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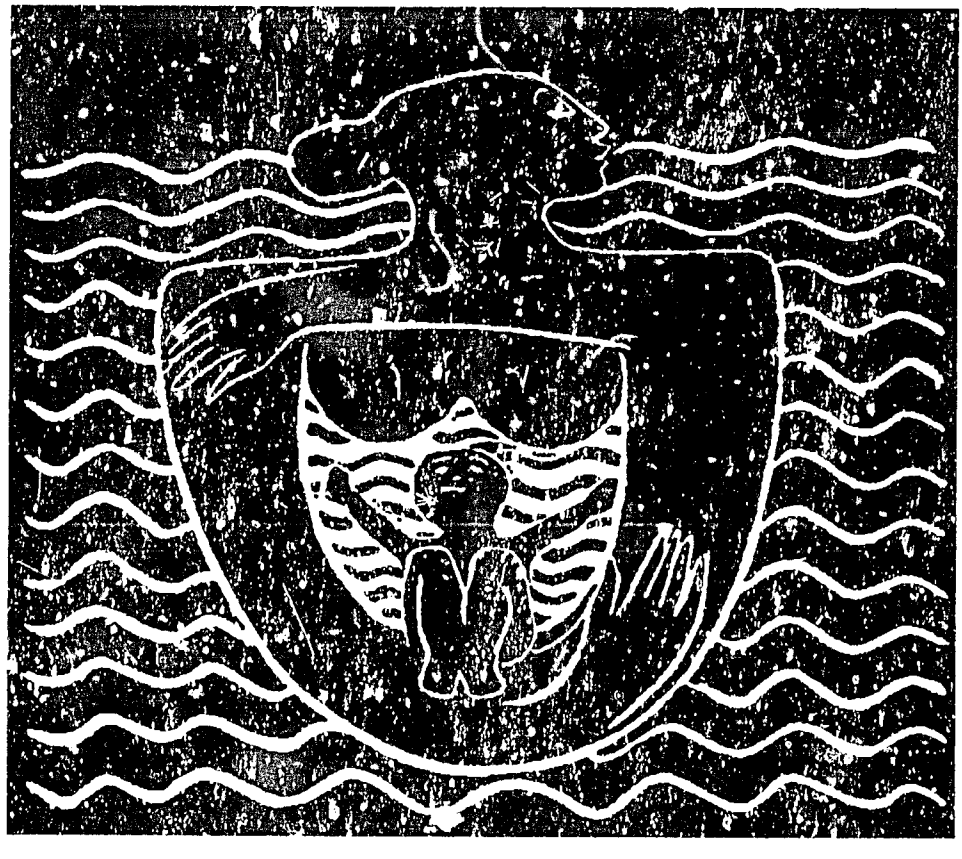
INFANT FEEDING PATTERNS, PRACTICES AND TRENDS

SELECTED ASIA/NEAR EAST COUNTRIES



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SELECTED ASIA/NEAR EAST COUNTRIES

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The USAID Missions in the selected countries contributed much of the materials and information in this document and have helped to ensure better estimates of the current situation of trends and practices.

Information was also obtained from the Clearinghouse on Infant Feeding and Maternal Nutrition of the American Public Health Association, A.I.D. funded bibliographies on breastfeeding and documents from Asia/Near East Bureau projects, the World Health Organization and UNICEF.

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FOREWORD

In reviewing the breastfeeding data included in large country-wide demographic and health surveys, one would conclude that many of the countries in the ANE Region have little or no infant feeding problems in the first 4 to 6 months of life. On closer examination of the sources of this data, however, we can see that the surveys are not reporting rates of exclusive breastfeeding but whether infants are breastfed at all. The data generally say nothing about frequency and duration of breastfeeding, use of colostrum, any milk substitutes used, and when supplementary foods are being introduced.

These factors all have a critical impact on the nutritional status of infants and have been shown to contribute significantly to morbidity and mortality. Discarding colostrum and early supplementation with breastmilk substitutes deprive the newborn of critical nutrients and antibodies that can provide protection against major risks to child survival. Inappropriate feeding practices also jeopardize the mother's milk supply and expose her prematurely to the risk of pregnancy. One of the most cost effective ways to reduce infant mortality and morbidity in the first six months of life is to ensure exclusive breastfeeding with appropriate frequency of feeds.

As countries in the ANE Region move toward modernization, women enter the work force outside the home. The challenge for the 1990's and beyond will be to find ways to enable working women to continue to breastfeed after they return to work.

The purpose of this study is to identify some of the major infant feeding issues that need to be addressed in the design of programs in selected ANE countries. The authors pulled together all of the available research and consulted with most of the USAID HPN officers, as well as other health/nutrition professionals, on the specific content of the individual country sections. This study is not intended to be an exhaustive overview of what we know about breastfeeding and infant feeding in each country, but hopefully, identifies some of the major gaps in information and programs.

Many thanks to all of you who submitted articles, studies, and comments on the draft report. We hope that this study will encourage further consideration of the issues and provide some direction in the design of programs.

Since this is a working document, we would like to update it periodically as new information becomes available. We will continue to depend on you to provide us with these new sources of information and your comments.

Karen J. Nurick
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ACRONYMS

USAID	United States Agency for International Development
WFS	World Fertility Survey
CPS	Contraceptive Prevalence Survey
WHO	World Health Organization
ISTI	International Science and Technology Institute
TBA	Traditional Birth Attendant
KAP	Knowledge, Attitudes and Practice

OVERVIEW OF INFANT FEEDING PRACTICES AND PATTERNS

INTRODUCTION

Breastfeeding is a term which is often bandied about as if it were a homogeneous process or product. The idea that there is a universally traditional form of breastfeeding is naive. From region to region, throughout the ages, mothers have been forced to invent modified forms of breast feeding in order to combine their acute priority for subsistence with childcare.

Scientists, who are often inadvertently ignorant about the actual process of breastfeeding on a practical level, have published numbers which are not only meaningless, but misinformative. This has led to the erroneous conclusion in many countries that the practice of breastfeeding is universal. The general lack of awareness regarding the non-simplistic process of infant feeding in combination with surveys which have ill-defined indicators, have frequently led researchers to confuse initiation (ever breastfed) with the establishment and actual pattern of lactation. Overly optimistic statistics have led both the international health community and various governments to believe that few problems exist with feeding patterns while in reality, the continuing high mortality rates for infants in most countries attest to the fact that the problem is a very serious one. In general, the data from the World Fertility Survey and other national studies is misleading, overly optimistic and not supported by local surveys, as patterns in sub-groups are obscured by the use of indicators such as ever breastfed, not a true measure of prevalence.

When breastfeeding is separated into clearly defined categories, such as exclusive (no supplements of any kind) versus partial (combined breast and bottle or other foods), a vastly different pattern of infant feeding emerges. This was particularly well demonstrated in the study conducted by the Nutrition Foundation of India, which recognized that it takes 15 to 20 days to establish lactation. As recently as 1986, a study conducted by Hanson et al in Lahore, Pakistan, nearly came to false conclusions regarding the immunological properties of breastmilk by initially using a broad definition of breastfeeding. Surprised with the results, they re-analyzed the data and found that in reality ONLY 10% OF MOTHERS WERE BREASTFEEDING EXCLUSIVELY. Most mothers discarded their colostrum and were feeding their infants a wide variety of polluted concoctions. The final results concluded that exclusive breastfeeding gave the maximum protection against infant mortality.

In this review of the Asia/Near East Region we found the trends in breastfeeding are declining both in prevalence and duration.* (Table 1)

The pattern has shifted from exclusive breastfeeding to partial or mixed (breast and bottle-"triple nipple syndrome"), the early introduction of solids (with contamination) and a phenomenon we have labeled "bottling the breast."**

It has been well documented that in most countries, breastfeeding is the infant's primary defense against disease, infections and malnutrition (a "passport to life").

Breastfeeding

- Is an effective method of child spacing
- Lowers the incidence of neonatal mortality as much as 25 times
- Protects the infant against infections and parasites
- Promotes mother/infant bonding
- Provides ideal nutrition for babies and promotes growth and development
- Is a natural resource, both economic and agronomic
- Protects infants against allergies
- Provides important vitamins such as A, E and K, and nutrients such as zinc and iron
- May prevent postpartum hemorrhage
- Lowers the incidence of dental caries
- Protects against hypothermia

*The exception is Papua New Guinea, where bottles, teats and formula have been banned, except by prescription, since 1977.

**Transferring the concepts of formula feeding to the breast. For example, scheduling breastfeeding rather than feeding on-demand, believing it is necessary to "sterilize the breasts," beliefs that breastmilk can "spoil" or become "bad," the same as artificial milk.

IDEAL DEFINITION OF EXCLUSIVE BREASTFEEDING

- BREASTMILK ONLY (no water, juice, semi solids of solids)
- Early initiation (within 1 hour after delivery)
- COLOSTRUM
- DEMAND FEEDING
- FREQUENT FEEDING (6 or more times in 24 hours and night)

In order for breastfeeding to be of maximum benefit for both the infant and the mother, it must be exclusive for at least 4, preferably 6 months. Early supplementation in any form leads to increased mortality/morbidity in the infant, inadequate milk supply and decreased amenorrhea (critical for child spacing).

INFANT FEEDING

National and international authorities recognize that exclusive breastfeeding is vastly superior to any other form of infant feeding during the first 6 months of life. The nutritional, anti-infective (particularly anti-diarrheal) and child spacing effects of breastfeeding, which give the infant the best chance for child survival, are dependent on the duration of exclusive breastfeeding. The behavioral component of breastfeeding, which is of paramount importance, has largely been ignored by the research community.

SOURCES OF DATA ON INFANT FEEDING PRACTICES

International agencies such as WHO, UNICEF and USAID obtain their figures for breastfeeding prevalence and duration from a number of sources. These sources include national studies such as the World Fertility Survey (WFS), the Contraceptive Prevalence Survey (CPS), national nutritional surveys and the WHO Collaborative Breastfeeding Study. Often local studies are used to assist with the determination of estimates.

Table 1

PERCENT OF PAKISTANI MOTHERS BREASTFEEDING ACCORDING TO VARIOUS AUTHORITIES

	at 3 months	at 6 months	at 12 months
UNICEF (1980-1986)	78	73	67
ISTI-1987 (1980-1986)	96	96	90
WESTINGHOUSE (1975-83)	98	96	90

See appendix B for examples of data sources.

This review of infant feeding practices in 16 countries in the Asia/Near East Region* illustrates the paucity of recent studies, in particular longitudinal studies, and a lack of on-site regional assessments. In general, analyses of breastfeeding trends have been based on national representative studies such as the World Fertility Survey, the Contraceptive Prevalence Survey and most recently, the Westinghouse Demographic Household Survey. These studies were designed primarily to answer questions regarding family planning practices, not to gather reliable data on infant feeding patterns. (Appendix A)

*Bangladesh, India, Indonesia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Burma, Papua New Guinea, Fiji, the Solomon Islands, Tonga, Samoa, Micronesia, Egypt, Yemen, Tunisia, Jordan and Morocco.

The primary figures quoted are from UNICEF's State of the World's Children 1987. These are derived from WHO and country estimates. USAID data for the Child Survival Program is taken by ISTI from UNICEF, which on examination, appears to be identical to Westinghouse's Child Survival Data.

Differences in interpretation of the data are evident when the statistics are examined in-depth. For example, it is not apparent how UNICEF derived its figures for Pakistan from the data in Table 1, which was taken from the Nutritional Unit of the WHO Surveillance. (Appendix B)
The breastfeeding categories listed (ever, fully, partially or both) are not defined, and much of the data from WHO is derived from Gussler's Breastfeeding Compendeum.

The primary data sources, taken from representative, cross-sectional national studies, fail to illustrate the feeding patterns in subgroups, which often represent significant trends within each country. World Fertility Survey statistics, frequently cited, create an artificially optimistic picture of breastfeeding trends by over estimating the prevalence and duration of breastfeeding. The drawbacks of the data collected by the WFS are: it relies on recall, suffers from heaping (the data is collected at 3,6 & 12 month intervals) and no differentiation is made between exclusive and mixed breastfeeding, a critical distinction. The Demographic Household Survey, as do all cross-sectional surveys, suffers from recall bias and does not clarify amounts of other foods, their timing in relationship to breastfeeding, or the largest interval between feeds (Winikoff). (Appendix A)

FACTORS AFFECTING DATA COLLECTION AND ANALYSIS

Breastfeeding is usually discussed and written about as though it were a homogeneous process or product, despite the fact that marked variations exist in all aspects of breastfeeding practice. Mothers have practiced a variety of modified forms of breastfeeding at different times, from region to region. They have been inventive and forced to find ways to combine their priorities for subsistence with provision of childcare. Although infant feeding practices begin while the child is still in utero and are dependent on the health of the mother, this is often ignored. A number of sociocultural forces undermine the attempts of mothers to provide for their infants, therefore infant feeding patterns must be examined by scientists in a wider context than has been in the past.

In attempting to estimate breastfeeding trends, scientists have often published numbers which are not only meaningless but misleading. Few studies have defined the indicators used to measure breastfeeding in relation to actual patterns of feeding which has lead to confusion in the literature and the erroneous assumption that breastfeeding is both universal and of long duration.

The majority of studies measure the "total duration" of breastfeeding, not the "true duration." Total duration includes all patterns of breastfeeding (a mother could be nursing only once a week and still be included in the statistics) and is not a meaningful measurement in terms of the nutritional, anti-infective and child spacing effects of breastfeeding. True duration defines the period of exclusive breastfeeding and is the most significant measurement when looking at the child survival aspects of infant feeding. Measuring the total duration of breastfeeding, and not the true (exclusive) duration, has resulted in optimistic estimates of duration of breastfeeding. These estimates have lulled the international community, governments, policy makers and health workers into a dangerous state of complacency regarding the current situation with infant feeding practices in developing countries. (Gopujkar) Figure 1

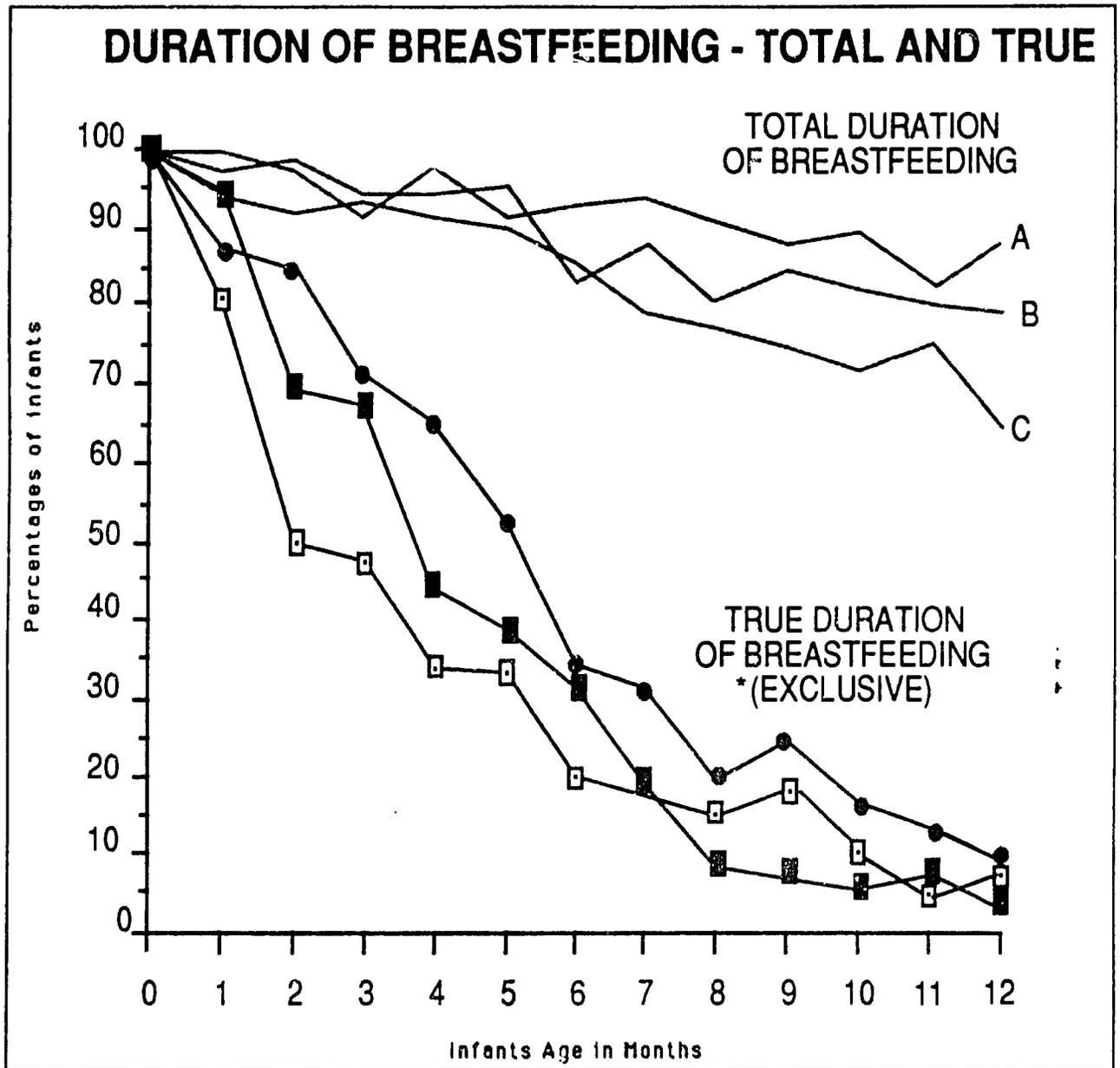
Class related patterns of breastfeeding exist, however the majority of studies have tended to focus on urban/rural differences rather than on socioeconomic status. In developing countries, the rate of breastfeeding generally declines as socioeconomic status rises.

