples, or rejection of the breast by the child. In general, in the case of mothers who breast-fed their infants for 3 months or less, it was most often the physician who suggested introducing another type of milk—which in most cases was supplied by the social security institution with which the mothers were affiliated. No significant relationship was found between suspension of breast-feeding and introduction of foods other than milk.

These findings suggest a need for further studies that will permit more precise identification of the factors contributing to genesis of the problems observed—and that will provide a basis for taking specific and effective preventive measures.

REFERENCES

- (1) Jelliffe, D., and E. Jelliffe. An overview: Symposium on the uniqueness of human milk. *Am J Clin Nutr* 24:1013-1024, 1971.
- (2) Thomson, A., F. Hytten, and W. Billewicz. The energy cost of human lactation. *Br J Nutr* 24: 565-572, 1970.
- (3) Puffer, R. R., and C. V. Serrano. *Patterns of Mortality in Childhood*. PAHO Scientific Publication 262. Pan American Health Organization, Washington, D.C., 1973, p. 262.
- (4) Arroyo, P., H. Avila, R. Díaz, D. García, and F. Huerta. Análisis preliminar de un encuesta piloto sobre lactancia. *Higiene* 26:178-196, 1976.
- (5) Nie, N., H. Hull, J. Jenkins, K. Steinbrenner, and D. Benet. *Statistical Package for the Social Sciences* (2nd ed.). McGraw-Hill, New York, 1975.
- (6) Secretaría de Industria y Comercio. *IX Censo General de Población (1970)*. Mexico City, 1972.
- (7) Rogers, E., and F. Schoemaker. *La comunicación de innovaciones*. Ed. Herrero, Mexico City, 1974.
- (8) Applebaum, R. The modern management of successful breast feeding. *Pediatr Clin North Am* 17:203-225, 1970.
- (9) *Nueva Ley del Seguro Social* (New Social Security Law). Mexico City, Editorial Purúa Hnos., 1977, Article 102.