LACK OF CONSISTENT DEFINITIONS

In analyzing research on infant feeding patterns, the general lack of consistent definitions, makes it difficult, if not impossible, to accurately assess trends in breastfeeding practice. Terms such as: initiation of breastfeeding, ever breastfed, fully or pure breastfed, mixed feeding, and true duration need to be appropriately defined in order for research to be valid.

There appears to be a prevailing lack of awareness that the results of studies on infant feeding patterns

Figure 1



A BREASTFED CALCUTTA

B BREASTFED BOMBAY

C BREASTFED MADRAS

EXCLUSIVELY BREASTFED CALCUTTA

EXCLUSIVELY BREASTFED MADRAS

EXCLUSIVELY BREASTFED BOMBAY

* Exclusively breastfed: only breast milk and no supplements

* Exclusively breastfed: only breast milk and no supplements
Breastfed: Breast milk with or without supplements

Source: Gopujkar, et. al., 1986.
Note: There is marked difference when you plot total prevalence compared to exclusive prevalence.

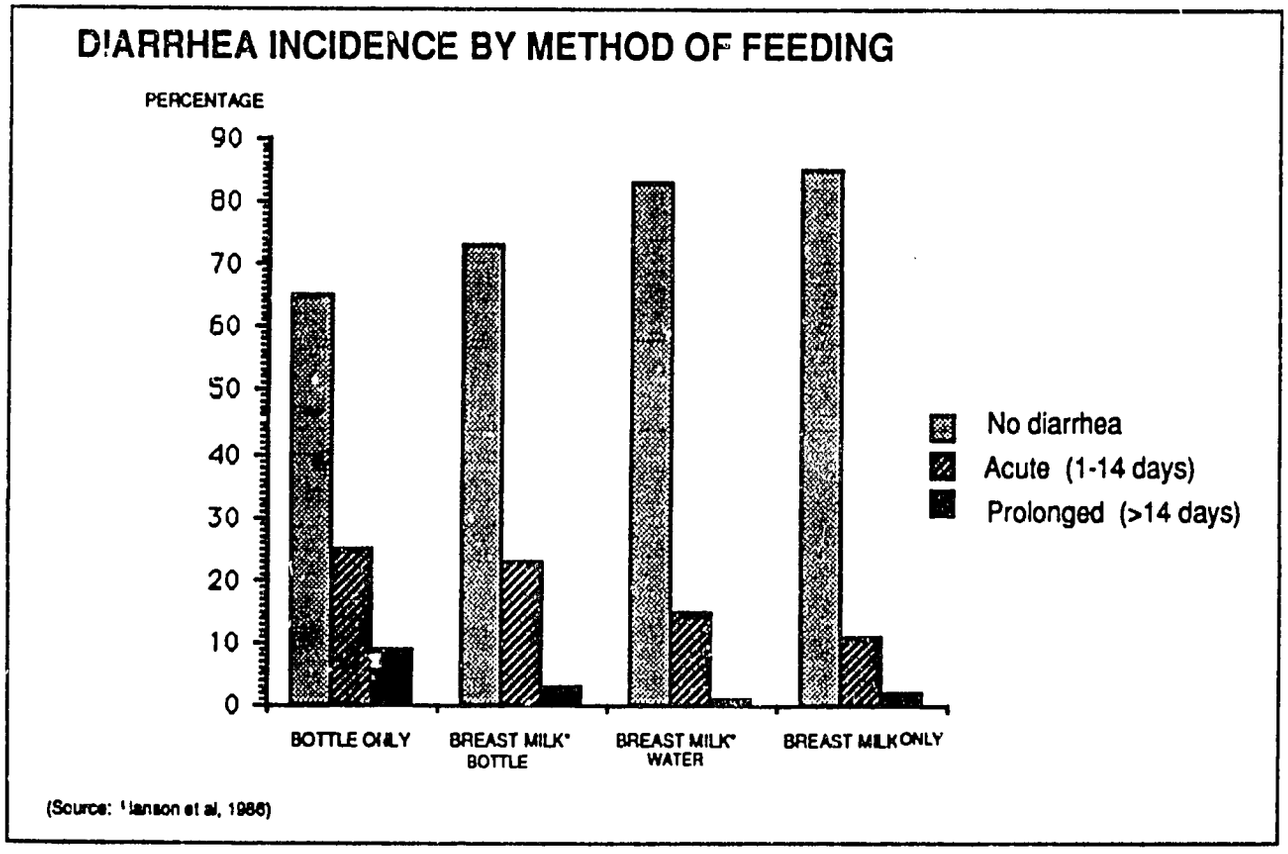
are affected by the definitions used. Although there is a vast difference in terms of the child's survival (morbidity and mortality) and family spacing benefits, whether or not breastfeeding is being supplemented with water, other liquids or solids (usually contaminated), many studies do not make this differentiation. In fact, "exclusive breastfeeding" is often defined to include supplementation with water or solids! This confusion also extends to terms such as: weaning, complement, supplement, semi solids and solids.

An excellent example of the importance of precise definitions for breastfeeding patterns in assessing the effect of practices on infant morbidity and mortality in developing countries is a study conducted by Hanson et.al., Lahore, Pakistan in 1986. The results of the study initially led the researchers to conclude that breastfeeding was not protective against diarrhea. However, when they re-examined the results, breaking them down into different patterns of feeding such as: exclusive breastfeeding, breastmilk and water, breastmilk and bottle, they found that exclusive breastfeeding was significantly protective against diarrhea, even in the extremely unhygienic slum conditions of Lahore (Figure 2).

TRENDS IN INFANT FEEDING PRACTICES

Notwithstanding the gaps in adequate methodological research on infant feeding practices in developing countries, local studies in the Near East and Asia Region clearly indicate an alarming overall trend towards bottlefeeding and early supplementation. The profound detrimental impact of this trend on child survival and maternal health, and the subsequent high cost, should not be underestimated by health professionals and policy makers.

Figure 2



Major problems identified in the regions:

1. THE TRIPLE NIPPLE SYNDROME

Drs. Michael Latham and Penny van Esterik, well-known authorities on infant nutrition in developing countries, have labled the marked shift from exclusive breastfeeding to mixed breast and bottlefeeding, with early supplementation, "the triple nipple syndrome." (Figure 3)

Exclusive breastfeeding appears to be less frequent than mixed breast and bottlefeeding in most of the countries reviewed.(Table 2) The outstanding exception is Papua New Guinea, where infant formula, bottles and nipples have been banned, except by prescription, since 1977.

During the first month, a high percentage of women

Figure 3

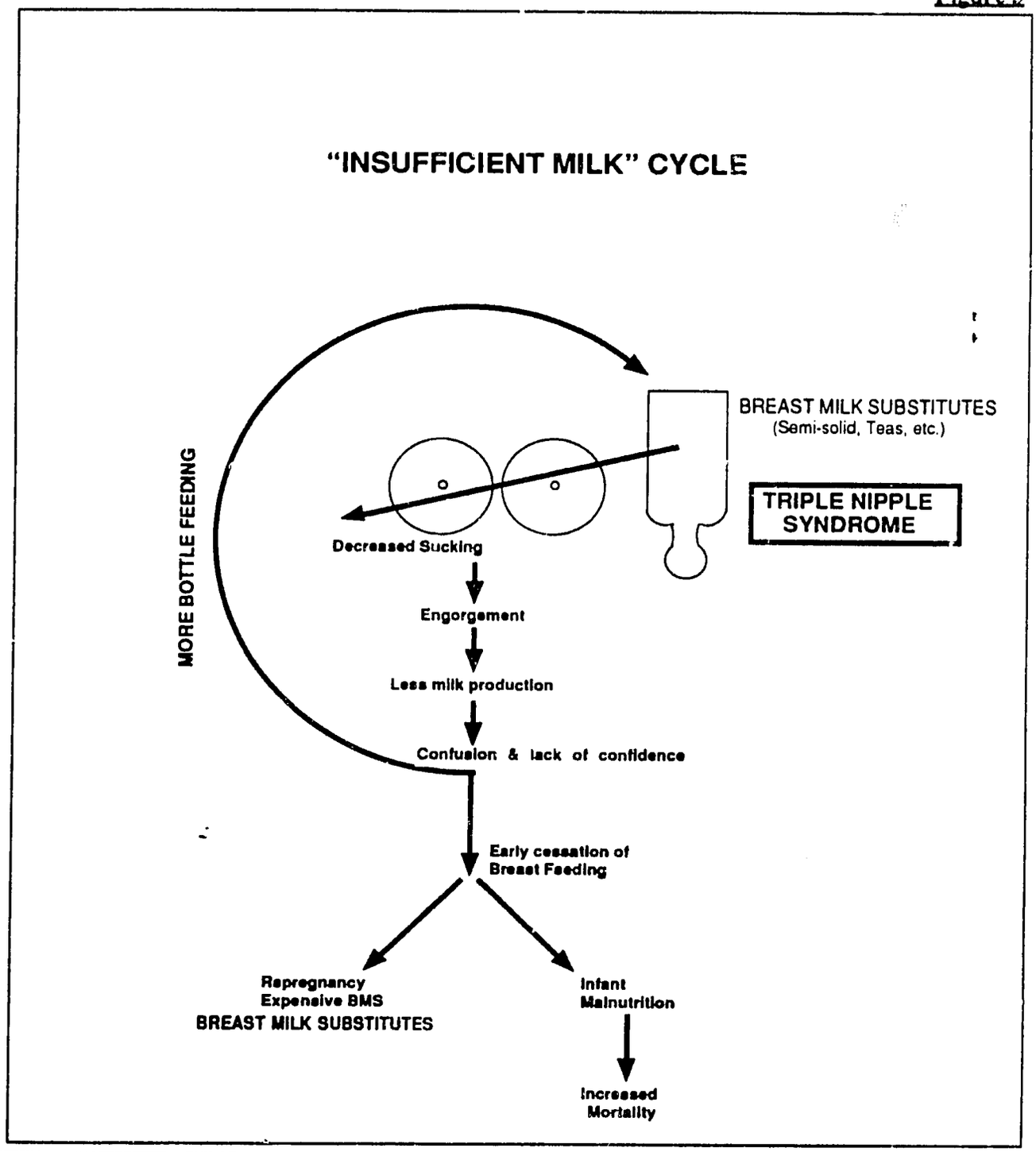


Table 2

COMPARISON OF EXCLUSIVE AND OVERALL BREASTFEEDING RATES AT 3, 6, 9, AND 12 MONTHS

	Percent of mothers breastfeeding at:							
	3 months		6 months		9 months		12 months	
	Exclusive	Other	Exclusive	Other	Exclusive	Other	Exclusive	Other
Country / Reference:								
BANGLADESH								
National*		98	97				89	
Urban			17	45				
UNICEF 1985								
BURMA								
National	90			90			90	
Maing et al, 1979			69a	100a			6b	99b
INDIA								
Urban (clinic sample)			27c					
Rural (household svy.)			38c					
Bai & Reddy								
Bombay	73	96	37 84	23	83	981		
Madras	70	93	34 86	8	77	470		
Calcutta	47	95	21 95	17	90	793		
Gopujkar 1986d								
Urban			15					
Rural			45					
Dattal et al 1984								
INDONESIA								
National		98	97				83	
Kardjati 1978	12e							
5-city survey	50f							>50g
Utomo 1984								
NEPAL								
National		99	99				97	
Clinic survey (N=313)			36h					
Angove & Gunning 1986								
PAKISTAN								
National		78	73				67	
Lahore	8	88i	1 80i					
Hanson et al 1986								
PHILIPPINES								
National		66	58				28	
Metro Manila	22				8			

Notes:

- * all "National" data are UNICEF figures (1987 State of the World's Children)
- a category was infants under 6 months of age
- b category was infants 6-24 months
- c category was infants 6-9 months
- d all Gopujkar figures approximated from graph
- e category was infants 2-6 months
- f 3 months was the median duration for "fully breastfed," i.e., no "supplemental food"
- g median "breastfeeding" durations ranged form 15-25 months in the 5 cities
- h category was infants at least 5 months
- i approximate figures

Table 3

WHO TYPOLOGY OF INFANT FEEDING PATTERNS

Phases of breastfeeding prevalence and duration

Phase 1	"Traditional phase" with high prevalence and duration
Phase 2	"Transformation phase" prevalence of breastfeeding falling and duration becoming shorter
Phase 3	"Resurgence phase" with rising prevalence and duration of breastfeeding

Typology or stages of breastfeeding prevalence and duration for national picture

Stage 1	All groups in the traditional phase - - India, Zaire
Stage 2	The lead group in phase 2, the rest in phase 1 - - Nigeria
Stage 3-5	Prevalence and duration of breastfeeding falling - - Philippines, Brazil
Stage 6	The lead group in phase 3, the rest in phase 2 - - Singapore, Spain
Stage 7	The lead group in phase 3, the other groups following close behind - - USA, UK
Stage 8	All groups in phase 3 - - Sweden

up to 4 months; in Burma 38%, in Indonesia by the first month 40% have introduced solids; in Nepal 35% were breastfed exclusively for 3 months; in the Philippines 34% of the urban elite never breastfed.

The figures for long durations of breastfeeding quoted for many of the countries (particularly Egypt) are not well defined to link causally to child survival and family spacing. The extent to which the breast is used primarily as a pacifier in countries with long durations needs to be examined further. At the present time little data on the frequency of feeding is available.

The trend towards the early introduction of solids, with the increased use of expensive commercial baby foods, results in higher incidences of diarrhea and subsequent malnutrition. (Latham) This problem, with its high mortality rate, appears to be especially prevalent in Indonesia, India, Bangladesh, Egypt, Pakistan, Thailand and Jordan.

On investigation, the WHO typology of breastfeeding (Table 3), with a sequential progression through 8 stages does not appear to exist. In all probabilty, the idea that such a progression exists was accepted because little attempt has been made to identify the percentage of mothers breastfeeding exclusively. The most critical problem with infant feeding trends is not whether or not breastfeeding is being totally abandoned by mothers, but rather the early introduction of supplements, especially infant formula and cow's milk.

2. *DISCARDING COLOSTRUM AND THE USE OF PRELACTEAL FEEDS*

The practice of disgarding colostrum and replacing it with a wide range of prelacteal feeds including clarified butter, dates, olive oil, honey, mashed banana and mustard oil, appears to be common in most of the countries surveyed. The danger of this practice is Fourfold:

1. It interferes with the establishment of lactation and contributes to lactation failure (it is a primary cause of the common "insufficient milk" syndrome)

2. It deprives the newborn of critical doses of Vitamin A, carotene, IgA, and other important anti-infective substances, nutrients, growth factors, enzymes and fatty acids which are present in colostrum.

3. It can cause infection in the infant, through contamination, threatening its survival, during its most vulnerable stage.

4. There is a danger of newborns suffocating from aspiration of fluids given by bottle during prelacteal feeding.

The belief that colostrum is dirty, poisonous and harmful to the infant appears to be prevalent and has important implications for health education programs and strategies in the neonatal period.

BOTTLING THE BREAST

The practice of bottlefeeding has become so widespread, the concepts and practices related to bottlefeeding appear to have been carried over to the process of breastfeeding, as though they were analogous. Mothers are taught by health professionals to vigorously clean their nipples, empty their breasts and feed according to a schedule! This is particularly true in Sri Lanka, where one study showed that 40% of women were following these practices. (Soysa) In some countries, women are discarding their breastmilk if they have been in the sun or have not breastfed for a period of time in the belief that their milk can spoil. In Burma, mothers discard their milk if the color does not seem right.

All of these practices associated with "bottling the breast," though seemingly innocuous, are seriously detrimental to the production of breastmilk and are responsible for lactation failure in many women. (Figure 3)

DETERMINANTS OF BREASTFEEDING

The information on what determines whether or not a mother breastfeeds and for how long, varies from study to study and is affected by how breastfeeding is defined. In general, national studies have indicated lower rates of breastfeeding are associated with higher education, upper socioeconomic status, urban residence, employment outside the home, certain ethnic groups and the use of oral contraceptives. Younger mothers and women having their first children also tend to have lower rates. In analyzing the data, it is important to take into account that these factors, associated with socioeconomic status, may or may not in themselves be causally related to breastfeeding practices.

Urban/rural differences deserve special attention. Although most research findings show higher rates and longer durations for breastfeeding in the rural areas, health professionals and policy makers have been slow to realize that because the vast majority of mothers live in the rural areas, in absolute terms even a SLIGHT decline in breastfeeding in rural areas affects LARGE numbers of infants.

Although employment appears to be correlated with lower rates of breastfeeding, most studies have not looked at the effect of different types of employment. A study from Pakistan found that women working in agriculture had higher rates of breastfeeding than women in civil service or commerce. (Nagra and Gilani) In Sri Lanka, working women who had no access to daycare or who needed to be separated from their infants for long periods of time due to work schedules, were less likely to breastfeed and the introduction of bottles in the second month coincided with the end of maternity leaves.

Studies from Tunisia and Yemen found that the duration of breastfeeding is longer when an older daughter is present in the house. In Bangladesh, male infants were found to be breastfed for a longer period of time than female and were given more dairy products. In the Philippines and Bangladesh, weight restriction was associated with lower rates of breastfeeding.

The reasons for not breastfeeding given by mothers to researchers varied and were somewhat dependent on how the question was asked. The most frequently cited reasons were "insufficient milk" (a syndrome usually caused by the practice of too infrequent nursing and early supplementation), employment, illness of the mother, "infant was old enough to wean," oral contraceptives and repregnancy. Studies in Bangladesh and Sri Lanka cited "fear of altering the mother's figure" as a reason for not nursing. Employment as a variable was less important than separation time from the infant in a study from Sri Lanka. Advice from health workers to bottlefeed, the lack of rooming-in facilities and free samples of formula appeared to be universal

deterrents to breastfeeding in all countries surveyed.

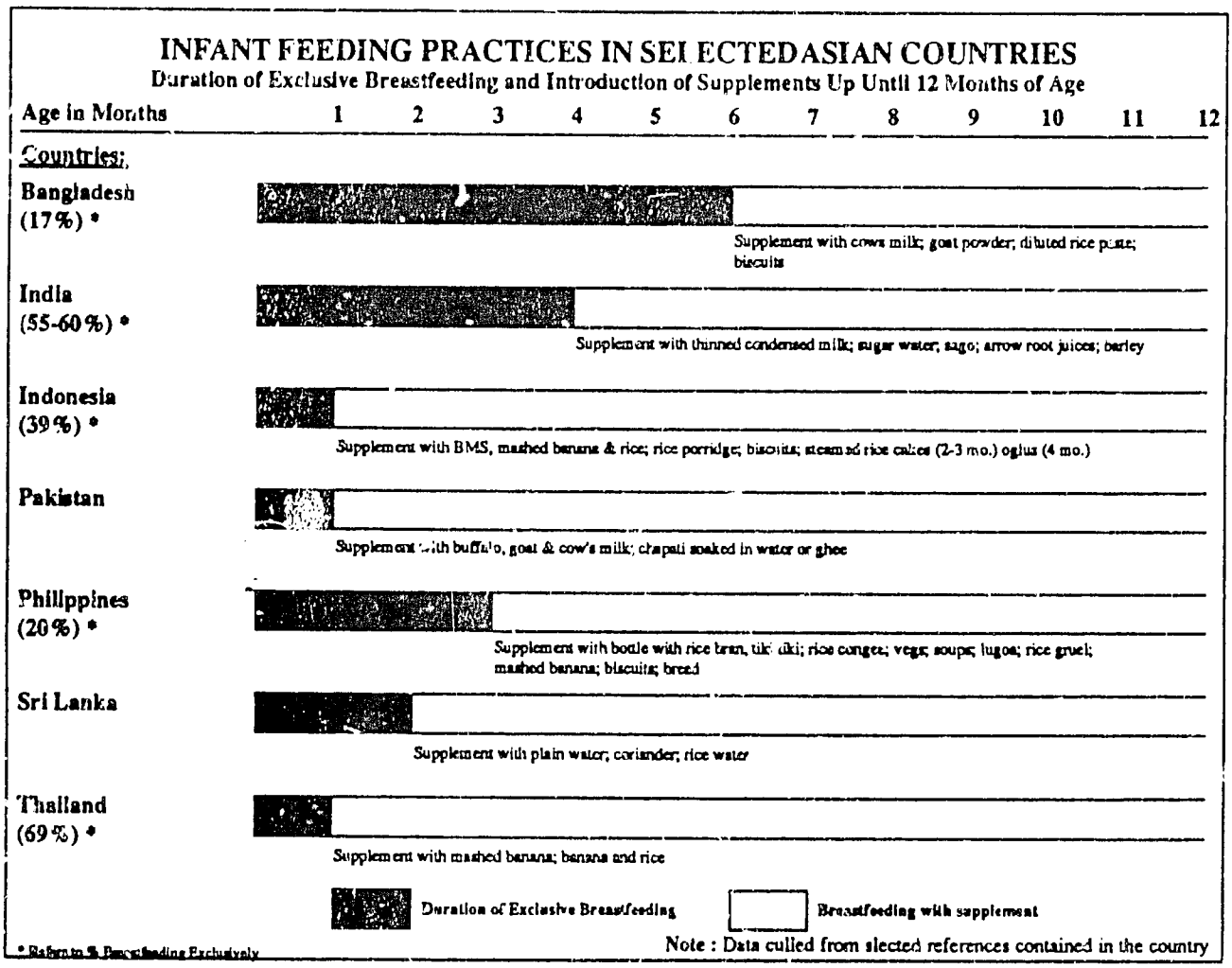
WEANING AND SUPPLEMENTAL FOODS

Weaning is best defined as the transformation of the diet from breastmilk to normal family foods. Ideally, it begins at 4 to 6 months, is a gradual process and while continuing to breastfeed, the infant is given other foods. Weaning in some countries, such as Egypt and Yemen, is unfortunately, often abrupt. The choice of foods and the age of weaning is usually culturally determined. (Figure 4)

Typical supplementary foods early in the weaning process are infant formula or animal milk, paps or gruels which use local staple grains. Rice is a common weaning food in Asia. In Nepal, a pablum-like rice paste or ghee and sugar water is given. Mashed banana is a common weaning food in Indonesia and Bangladesh. In India and most parts of Asia, condensed milk is used as a weaning food. In parts of Indonesia, it is believed that the right breast is food and the left is medicine. Certain ethnic groups in Thailand believe the right breast is rice and the left is water.

In Sri Lanka, a rice weaning ceremony takes place at 11 months, in Nepal it takes place at 6 months. WHO statistics for Thailand indicate that 58% of infants receive non-milk substitutes by 2-3 months. A Pakistan study found that 18% of infants were given buffalo or goat's milk, weak tea, chapati soaked in ghee, sugi (semolina), dhal, wheat porridge or khir by 1 month of age. Over 1/3 of Filipino infants receive supplements by age 2 to 3 months (WHO). Figures for India show later supplementation, with less than 1/4 of infants receiving supplements by 2 to 3 months.

Figure 4



Seasonality often affects the availability of weaning foods and the age of weaning. A study from Egypt found that mothers will not wean their infants during the summer because they fear they will contact diarrhea.

Illness in the infant is also a factor in weaning and supplementation practices. Breastfeeding mothers will often alter their diets, give the infant formula, stop breastfeeding or resort to a variety of measures when their infants are ill. Many of these measures are harmful and exacerbate the infant's condition.

A supplement should be defined as any food or liquid provided to the infant in addition to breastmilk, INCLUDING WATER. The average age of the termination of exclusive breastfeeding should be the same as the age of weaning (4 to 6 months) in order for the infant to have the greatest chance for child survival and for family spacing benefits. A crucial question in any study of infant feeding practices is the introduction of water to the infant and the relative cleanliness of the water. However, except for one study from Indonesia, little information about this problem exists. The Indonesian study indicated that most mothers attempted to boil water before giving it to their infants, However, in the Sasak region, mothers did not have sufficient money with which to buy enough fuel in order to boil water.

SUPPLEMENTATION WITH FORMULA

In Pakistan, Thailand, the Philippines, Yemen and Indonesia, the practice of supplementing the infant's diet with formula in bottles is particularly widespread. The high level of bottle contamination and the lack of sufficient income to buy adequate amounts of formula, makes the formula, powdered milk and other breastmilk substitutes instruments of diarrheal disease and death.

Regardless of the income of the family, research has shown that the formula is rarely mixed correctly, it is generally either too weak or too strong. Poorer women who can not afford bottles, make their own out of medicine, ink or other used bottles and purchase teats. When lower income families run out of formula or powdered milk they give their infants tea, vegetable juice, sugar water, watered-down cereals, or even coffee.

The economic costs of feeding infants formula to individual families given the low GNP of developing countries are enormous. Estimates of the cost of buying formula in various countries indicate that it can account for 30% to 75% of a family's income. In 1975-1976, an analysis of the sales of artificial milk in the Philippines found that the total cost of imported artificial milk for 1 year was 89.7 million US dollars, or the equivalent of 15-40% of the GNP. A large urban hospital in the Philippines, which instituted a policy of rooming-in, along with a breastfeeding promotion campaign, decreased the consumption of artificial milk by 80%, resulting in the saving of approximately $107,296.72 per year. (Philippine country presentation, Asia Regional Lactation Conference, Denpasar 1988.)

LOW BIRTH WEIGHT INFANTS

The percentage of low birth weight infants born to Asian mothers is high. Countries with significantly high rates (Table 4) are: Bangladesh (50%), the Philippines (47%), India (30%), Pakistan (27%), Sri Lanka (25%) and Burma (20%). For these infants, numerous studies underscore the importance of the protective effects of exclusive breastfeeding in increasing their chances for survival, even more critical than for normal weight infants. The protein content of breastmilk in mothers who deliver preterm babies is much higher than in mothers who deliver fullterm infants, a growth compensatory mechanism, needed by lower birth weight babies. Ironically, low birth weight infants are usually the first to receive supplements of artificial milk, in the erroneous belief that this is not only necessary, but theraputic.

MORBIDITY AND MORTALITY

Exclusive breastfeeding for the first 4 to 6 months of life is probably the single most cost-effective child survival measure available. It has been well documented that breastfeeding is the infant's primary defense against infections, diarrhea and malnutrition. Infant morbidity and mortality rates are 10 to 25 times higher for bottlefed infants. Feachem and Koblinsky stated that infants 0 to 5 months, who are not exclusively breastfed, are 25 times more likely to die from diarrhea. A review of the research from the Asia/Near East Region consistently reaffirmed the protective effect of breastfeeding in environments with minimal sanitation.

In Malaysia, newborns who lived in households without piped water or a toilet, were 5 times more likely to die after the first week of age if they were not breastfed (Habicht, et al 1988).

A national sample of infants born in the Philippines between 1978 and 1983 found that 96% of breastfed infants were alive in 1983, compared to 88% who were bottlefed. Studies from Bangladesh show a significantly higher incidence of and mortality rate for bloody diarrhea in non-breastfeeding or recently weaned infants. Indonesian studies found that infants who were fed solids at an early age had a 21% higher perinatal mortality rate and a 16% higher neonatal mortality rate. In addition, rates of malnutrition were significantly higher in non-breastfed and weaned infants.

At Maharat Nakhon Ratchasima Hospital in Northeast Thailand, the percentage of children deserted in the hospital by their mothers was dramatically reduced after a policy of rooming-in and breastfeeding promotion was instituted.

Table 4

TABLE 4
ASIA/NEAR EAST SELECTED STATISTICS, 1980-86

	PERCENT BREASTFEEDING 1980-86			INFANT MORTALITY	PERCENT LOW BIRTH RATE 1982-1985	PERCENT CHILDREN UNDER 5 SUFFERING FROM MALNUTRITION		TOTAL FERTILITY
	3 month	6 month	12 month			mild/moderate	severe	
ASIA								
Bangladesh	98	97	89	123	50	63	21	5.8
Burma	90	90	90	66	20	50		3.9
Fiji				28				3.3
India				103	30	33	5	3.9
Indonesia	98	97	83	78	14	27	3	3.7
Nepal	99	99	97	132		30	5	5.6
Pakistan	78	73	67	113	27	60	10	3.5
Papua			67	25	38		5.4	
Philippines	68	58	28	47	18	18	4	4.1
Thailand	48	47	20	43	12	27		3
Sri Lanka	83	74	48	35	25			3.1
NEAR EAST								
Egypt		91	84	91	9	40	5	4.6
Jordan	70	52	25	48	7			7.3
Morocco	95	61		88	9	40	5	4.6
Tunisia	95	92	71	77	7	60	4	4.4
Yemen	80	78	55	126	9	54	4	6.8

1986 data in UNICEF, State of the World's Children, 1987

LACTATION DIET

Infants of even malnourished mothers can grow adequately on breastmilk alone for 6 months or longer. There are many culturally specific dietary beliefs concerning pregnancy and lactation and almost every culture has special drinks, gruels and foods to stimulate the production of milk. These are called galactogogues. In India, for example, "tribals" use ground earthworms added to food or drinks, to increase milk production. A study from Nepal found that 1/3 of all mothers used a special soup made from the jwano seed or a fermented drink called gundruk, made from dried mustard or radish greens. Little research has been conducted

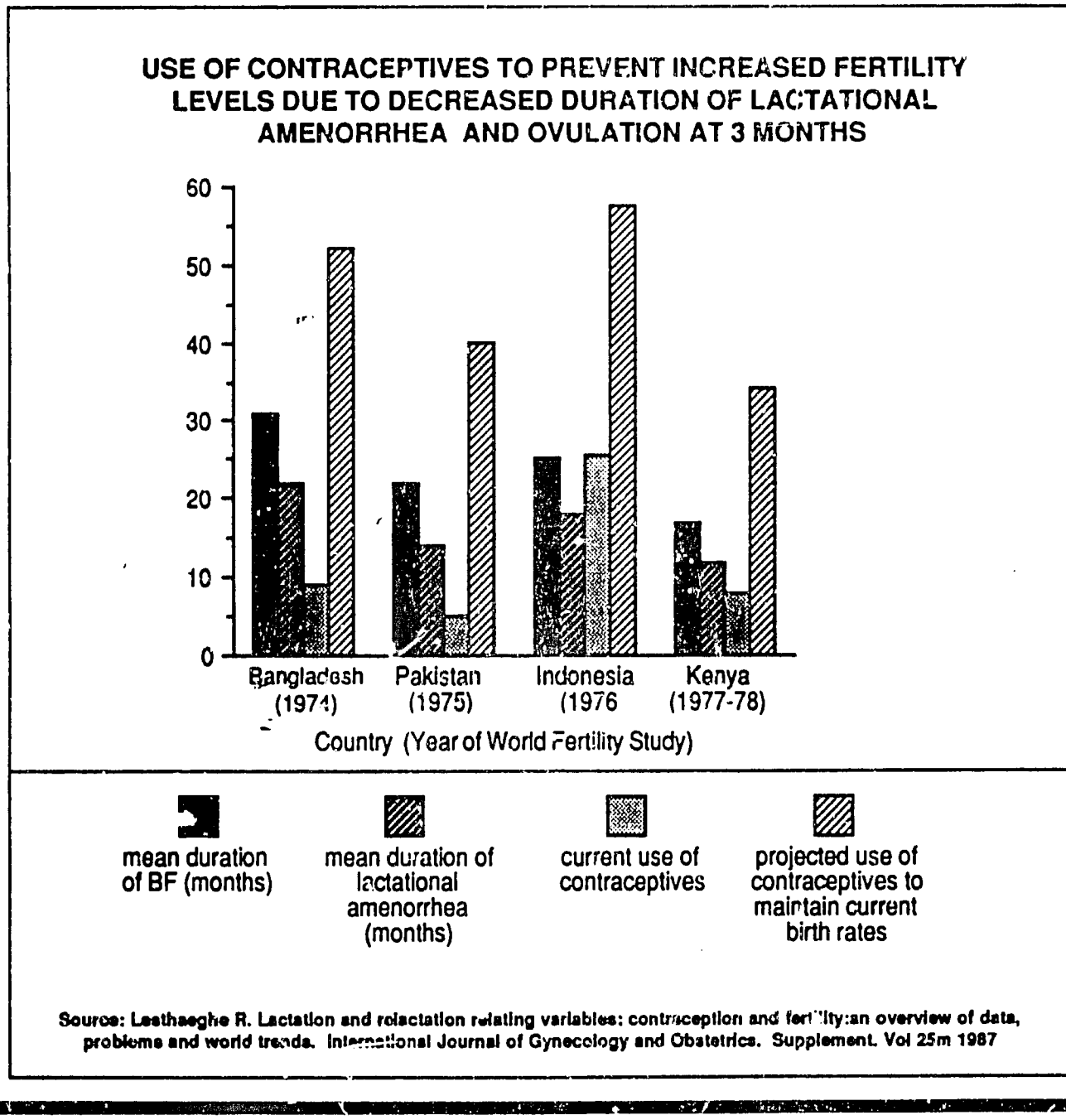
to analyze the effectiveness or nutritional effects of common galactogogues.

LACTATION CONTRACEPTION

The concept of the importance of lactation contraception has been difficult for health professionals to accept because their training has traditional' been more technological than biological in nature.

Recent studies have documented that not only is breastfeeding a critical variable in child spacing, but it is more effective as a child spacing method than any other form of "modern" contraception. In order for breastfeeding to be an effective form of contraception, it MUST be exclusive. The frequency of feeding and the amount of sucking the infant does at the breast (6 or more times in 24 hours, including night feeds) are the critical factors in preventing ovulation and therefore the return of fertility. Supplementation in any form reduces the contraceptive effect of breastfeeding. (Figure 5)

Figure 5



Source: Leathaeghe R. Lactation and relactation relating variables: contraception and fertility:an overview of data, problems and world trends. International Journal of Gynecology and Obstetrics. Supplement. Vol 25m 1987

MATERNITY BENEFITS

For the majority of mothers in developing countries there are no maternity benefits. They usually work at home, in cottage industries, in sweat shops, in the fields or as domestics.

Women who are formally employed in the Asia/Near East and South Pacific Regions receive maternity leaves varying from 12 weeks (Burma, India, Indonesia, Fiji, Papua New Guinea and Egypt) to 45 days (Philippines, Nepal, Jordan and Yemen). India, Tunisia, the Philippines, Nepal, Fiji, Papua New Guinea and Tunisia give full pay. In Egypt the leave is unpaid. Indonesia, Egypt, Jordan and Yemen appear to have the fewest maternity benefits.

In Burma, India, Pakistan, the Philippines and Tunisia, firms employing more than 40 to 50 women are required to provide nurseries.

Lactation breaks with time off counting as paid work are required in India, Morocco, Papua New Guinea, the Philippines and Sri Lanka. Information on whether or not employers generally provide the required nurseries or lactation breaks is not available.

THE INFANT FORMULA MARKETING CODE

The WHO infant formula marketing code has been adopted by most countries, with the exception of the United States. The major provisions of the code restrict the promotion of breastmilk substitutes, regulate educational materials and require labeling instructions in the language of the country where the product is sold. Labels may not contain pictures of babies, samples may not be given to mothers and donations of formula to institutions are restricted. In a number of countries the code is law, in others it is awaiting legislation. In Jordan, Yemen, Fiji and Pakistan the code has been recommended, Morocco is studying it. In Tunisia, Egypt, Indonesia and India, parts of the code have been made into law. In the Philippines, Nepal, Sri Lanka, Thailand and Papua New Guinea, the code is law. Papua New Guinea has the strictest provisions and no bottles, teats or formula are available without a prescription. Enforcement and monitoring the Code appears to be a problem in many countries.

BREASTFEEDING PROMOTION ACTIVITIES

Given the importance and cost-effectiveness of breastfeeding as a child survival and child spacing measure, it is difficult to comprehend the prevailing lack of emphasis on breastfeeding promotion in the Asia/Near East and South Pacific regions. Funding for breastfeeding promotion activities has been practically non-existent. Efforts to promote breastfeeding in the Near East region have been limited. Egypt appears to be taking the lead in breastfeeding promotion in this region. Tonga and Papua New Guinea in the South Pacific have in the past instituted national campaigns. In Asia, graduates of the Wellstart Program have been responsible for taking a leadership role in breastfeeding promotion and educational activities in Indonesia, the Philippines and Thailand. Their accomplishments in these countries, appear impressive.

The Wellstart Program, based in San Diego, California and funded by USAID since 1983, is a model for breastfeeding education and promotion. The program identifies teams of respected health professionals from key institutions, to attend a 4 week course at the Wellstart Center in San Diego. The team generally includes an obstetrician, a pediatrician and a perinatal nurse/midwife.

Other breastfeeding promotion efforts in the region have included: the development of health educational materials (pamphlets for mothers), social marketing, the incorporation of breastfeeding education into medical and nursing curricula, courses on breastfeeding in primary schools,

changing hospital policies detrimental to breastfeeding (especially rooming-in practices), lactation clinics in hospitals, providing speakers on the benefits of breastfeeding, the formation of mothers support groups, travelling seminars to promote breastfeeding (particularly in rural areas), and setting up milk banks.

AID's health information system (ISTI 1987) gathered data on breastfeeding promotion activities in the field from USAID missions. The activities were classified as minor or substantial. Unfortunately, breastfeeding promotion and the terms minor and substantial were not defined. (Appendix C)

GAPS

This overview has raised many questions and identified a number of gaps in the infant feeding patterns of the countries reviewed.. To ensure child survival in areas of economic and environmental deprivation, efforts to establish and maintain exclusive breastfeeding for the first 4 to 6 months of the infant's life can be enhanced by addressing the concerns and information gaps listed below.

THERE IS A LACK OF PRECISE DEFINITIONS AND INFORMATION ON EXCLUSIVE BREASTFEEDING. Breastfeeding is used as a homogeneous term and the meaning has varied extensively from investigator to investigator. There is a cogent need for clear, precise definitions for exclusive and partial breastfeeding, as well as for semi solids and solids. There are only a few studies using the simplest definition of breastfeeding (breastmilk ONLY, with nothing else by mouth, not not even water) and most are urban hospital studies with serious methodological flaws. Meaningless terms such as "ever breastfed" are common, making it impossible to accurately assess the incidence and duration of exclusive breastfeeding from the national studies that exist.

THERE IS A LACK OF LONGITUDINAL PROSPECTIVE STUDIES THAT ARE METHODOLOGICALLY SOUND. In particular, there is a paucity of prospective data, especially for rural infants, gathered at monthly intervals, in the first 3 months of life. The available data is artifically heaped in 3 monthly intervals and much of it is not current.

THERE IS LITTLE INFORMATION ON THE EXTENT AND EFFECTS OF PROLONGED EXCLUSIVE BREASTFEEDING AND PROLONGED BOTTLE-FEEDING (OVER 6 MONTHS).

THERE IS LITTLE CLINICAL INFORMATION ON THE "INSUFFICIENT MILK" SYNDROME. The term is not defined and it is not clear how much factors such as ill health of the mother contributes to the problem or what common practices lead to "lack of milk." (Figure 6)

THERE IS LITTLE OR NO INFORMATION ON FORMULA, NIPPLE, PACIFIER AND BOTTLE SALES. Their effect on breastfeeding patterns and practices and the information women receive in regard to these products needs to be investigated.

THERE ARE NO GROWTH CHARTS FOR NORMAL AND PRETERM BREASTFED INFANTS. The use of charts from bottlefed reference populations are not appropriate.

LITTLE INFORMATION EXISTS ON THE MILK BANKS IN DEVELOPING COUNTRIES. How they are working, their cost, utilization patterns and problems, should be researched. In Honduras they have been used to help working mothers continue breastfeeding, but we do not have such information for Asia.

THE CLINICAL PROBLEMS OF BREASTFEEDING MOTHERS IN DEVELOPING COUNTRIES ARE NOT WELL DOCUMENTED. There is no data on the frequency of problems such as: mastitis and breast abcesses. The data from lactation clinics has not been reveiwed. More mothers could be helped to breastfeed successfully if this data was more readily available in the regions. There is a wide body of practical information that has not yet been culled.

LITTLE INFORMATION EXISTS ON BREASTFEEDING PATTERNS IN WORKING MOTHERS. It should be noted that the current definition of "work" in the majority of breastfeeding studies is inadequate. Studies generally address the problems of the paid sector and define "work' as formal employment for more than 1 day. This gives a distorted picture. There is little data on breastfeeding patterns of field workers, petty traders or whether women who work in the day do more breastfeeding at night.

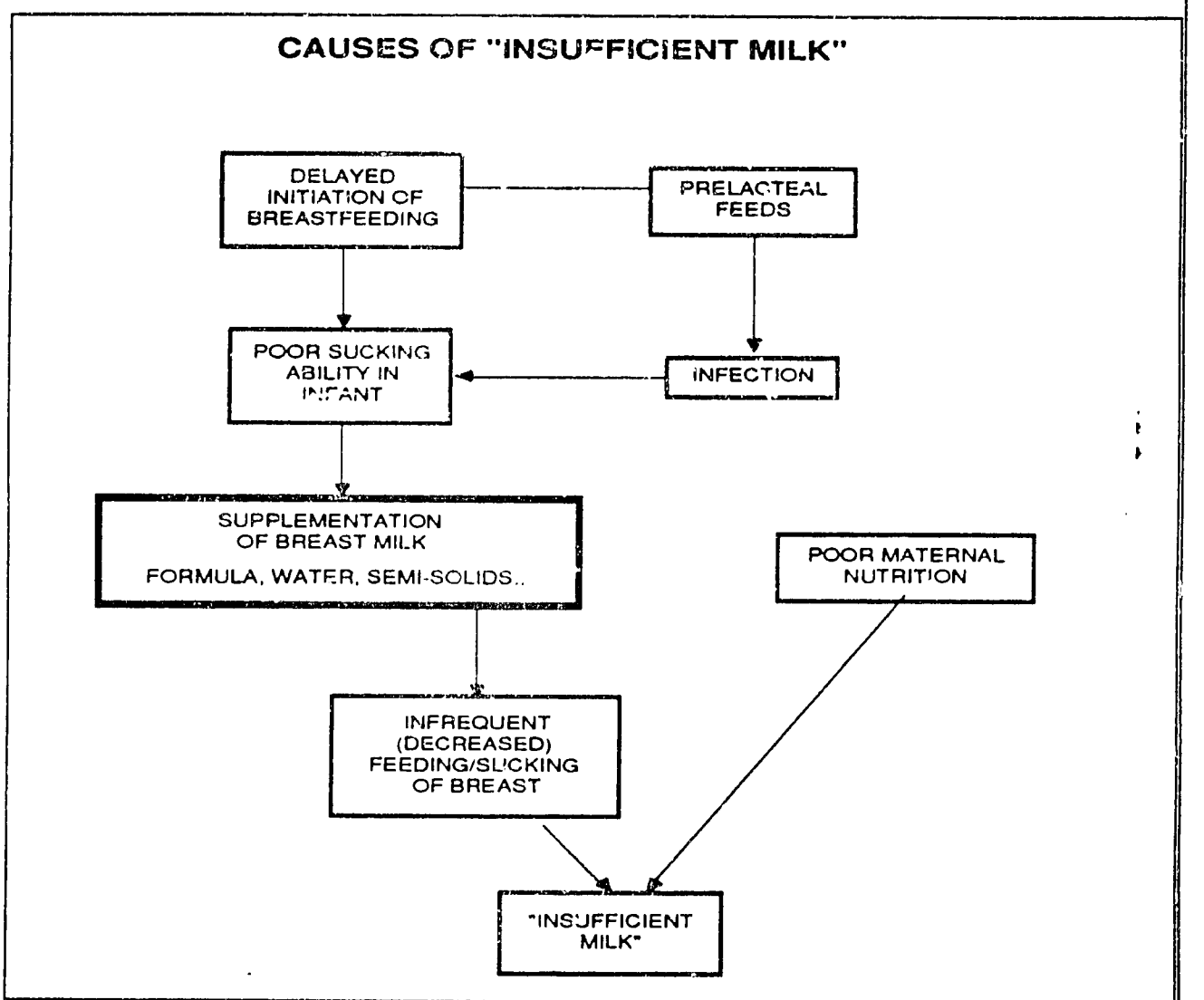
There is a need to share this information as more promotional programs are being developed since exclusive breastfeeding prevents and reduces

diarrhea, mortality and malnutrition.

MORE INFORMATION IS NEEDED ON HOW TO REMARKET BREASTFEEDING. In addition to mothers being told "breast milk is best," they need to be TAUGHT "breastfeed to save your child from diarrheal death."

THERE IS A LACK OF WEANING FOOD DATA ON FOOD BELIEFS (colostrum is harmful), SEASON AND FREQUENCY, RELIGION AND CULTURE. Although there are some small studies, the results are not generalizable and often not current.

Figure 6



RECOMMENDATIONS

There is worldwide concern that breastfeeding is declining, even in rural areas. Breastmilk is a major natural resource. The economic and health costs of the trend towards bottlefeeding are considerable. In the fight for child survival, breastmilk, with its anti-diarrheal and ideal nutritional components, is an infant's "passport to life." For the mother, breastfeeding means better health, family spacing and closer bonding with her infant. Breastfeeding promotion is cost-effective. If a fraction of the amount of funding spent on ORT/diarrheal disease control, was spent on the promotion of breastfeeding, the percentage of diarrheal disease, infant mortality and malnutrition would be drastically reduced. Exclusive breastfeeding is perfect nutrition (growth monitoring), oral rehydration therapy, immunization and family planning (Figure 7). *In view of this, the following recommendations should be considered.*

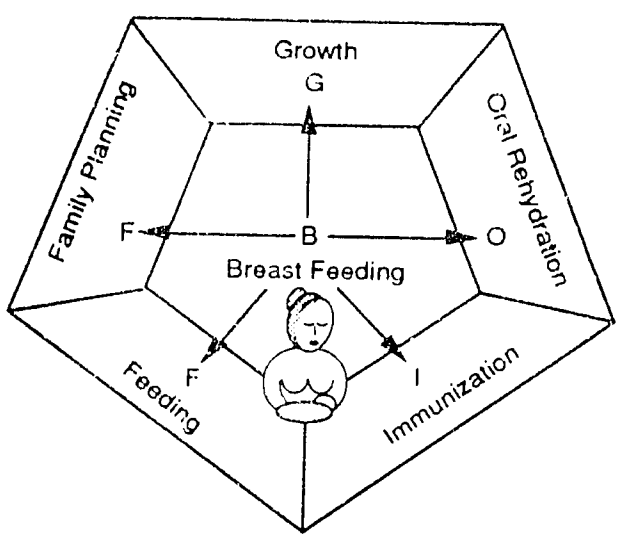
RESEARCH

1. Clear and precise definitions for breastfeeding terms should be used for all studies. The term "ever breastfed" has no validity when investigating infant feeding patterns and should be replaced by some measure, such as the establishment of lactation (a regular supply of milk sufficient to meet the nutritional needs of the infant.) The establishment of lactation takes approximately, 20 days exclusive breastfeeding. A consensus group should be convened to establish appropriate indicators for measuring infant feeding patterns in the Asia/Near East Region.

2. A rapid assessment instrument for measuring infant feeding patterns should be developed. This would make current data on special subgroups, such as refugees, and the effect of promotional interventions, more readily available.

Figure 7

PASSPORT TO LIFE — BREAST FEEDING



Source: Williams, C.D. Baumslag N., Jelliffe DB Mother and Child Health. Delivering the Services Oxford University Press

3. Infant feeding patterns during the first 3 months of life need to be examined in-depth, with particular emphasis on the rate of exclusive breastfeeding. Exclusive should be defined as NO supplements of any kind, including water. Colostrum should be given and frequency of suckling should be 6 times a day or more.

4. Future studies should attempt to collect more detailed information on the types of fluids, solid foods, or other supplements given to infants, the amounts and the ages at which they are given and their effect on infant morbidity and mortality.

5. Criteria for identifying women at risk for bottlefeeding should be developed.

6. More observational and behavioral studies, (for example, using focus groups), should be conducted. More data is needed to investigate poor initial feeding practices, including why women are supplementing early.

7. Studies to investigate the properties of common galactogogues should be done to ascertain if they do in fact increase milk production. They may be a cost-effective, therapeutic tool.

8. Further research on the use of breastfeeding immediately after delivery to reduce the incidence of maternal postpartum hemorrhage should be carried out. Small studies from the Philippines and Indonesia have indicated that the incidence of postpartum hemorrhage may be significantly reduced by immediate initiation of breastfeeding. A more precise analysis, using better methodology should be conducted.

9. A breastfeeding growth chart should be developed for exclusively breastfed infants, especially for the first 3 months, using longitudinal data. The current Harvard or NCHS Fels charts are based upon formula fed, white American infants and are not an appropriate reference population.

10. The availability of bottles and nipples, the consumption of infant formula and baby foods, the marketing practices of the formula and baby food industries and their impact on infant feeding patterns in each country should be investigated.

11. The existing data on milk banks in developing countries should be assembled and reviewed: how they are working, their cost, standards, utilization patterns and problems. This information should then be distributed to breastfeeding promotion programs. Research should include on-site evaluations of existing milk bank facilities.

12. Breastfeeding promotion programs need to be evaluated.

LEGISLATION

1. Efforts should be made to implement, monitor and enforce the Code in every country. Code violations should be monitored by independent groups and penalties for violations should be substantial.

2. Food donations may have harmful effects on infant feeding practices. Regulations concerning the policies for food handouts should be developed in each country and monitored for their potential adverse effects on infant feeding practices.

3. Maternity benefits for working women are inadequate in most of the countries reviewed. Efforts should be made to improve them. Women who work in the home, petty traders and handicraft workers, who have received little attention in the

past, could be offered day care and maternal feeding programs in their communities.

4. Legislation should be passed in each country to ensure all hospitals and clinics offering maternity services, provide rooming-in for all mothers.

PROGRAMS

1. *Funding for breastfeeding promotion programs should be increased substantially.* Program efforts to improve infant feeding patterns need to be greatly expanded in all countries. To coordinate programs, research and funding, each country should develop a committee consisting of health professionals (nurses, midwives, physicians and nutritionists), community leaders, consumers and government officials. This committee should also actively participate in policy formulation for breastfeeding.

2. *Breastfeeding education and promotion should be an integral component of all existing health programs*, such as: ORT, family planning, EPI, PL 480, WID, Food for Peace programs. Health officers, program managers and technical field staff should be given training in breastfeeding promotion strategies.

3. *Cadres of health workers should be trained to promote breastfeeding in both the rural and urban areas, at the grass roots level.* TBAs, village health workers and leaders from mother's groups should be trained in lactation management, support and promotion, they should then be responsible for training others. The successful (evaluated June 1987), USAID funded breastfeeding promotion program in Belize, Central America is a model for this type of training program.

4. *The private sector should be asked to play a major role in the promotion of breastfeeding.* For example, manufacturers of children's products could place pictures and educational messages on their labelling, showing that "breast is best."

5. *Social marketing strategies to promote breastfeeding* should be implemented on national levels on an on-going basis.

6. *The curricula for all health professionals, including nursing and medicine, should include in-depth and current education on the benefits of breastfeeding and lactation management.* Continuing education on breastfeeding should be given to all health care providers working in maternal and child health, both in institutions and in the community. The KAP of health workers should be assessed before and after courses are attended.

7. *Efforts should be made to educate mothers and fathers through breastfeeding support groups.* This has been successfully done in Brazil, Kenya, Honduras and Belize. *Women's groups* should be mobilized to support breastfeeding mothers in the community, increase their confidence about their ability to successfully breastfeed and to increase consumer awareness about harmful feeding practices.

8. *Mothers who are high risk for bottlefeeding (young mothers, working mothers) should receive special attention from health care providers.*

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ASIA

BANGLADESH

PREVALENCE DURATION AND PATTERNS

Data from the national studies suggests that breastfeeding in Bangladesh is almost "universal" (WFS, Ferry and Smith 1975, Popkin 1982). The rates in the urban areas are somewhat lower, indicating that even where breastfeeding is the presumed tradition, there is an urban/rural difference in the initiation of breastfeeding. Even in the rural areas where it is estimated that 98% of mothers are breastfeeding, the common form of feeding is mixed (UNICEF 1987). In the urban areas only 17% of mothers were breastfeeding exclusively by 6 months, with 45% partially breastfeeding (UNICEF Country Basic Data Enquiry 1985). The high percentage of mixed feeding reported is indicative of the switch from breast to bottle.

Local studies in Bangladesh, while not generalizable, act as a crosscheck on national data and often provide more detailed information, opening up the opportunity for interventions. The Institute of Nutrition and Food Science examined the pattern and trends in breastfeeding of primarily low-income women with no education In the 3260 mothers in urban, peri-urban and rural areas of Dacca and Khulna, with infants ranging from 6-18 months, the prevalence and duration of breastfeeding decreased proportionately with the degree of urbanization and the percentage of women not breastfeeding in the urban areas increased from 6% in 1977 to 15% in 1980, (Khan 1980). This shows further evidence of the erosion of traditional breastfeeding practices.

Estimates of breastfeeding duration range from 6 to 32 months (Smith, Popkin, Huffman). Most estimates do not provide adequate data on exclusive breastfeeding, which adds to the current confusion. In addition, the methodologies used for data collection in many studies are questionable. For example, the duration in Huffman's study may be overestimated due to the fact that the sample consisted of re-interviewed, married, non-menstruating women (Forman 1984). Huffman found that half of the infants had died by 1 year, however of the surviving infants, 98% were still breastfeeding (Huffman 1980).

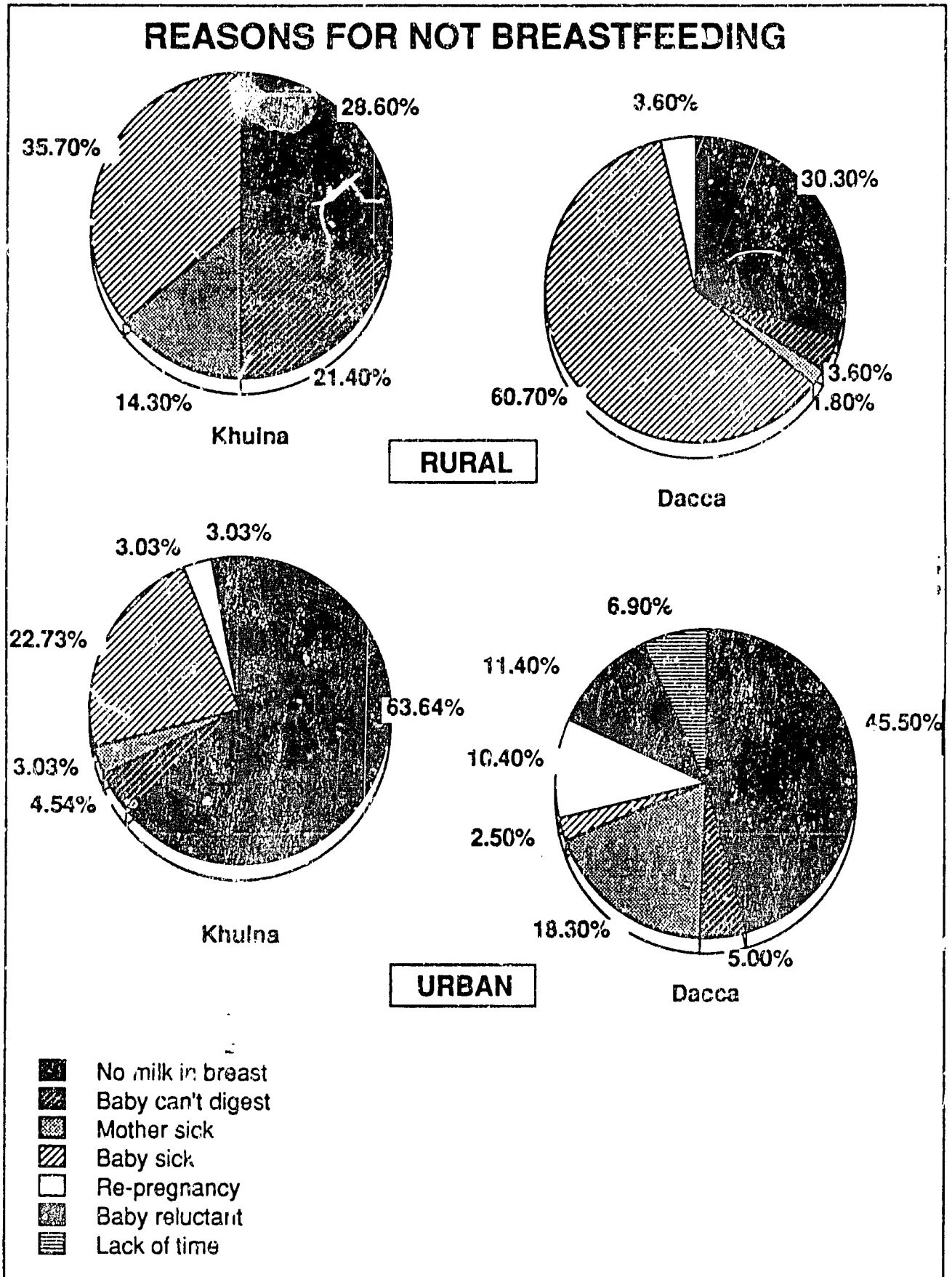
According to Forman's analysis of breastfeeding data, the danger is not with prolonged breastfeeding, but rather the late introduction of inadequate amounts of complimentary foods, coupled with a reduced consumption of breastmilk Exclusive breastfeeding is being replaced by mixed feeding (Latham, et al 1986) and the fact that younger women are feeding for shorter periods of time lends support to this conclusion (Forman 1984).

DETERMINANTS OF BREASTFEEDING

Age, parity and place of residence strongly influence whether or not a women in Bangladesh will breastfeed. Women with more education and users of modern contraceptives tend to feed for shorter periods of time. Work outside the home and the desire for more children are also associated with a shorter duration of breastfeeding (Smith 1984, Huffman, Khan).

The reasons for not breastfeeding vary and are dependent to some extent on the questions asked by investigators. In a 1980 study by Khan, the primary reason for not favoring breastfeeding in urban and periurban areas of Dacca and Khulna was that mothers feared that the contour of their breasts would be changed (51% urban, 40% periurban in Dacca and 45% urban, 33% periurban in Khulna). Illness in the mother ranked second (urban Khulna was higher than Dacca), however the investigators expressed doubts that this was a valid reason for not breastfeeding. No data was given to confirm this

Figure 8



Source: Khan, Bangladesh Institute of Food and Nutrition, Dec. 1980

impression. The third most common reason given was "milk insufficiency" (16% in urban Dacca, 21% in urban Khulna). The authors suggested that women did not have an adequate diet during pregnancy. The majority of mothers who cited "insufficient milk" gave birth in sophisticated clinics and were using oral contraceptives. (Figure 8)

There is more information available on the reasons for stopping breastfeeding in the latter months than in the critical early weeks when lactation is being established. Reasons for stopping include death of the infant, repregnancy, insufficient milk and "the child is too old to breastfeed." Little data exists on the impact of artificial milk products in the marketplace and the advertising practices of the formula companies and infant food industry. Teats, bottles and milk substitutes are readily available in the urban, periurban and rural areas of Bangladesh. In a visit to Save the Children Hospital in Dacca, 9 out of 17 mothers with malnourished children were observed to be using medicine bottles with teats which they carried in their bags (Baumslag 1979). This suggests that bottlefeeding is more widespread than is currently believed and further in-depth investigations into breastfeeding practices in Bangladesh are needed.

SUPPLEMENTATION AND WEANING PRACTICES

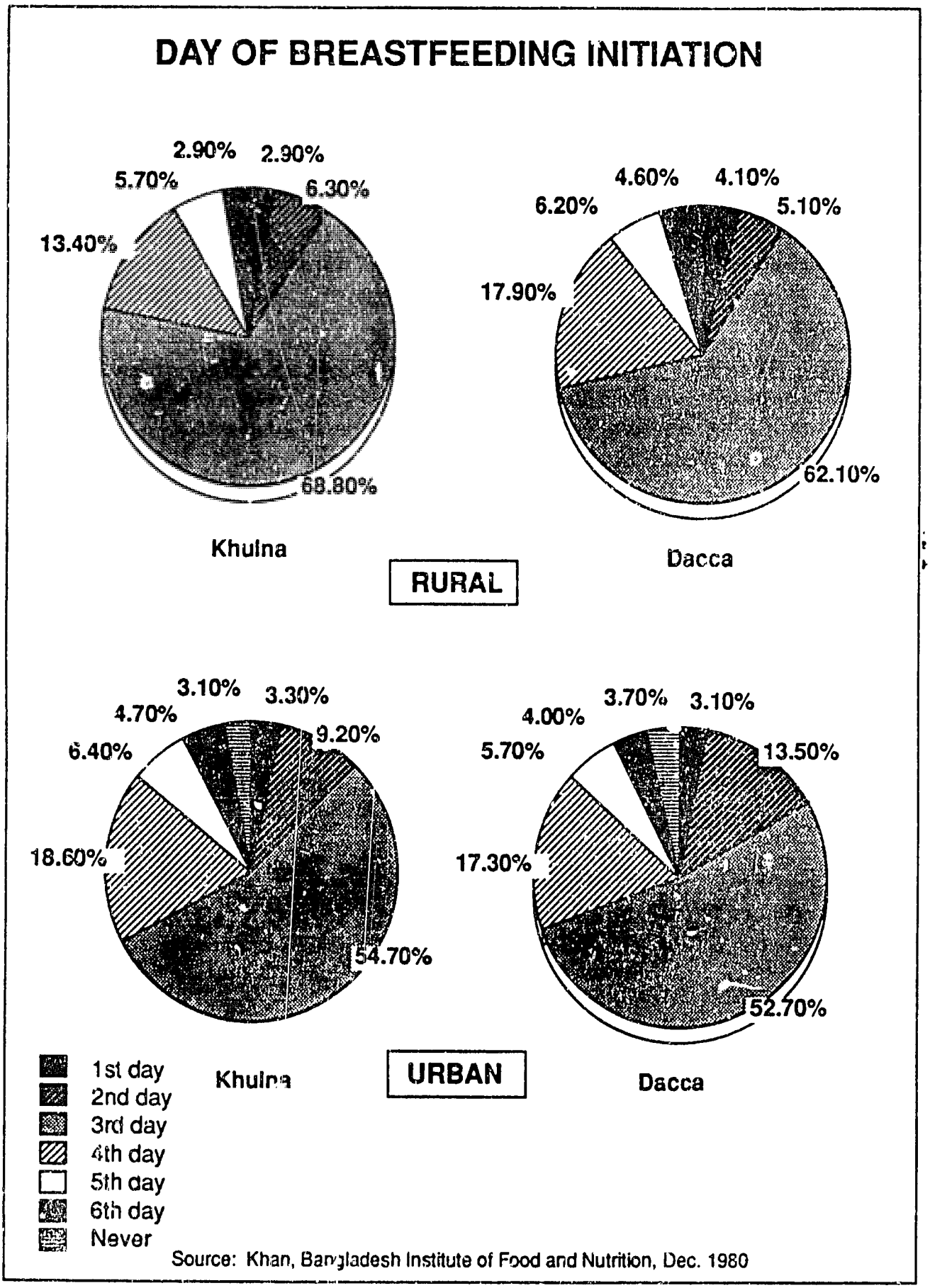
The early introduction of liquids and foods to the newborn in addition to breastmilk is not well documented. In many cultures, since time immemorial, colostrum has been regarded as harmful and replaced by other liquids until the mother's milk turned "the right color" (Baumslag 1987). In Bangladesh many newborns are traditionally fed "heating foods" such as honey, sugar water, and mustard oil, which are believed to give strength and prevent colds during the newborn's first few days (Vermury, Ahmed, Huffman). The data from Dacca and Khulna (Figure 9) indicate that this practice is widespread (Khan 1980). Discarding colostrum and giving the newborn supplements, which are often unhygienic and harmful (honey may contain botulism spores which are lethal to newborns) is an even greater problem where the incidence of low birth weight infants is high, as in Bangladesh (50%). Milk consumption was not sufficient to promote the complete catch-up of growth in low birth weight infants in a study by Brown in 1982. Hart found that by establishing breastfeeding and educating mothers the mortality for low birth weight infants in the first year of life was reduced.

Little data exists on infant feeding practices during the first few months after birth in Bangladesh and few of the available studies make it clear at what age supplements were introduced or how frequently. In a 1986 study by Zeitlin, by 6 months 83% of breastfeeding mothers had given their infants cow's, goat's or powdered milk, 63% had given diluted rice paste and 25% had added biscuits to their infant's diet. By their first birthday most infants have received supplements of non-breastmilk (98%), biscuits (95%), powdered rice (96%) and banana (89%) and by their second birthday most infants are receiving an adult diet (Khan, Huffman, Vermury, Brown). A small longitudinal study of 70 rural infants (Brown 1982) found that over half were receiving cereals in some form and that by 30 months few infants were receiving meat, eggs, green vegetables or fish. Males received more dairy products and breastmilk than females, a finding not confirmed by other studies.

In general, the diet of most weanlings was severely limited both in quality and quantity which was further aggravated by seasonal variations. The average energy consumption was approximately one third greater during the post harvest period than the preharvest period. Illness in the infant also affected dietary intake, possibly related to fecal indicator organisms in weaning foods (Brown 1982).

In an A.I.D. funded observational study conducted in rural Bangladesh, infants were not exclusively breastfed for long (Zeitlin 1986). Contrary to expectations, mothers fed their infants frequently, but the amount and quality of the food was inadequate.

Figure 9



Source: Khan, Bangladesh Institute of Food and Nutrition, Dec. 1980

Food which was not freshly prepared was usually contaminated. This was a major problem when supplementary foods were introduced in large amounts to infants aged 19 to 21 months and was also observed by Brown, et al. In addition to contamination of food, problems with childcare and productive domestic and/or income generating work increased infants risk for malnutrition (Zeitlin 1986).

Bangladesh has not developed or subsidized centrally processed weaning foods at market value, however the Bangladesh Rural Advancement Committee (BRAC) and Tufts University, Boston, are working towards developing soft and wet weaning foods for infants. A mix of foods available in the home such as rice, wheat, pulses, vegetables and oil or oil and sugar mixes, porridge (suji) and chapati has been shown to markedly improve infants nutrition (Ahmed, et al 1981).

It is generally agreed that supplements should not be introduced before the infant is 4-6 months of age. Even in marginally malnourished women, breastmilk is sufficient to sustain growth and maintain optimal health in most infants. Bangladeshi mothers are among the most malnourished in the world. The maternal depletion syndrome is so well known that there is a special vernacular name for it, sutika (Baumslag 1985). In Bangladesh the average growth in infants of marginally malnourished mothers during the first 4 months of life approximated the fifth percentile of the US National Center for Public Health Statistics. It should be noted however, that the National Center for Public Health Statistics reference population is derived from middleclass, white American, non-breastfeeding infants and is not an appropriate reference population for breastfeeding infants in developing countries.

MORTALITY AND MORBIDITY

Shigella diarrhea was found to be more common in infants who were not breastfeeding and the episodes in breastfeeding infants were milder (Clemens 1986). Infants were more likely to be weaned within a month of an attack of bloody diarrhea and the case fatality rate was higher in weaned infants (Briend, et al 1987). The results of this study are consistent with previous studies showing a higher frequency and greater severity of bloody diarrhea in non-breastfed infants as well as the protective role of breastfeeding against rotavirus, Campylobacter jejuni and enterotoxigenic Escherichia coli (Stoll, et al 1982 and Glass, et al 1986). Studies indicate that IgA anitbodies found in breastmilk protect infants against cholera (Glass, et al 1983). A study conducted in 1985 and 1986 in rural Bangladesh to identify simple characteristics in children with a high risk of death found that one third of deaths between 18 to 36 months were attributable to the absence of breastfeeding (Briend, et al 1987).

LACTATION DIET

For Muslim women there is a "pollution period" of 6 to 45 days after delivery and they may not eat any animal food for up to 6 months. During the "pollution period" a woman may be prohibited from eating fish, certain green leafy vegetables, shrimp, mangos and jackfruit. When infants become sick, mothers change their diets in the belief that their breastmilk is responsible for the illness. When counseling women, it is important for health workers to be aware and sensitive to mothers' cultural attitudes, beliefs and knowledge with regard to breastfeeding practices.

LACTATION CONTRACEPTION

Data from the Matlab Thana (Natural Fertility Study) of 2444 rural women revealed that with weaning the probability of conceiving increases, presumably as the result of decreased levels of serum prolactin which inhibits ovulation. Women who have completely weaned their infants within the past three months are the most likely to con-

ceive (John, Menken 1986). However, Huffman failed to find any correlation between suckling and return of menses, probably because her analysis was limited to 8 hours a day (Forman 1984). The concept of lactation contraception has often been difficult for modern health workers to accept because their training is primarily technological in orientation, rather than biological, and the important role of prolonged lactation in child spacing in developing countries has only recently been recognized (Chen 1984). There is evidence that maternal malnutrition may extend post partum amenorrhea. The contraceptive effect of lactation is greatly reduced if breastfeeding is partial or supplemented early with other milk or foods. The use of pacifiers or any other practice which reduces sucking stimulation and therefore the secretion of prolactin, also increases the chances of conception.

AVAILABILITY OF FORMULA

Artificial milk products, teats and feeding bottles are widely available in Bangladesh, even in diarrheal centers. There is anecdotal evidence that health workers in both urban and rural areas, are given samples of formula which their wives use. In a study by Taluker, 19 brands of formula were available in the market areas. These products cost TK 50 per 100 ounces, compared to TK 18 for the equivalent amount of cow's milk. The monthly expenditure for an infant aged 3 months, consuming 20 ounces of milk per day is over TK 250, an amount greater than the total monthly income of most Bangladeshi families.

BREASTFEEDING PROMOTION ACTIVITIES

In Bangladesh there is increasing public awareness, through the use of the media and organizations like the Consumers Union of Bangladesh, on the advantages of breastfeeding (Jelliffe). Women's clubs offer breastfeeding education through funding from the Ford Foundation. The Community Health Research Association (CHRA) is conducting an educational campaign at various women's colleges and UNICEF, in collaboration with Child Nutrition Units, are combining health and nutrition education with an on-site feeding program (UNICEF Country Programs Report 1986).

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

In May 1984 Bangladesh adopted a Breastmilk Substitutes Regulation/Marketing Ordinance which prohibits the promotion of breast milk substitutes and any advertising which suggests that artificial milk is superior or equivalent to breastmilk. The Ordinance sets labelling standards for breast milk substitutes and provides for the establishment of an advisory committee to advise the government on the proper implementation of the International Code.

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BURMA

According to available studies, breastfeeding is common practice in Burma, in both the rural and urban areas and most Burmese mothers believe that breastmilk is good for their babies. Few studies on breastfeeding practices in Burma exist however, and most are not current.

PREVALENCE DURATION AND PATTERNS

Figures for the prevalence, duration and patterns of breastfeeding in Burma vary. In a 1979 study, in infants under the age of 6 months, 69% were breastfed exclusively, 11% were breastfed partially and were receiving artificial milk and 20% were given weaning foods in addition to breastmilk. No infants less than 6 months were bottlefed exclusively. Among the infants aged 6 months to 2 years, 99% were ever breastfed, 0.96% were artificially fed and 5.7% were breastfed exclusively (Maing, et al 1979). A 1986 study indicated that only 38% of rural mothers breastfed their infants (USAID Burma 1987), while a 1986/87 Rapid Assessment of 1,841 cases found that 97% of mothers breastfed. The length of exclusive breastfeeding in Hlegu township averaged 4.9 months in a 1979 study by Maing, et al.

Prolonged lactation has been observed to be common in the rural communities. It has been reported that 11% of infants older than 3 years breastfeed, in contrast to 95% of infants up to 18 months. The duration of breastfeeding appears longer for rural infants (up to 1 and 1/2 years) than for urban (6 to 8 months), and urban infants are generally weaned at an earlier age than rural (USAID, Burma 1987). A 1981 study found that 98% of infants are completely weaned from the breast by age 2 (Tin U. and Kyaw Myint T.O.).

The use of artificial milk appears to be more prevalent in the urban areas (16.7%) than in the rural (8.7%) (Nyi Win Hman 1985, cited in USAID Burma 1987). A 1970 report estimated that as many as 30% of urban mothers were using artificial milk in addition to breastfeeding.

In the rural areas, breastfeeding is initiated on the average by the second day postpartum. Within 12 hours, 42% of newborns have initiated breastfeeding, and of the 58% beginning after 12 hours, 24% begin more than 72 hours after delivery. A 1987 survey confirmed that 48% of newborns initiated breastfeeding with in 12 hours (USAID Burma 1987).

Demand feeding is customary among both urban and rural mothers (95% and 97% respectively), however, urban mothers practice demand feeding to a greater extent and tend to feed more frequently.

DETERMINANTS OF BREASTFEEDING

The majority of deliveries in Burma take place at home, with nurse midwives, traditional birth attendants (TBAs) and lay home visitors usually assisting. The 10% to 12% of births that take place in hospitals are generally high-risk.

In a 1969 study of 1223 infants, 64.2% were breastfed exclusively, 29.7% were partially breastfed and 6.1% were bottlefeeding exclusively. The primary reasons cited for exclusive bottlefeeding were: absence of breastmilk (40%), work (33.3%), poor health of the mother (17.3%, including breast abscess in 6.6%), and poor health of the infant (5.4%). The reasons for breastfeeding with supplementation included: insufficient breastmilk initially (51%), work (37.2%), and poor health of the mother (5.5%). The mean age for taking the infant off the breast was 13.5 months, with the major reasons being: next pregnancy (64.7%) and in 13.1% of cases, insufficient milk (Myint, et al

1979). It is worthwhile to note that in this study "purely breastfed" was defined as "those fed mother's milk without interruption from birth until 6 months of age and includes children who are being supplemented with foodstuffs other than artificial milk during the same period."

Sudden "shock" is believed to stop lactation and is potentially serious as in these cases breastfeeding is terminated. There is a belief that if an infant does not nurse for a day, the milk spoils, and the infant is put back on the breast after the milk is expressed (Zeitlin 1981).

Breastfeeding is often a problem for working mothers who do not have time to nurse every few hours and for mothers whose breastmilk dries up when they feed substitute milk for a period of time (USAID Burma 1987).

SUPPLEMENTATION AND WEANING PRACTICES

A 1981 study found that only 57% of mothers in the rural areas fed their newborns colostrum. A rapid assessment field survey in 1986 reported that 59% of mothers gave colostrum to their newborns. However, a 1981 survey conducted nationally by Satoto found that the practice of discarding colostrum was almost universal. The mothers regarded their colostrum as dirty, bad and too thick for their newborns and prior to the initiation of breastfeeding the colostrum was expressed. The first feeding given to newborns was generally boiled water with honey. Rice water and glucose were also given and some infants were not given any nourishment for up to 48 hours (Satoto 1981).

Figure 10

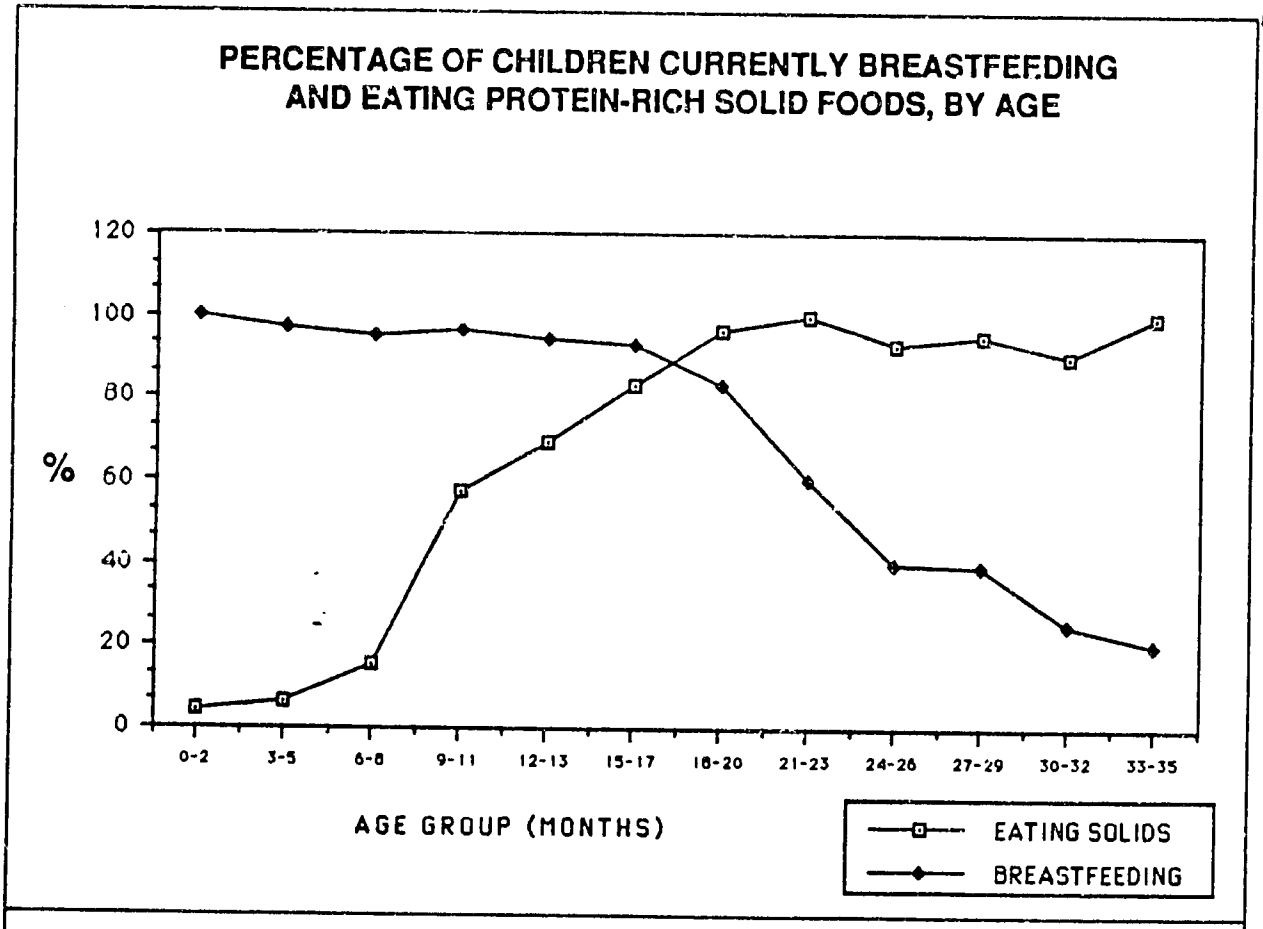

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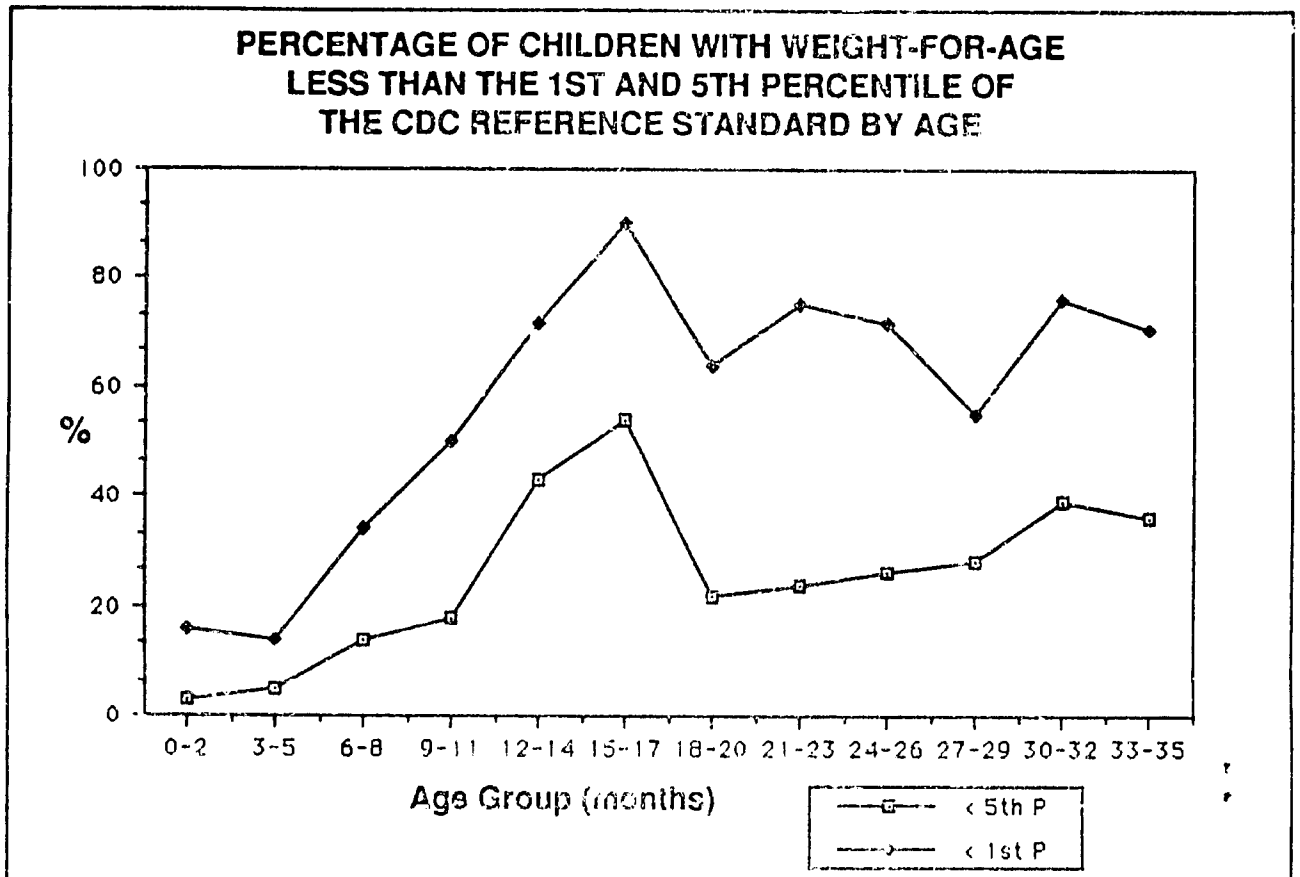
Figure 11



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Myint, et al, in 1979 found the mean age for introduction of supplementary feeding was 6.5 months. A 1986-1987 survey of 1,841 cases showed that 39% of infants received supplementary food before age 4 months, 29% between 4 to 6 months, 21% between 6 to 9 months and 11% between 9 to 12 months (USAID Burma 1987). In a 1969 national study, 25% of infants received supplementary foods by age 2 months and approximately 50% by age 4 months. By the age of 12 months the majority of infants were mixed fed. Animal or vegetable protein was given to 25% of infants at age 6 months, and approximately 50% by 10 months (Oo and Mint 1981).

A study of weaning foods and practices among infants in a rural area indicated that by 3 months of age, 11.1 percent had received supplementary foods and by 6 months the figure was 43.2%. Weaning practices were generally found to be simple in the rural areas. The weaning diet often begins with rice, oil and sometimes biscuits. Protein-rich foods, such as fish, meat, eggs or pulses were usually not given to infants less than 1 year of age. Children began receiving protein-rich foods at about age 15 months. The study found that the mean daily protein and energy intake for infants age 6 to 12 months was deficient, even on the basis of actual body weight. (Figure 10,11)

A survey found the most common weaning food to be boiled rice (62%). This is first chewed by mothers (particularly village women) before it is given to infants. Over-diluted rice gruel may also be given, as well as rice and oil mixtures (USAID Burma 1987). The same survey found that the feedings per day were 2 or 3 and very few were given 4 or more feedings daily.
(Table 5)

Meat (13%) and fish (15%) are often not given to young children in the belief they cause worms ("Worms" may be an interpretation of loose, frequent, but not watery stools). Animal protein was stated to be too expensive in many cases. Pulses are believed to cause diarrhea and are not given to 14% of infants. Eggs are believed to cause putrid stools are are not given to 12% of infants. Some vegetables are thought to cause indigestion. Jaggery (brown sugar), peanuts and bananas (except for one type) are considered to cause coughing (USAID Burma 1987).

When a child is ill, breastfeeding is continued, however foods are withheld. Following measles, a child's diet is restricted for 2 weeks. Poor weaning practices include giving infants meals which are too small and of low calorie density, and infrequent feeding.

MORTALITY AND MORBIDITY

The percentage of Burmese children who are below the first and fifth percentile increases dramatically throughout the first year of life. The level of undernutrition is less among infants consuming breastmilk exclusively (Frerichs 1988).

The official infant mortality rate for Burma is listed as 56/1000 live births, however, Burmese officials believe it to be closer to 100/1000 live births. Early marasmus has been found to be much less common than late marasmus. The cases of early marasmus are thought to generally be due to mothers leaving their babies at home while they go to work or in some cases, inadequate lactation caused by early supplementation (Jelliffe, cited in Israel).

LACTATION DIET

It appears that lactating mothers do not eat greens for fear of giving the infant colic or a green stool. An exception to this is during the first 7 days postpartum, when a special soup of drumstick leaves or other greens and dried or fermented fish is prepared for the new mother. In lower Burma, lactating mothers do not eat pulses for fear that it will give their infants gas. Pregnant women restrict their quantity of food, especially bananas, for fear of delivering an infant which is too large. Spicy and bitter foods are thought to cause abortion.

Table 5

"RAPID ASSESSMENT INSTRUMENT FOR FIELD USE IN BURMA"
(a model)

INFANT FEEDING PRACTICE AND PATTERN OF SUPPLEMENTARY FEEDING AT STATE/DIVISION.
1986 - 1987

S. State/ N. Division	Breast Feeding Pattern								Pattern of Supplementary Feeding to Infants																					
	Breast Feeding %		Bottle Feeding		Supplement with Breast Feeding		Colostrum %		Starting Age (month)				Type of Food				Modes of Feeding				Frequency of Feeding				Type of Food Added				
	Fed	Not Fed	<12hr	>12hr	Yes	No	Given	Don't Know	-	4-6	6-9	9-12	Rice	Rice & Oil	Rice & Jaggery	Pulses	Cup	Spoon	Mouth	Bed	1	2	3	4	Milk	Fish	Egg	Meat	Pulse
Rapid assessment of nutrition situation (JNSP) Nutrition Section n=1841	97	3	48	52	10	90	24	76	39	29	21	11	62	21	8	10	52	23	35	13	6	56	42	2	13	15	12	9	14
Ad-hoc survey in Pagan Nyaungoo tp. (1986) n=1603			50	50			58	42	42	33	14	9									3	37	52	6					
Ad hoc survey in Amarapura tp. (1985) n=1566			52	68			60	40	4	16	16	64									3	34	52	9					

Source: Frederichs, R., Tar, k., Breastfeeding, dietary intake and weight for age of children in rural Burma, Asian Pacific Journal of Public health, Vol 2 No. 1, 1988

Exclusive breastfeeding not defined.

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

No information on the marketing code or government legislation and policies was available in the documents reviewed.

AVAILABILITY OF FORMULA

No information on the availability of formula could be found. In one survey where mothers were using artificial milk, 91% purchased milk powder; 5% used condensed milk and the remainder used cow's or goat's milk. 58% of the mothers prepared the powdered milk without directions, 23% followed instructions from health literature or advice from health workers and the remainder followed the instructions on the label.

MATERNITY BENEFITS

A minimum of 12 weeks paid maternity leave is provided to mothers. The salary during leave is 2/3 of wages, which is paid by social security or insurance. Enterprises employing more than 50 women must provide care for infants under the age of 6. Dismissal during maternity leave is prohibited. Nursing breaks are not provided. (Clearinghouse on Infant Feeding and Maternal Nutrition 1986)

BREASTFEEDING PROMOTION ACTIVITIES

No information on breastfeeding promotion activities in Burma was available in the documents reviewed.

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INDIA

PREVALENCE DURATION AND PATTERNS

Most of the data on breastfeeding in India comes from a few very large cities and as such cannot be taken as representative of this vast country. Furthermore, different definitions of breastfeeding and problems with study design and methodology make generalizing the data difficult. As in other countries, regional patterns and urban/rural differences exist, however, in every region the overiding trend is towards an increase in the use of breast milk substitutes. (Table 6)

In a large sample of infants from Hyderabad (in Andhra Pradesh), ever breastfed rates (there was no specification for exclusiveness) ranged from 96% to 100% for all socioeconomic groups in both urban and rural settings. At 18 months, the percentage of infants still breastfeeding was 20% for urban rich, 40% for urban middle-income, 90% for urban and 96% for rural poor (WHO 1981). In this study the groups selected were not representative samples. The average duration of breastfeeding was estimated to be 24.5 months for rural and 18.5 months for urban infants (Agarwal, et al 1982).

According to a study by Bai, at 6 to 9 months exclusive breastfeeding was practiced by 38.4% and 27.2% of rural and urban mothers respectively. However, different methods were used to obtain data from urban and rural mothers, making this data not ideal for comparison.

Another study found that 35% to 66% of infants were exclusively breastfed up to 4 months, and 9% to 21% beyond 6 months. In Chandigargh (Punjab State), 36.6% of infants under 4 months were exclusively breastfed and 45.5% were mixed fed. In this study mixed feeding was defined as breastfeeding with at least one supplementary feeding per day of milk substitutes or semisolids. Participation in the study was voluntary. For those who were eligible, however the response rate was not reported (Kumar, et al 1984).

Dattal, et al in 1984 reported breastfeeding rates of 96% in urban and 99% in rural areas in samples of women with at least one child under age 5. Breastfeeding continued beyond 24 months for 60% of rural infants, but only 30% of urban infants.

Contrary to most studies, Pal (1984) found that breastfeeding practices were more favorable among urban mothers than rural. 82% of urban mothers breastfed for up to 6 months, compared to 54.7% of rural mothers, and 64.6% of the former continued to breastfeed for up to 1 year, while only 27.4% of the latter did so. These findings were from a relatively large sample from West Bengal and compared middle class urban women to rural women of lower education and income. Women outside this criteria were excluded. The author concluded that the longer breastfeeding practices among more privileged urban women were in part due to the advocacy of pediatricians, who were better informed on the merits of breastfeeding. Women from the lower socioeconomic group were less likely to seek the services of a pediatrician or other specialists for economic reasons. The study methodology would have been stronger if the hypothesis had been substantiated by documentation of the infant feeding policies among the medical community in the West Bengal area at that time.

In a 1984 study in Bombay, Calcutta and Madras, conducted by the Nutrition Foundation of India, initiation of breastfeeding was almost universal in poor groups and lactation failure was rare. Exclusive breastfeeding (defined as only breastmilk, no supplements) declined at the end of the 4th month to 66% in Bombay, 35% in Calcutta and 45% in Madras (Gopujkar, et al 1986). (Figure 1)

In the majority of studies, the reported duration of breastfeeding is long. By 12 months, more than

85% of infants in Bombay are breastfeeding, 90% in Calcutta and 70% in Madras (Gopujkar, et al 1986). A 1981 WHO study found that 95% of rural women breastfed for 18 months or more. However only 29% of women in the economically disadvantaged group were breastfeeding their infants at age 18 months. "Inflated durations should not give room to the complacent that breastfeeding is undisturbed. There are disturbing danger signals, which if not heeded in time, could seriously worsen the current situation with respect to the health and nutrition of India's infants." (Gopujkar, et al 1986).

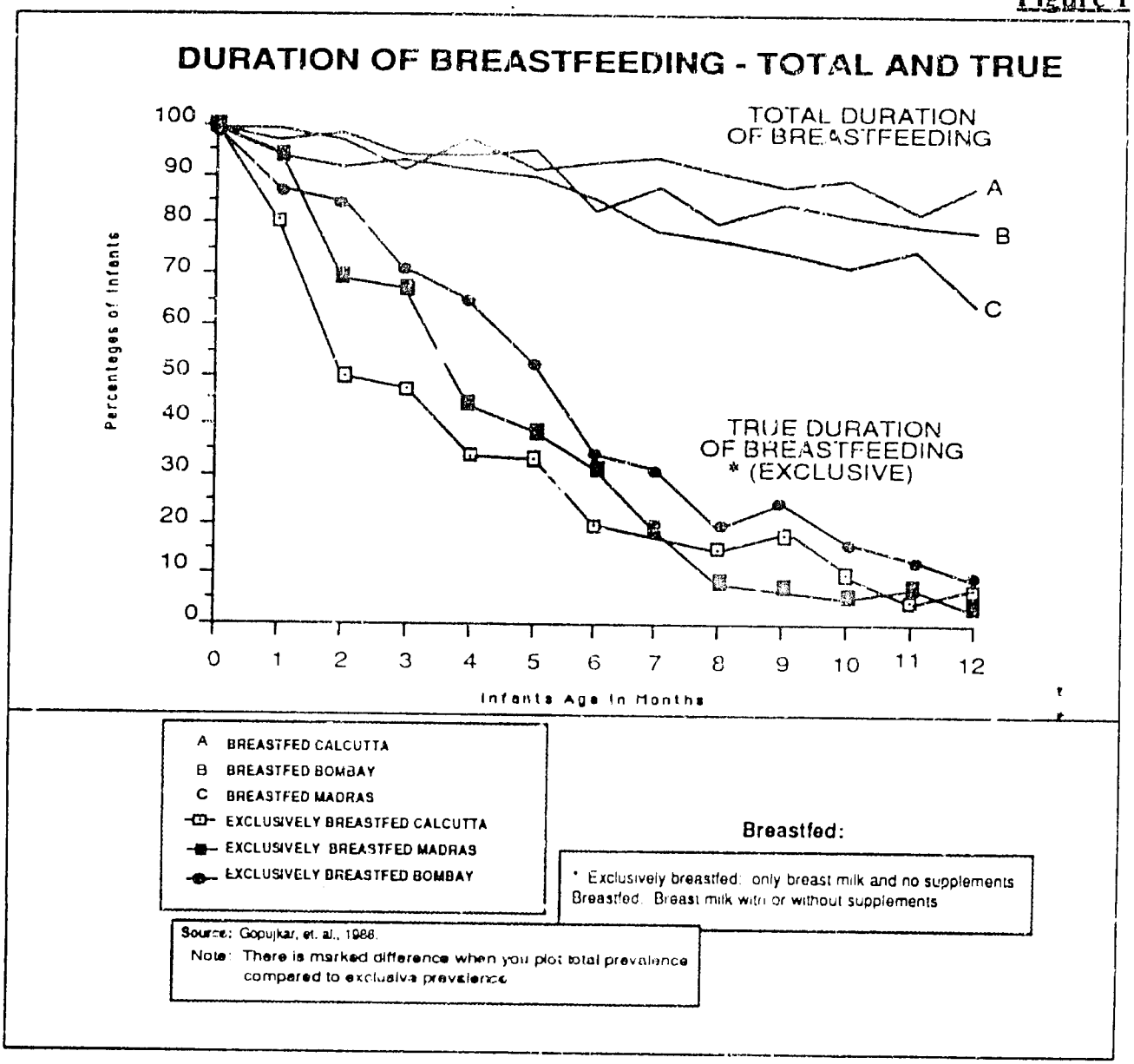
Naranayan (1987) found that breastfeeding duration for all patterns is longer in lower socioeconomic classes and in rural women. This is supported by Agarwal, et al (1982) for Varnasi, Dattal, et al (1984) for Himachal Pradesh, and Dai and Reddy (1981).

Table 6

SUMMARY OF BREASTFEEDING RATES - INDIA

AREA	YEAR	SAMPLE			BREASTFEEDING		DEFINITION	REFERENCES
		N	Site (a)	U/R (b)	Rate (%)	Ave. (mo) duration	(c)	
Andhra Pradesh:								
Hyderabad	1977	4022	mc mc	U R	96-99 100		EB	W.H.O. 1981
Hyderabad (employees)	-	410	mc	U	34		ns (prevalence)	Thimmayama et al. 1980
Tirupati Kambadur	-	1000 (0-2)y	sc hh	U R	27 38		EXC (for 6-9mo)	Bai et al. 1981
West Bengal	-	1000	-	U R	82 55		ns (up to 6 mo)	Pai 1984
Himachal Pradesh	1978/79	548 (0-5)y	- -	U R	96 99		ns (initiation)	Dattai et al. 1984
Uttar Pradesh:								
Varanasi	1976/77	359	hh hh	U R		18.5 24.5	ns	Agarwasl et al. 1982
Tamilnadu:								
Vellore	1974	74 (3-6 mo)	hh	R	58 42		EXC (for 6 mo) M (by 6 mo)	Sathian et al. 1983
Vellore	- -	384	sc	U	40 59		EXC (at 12 mo) M (by 12 mo)	Asha Bai et al. 1980
Delhi	1982	550	sc	U	62		ns (initiation)	Guha et al. 1984 (b/f promotion)
3 cities: Bombay, Madras & Calcutta	-	4926	mc	U	 35-66 9 - 21 70-90		EXC (up to 4 mo) (over 6 mo) M (by 4 mo)	Gopujkar et al. 1984; Anon '85
Punjab:								
Chandigargh	-	670 (6 mo)	mc	U	37 45		EXC (up to 4 mo) M (by 4 mo)	Kumar 1984
South Orissa	-	460 (3-18 mo)	sc	U	100 90		ns (inititation) (over 6 mo)	Davi 1980

Figure 1



DETERMINANTS OF BREASTFEEDING

Rooming-in is a univeral phenomenon in almost all hospitals, clinics and maternity facilities in India. In a small percentage of maternity settings, rooming-in is not available for high-risk and cesarean section cases (Roger Rochat, personal communication).

A WHO collaborative study found that less than 15% of mothers in the rural areas were delivered in clinics or hospitals. Women who delivered in their homes had a higher rate of breastfeeding. Other factors which were associated with a higher rate of breastfeeding were: parity (Devi and Behera, 1980), higher education and socioeconomic status (Devi and Behera 1980, Kumar, et al 1984, WHO 1981), paid employment outside the home and male infants (Kumar, et al 1984).

No association was found between low birth weight and the prevalence of breastfeeding in a 1974 study. In lower socioeconomic groups in urban and rural areas, the average weight for age fell below that for infants from higher income groups. This was particularly marked in infants between 9 to 12 months of age (Gopujkar, et al 1986).

The most common reason for stopping breastfeeding was "insufficient milk" (Gopujkar, et al 1986). Other common reasons were: infant refused to suck, repregnancy, illness in the mother, illness in the infant, mother working (greater in Bombay) and anemia in the infant (Narayanan, et al 1987). Women in upper socioeconomic groups stated that insufficient milk, need to return to work and wanting to begin the weaning process, were the primary reasons for introducing foods to their infants.

SUPPLEMENTATION AND WEANING PRACTICES

The practices of delayed initiation of breastfeeding (after 24 hours) and discarding colostrum were prevalent, especially in Bombay and Madras (Gopujkar, et al 1986, Guha and Sharma 1984). These practices were less widespread in Calcutta and Delhi. Dattal, et al (1984) reported that 59.2% of mothers in urban areas had initiated breastfeeding within 49 to 72 hours after delivery. Approximately half of the rural mothers and 13.6% of urban mothers in the sample initiated breastfeeding within 12 hours of giving birth to their infants.

Agarwal, et al (1982) found that 71% of their study population in Varanasi delayed breastfeeding until the third day postpartum, in the belief that colostrum was detrimental to their babies health. In place of colostrum, 73.3% gave their infants cow's or goat's milk and the remainder gave water, honey or powdered milk. In South Orissa 83% of the survey participants followed this same practice, with approximately half beginning to breastfeed on the third day (Devi and Behera 1980).

A sample of 197 mothers from a rural village in Pondicherry fed their newborns tea or sugar water for 3 days before initiating breastfeeding in the belief that colostrum was harmful (Narayanan, et al 1974).

In 1987 Narayanan used a questionnaire to interview mothers to collect retrospective breastfeeding data, however, no tests of significance were conducted. The findings demonstrated that both the timing of the introduction of breastmilk supplements and the duration of breastfeeding differed according to socioeconomic status; 47% of mothers introduced artificial milk by 6 months, 78% were giving coffee to their infants beginning in the first year and by age 2 years 90% of infants were no longer breastfeeding. For the 137 mothers in the lower socioeconomic group, supplementation with milk or other ancilliary beverages was not affordable and breastfeeding continued for an average of 2 years, at which time solids were introduced.

Researchers have been concerned that a sizable proportion of mothers breastfeed beyond 6 months without offering adequate nutritional supplemention to their infants. In a study conducted in 1984, by the end of 8 months 21% of infants in Bombay, 14% in Calcutta and 9% in Madras were still exclusively breastfed (Gopujkar, et al 1986). However most of the studies indicate that the vast majority of mothers begin supplementing their breastmilk within a short time after delivery. Gosh (1977) interviewed 802 randomly selected mothers with children aged 2 to 4 years in an urban community. All were exclusively breastfed at birth, however by 3 months 48% of mothers were giving supplements: 42% were giving buffalo milk, 38% artificial milk, and 20% were giving a combination. 23% of infants were weaned by the age of 6 months, another 57% had stopped breastfeeding by 12 months and the remainder had stopped by 20 months. Solids were generally introduced between 13 to 18 months. Gosh also found that mothers under the age of 20 tended to breastfeed longer than 6 months.

In Varnasi researchers found that supplementation with diluted cow's milk was earlier for urban infants than for rural poor. Supplementation with semisolids was generally late, between 7 to 12 months, with 22% of rural infants and 32% of urban infants receiving supplementation by this

time. By 13 to 24 months these figures increased to 64.5% and 49% respectively (Agarwal, et al 1982). In Andhra Pradesh supplementation began after 6 months for all rural infants, however only 27.8% of urban infants under the age of 6 months had received any liquid breastmilk substitutes. At 6 months semisolids were given to 4% of rural infants and to 13.2% of urban. By 9 months this disparity had diminished with 61% of rural and 66.8% of urban infants receiving semisolids (Bai and Reddy 1981). The introduction of semisolids varies not only from urban to rural areas but also among different ethnocultural groups.

Earlier supplementation was reported by other studies. By 6 months 85% of urban and 55% of rural infants had been introduced to supplementary milk feedings and a larger majority by 12 months. The addition of semisolids was slower for rural infants, 40.7% by 12 months, than for urban, 73.3% (Dattal, et al 1984). The average age for the introduction of supplements was 2.2 months (+/- 1.26 months), with most infants given semisolids by age 4 months according to one survey of mothers employed outside the home (Thimmayamma, et al 1980).

Supplementary foods generally consist of tinned or animal milk, sugar water, barley, sago and arrow root juices (Devi and Behera 1980). Semisolid and solid infant foods given are usually cereals and pulses (Bai and Reddy 1981). Animal products are rarely given, largely due to the Hindu vegetarian cultural practices.

Commercial milk was given in the first month to 3% of Bombay infants, 7% in Calcutta and 2% in Madras. Infants born in hospitals were more likely to receive commercial milk than infants born at home. Health workers were found to be recommending artificial milk even to poor families who could not afford it. Many rural poor who were giving artificial milk to their infants had no direct contact with health personnel (Gopujkar, et al 1986).

MORTALITY AND MORBIDITY

A 1975 study conducted in rural areas near Delhi found a significantly larger number of diarrheal episodes in infants 3 to 5 months of age who were partially weaned, than in infants who were exclusively breastfed (Ghai).

In a longitudinal study of 11 villages in the Khanna Region of rural Punjab India, virtually all infants who died in the first few months of life did not receive breastmilk (Wyon, et al).

Chandra, in a prospective study, found that breastfed infants had 1/2 the number of reported cases of respiratory infections and otitis media, 1/3 the number of episodes of diarrhea, and 1/4 the number of cases of dehydration and pneumonia.

LACTATION DIET

In rural areas of India, 76% of mothers believe that certain foods will affect their digestion or harm their baby during the lactation period (Bai and Reddy 1981). There are a large number of foods which are generally avoided including coconut, brinjal, chillies and fish. A special drink made from fried ginger, jaggery, black pepper and water may be given for 10 to 30 days to promote lactation (galactogogue). Pepper, garlic, ginger, betel leaves, mutton, goat's meat, sheep's milk, ghee, dried fish, chicken soup, curry sago with garlic and sugar, and prawns are thought to be beneficial to milk production. According to Joseph (1987), the earthworm is an effective galactogogue. Throughout India a large percentage of tribal women eat earthworms in dried, powdered, roasted and cooked forms to promote lactation.

LACTATION CONTRACEPTION

Cross-sectional studies in Hyerabad have examined the relationship between nutritional status and postpartum amenorrhea in low income, urban women. This study, which did not control for age,

parity or suckling patterns, reported that for lactating women weighing more than 54 kg, the median duration of amenorrhea was 8.2 months, compared to 13.1 months for lactating women weighing less than 40 kg. Women who gave supplements to their infants (in addition to breastmilk) between the ages of 0 to 3 months, had an average duration of amenorrhea of 7.6 months, whereas those who breastfed exclusively until their infants were over 2 years of age had an average duration of amenorrhea of 20 months. (Given the infant feeding patterns in the region, it is difficult to believe that women breastfed their infants "exclusively" (without any supplementation) for over 2 years.)

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

The Indian National Code for the Protection and Promotion of Breastfeeding was passed in 1983. It provides for the regulation of educational materials which promote bottlefeeding and stresses the financial implications and other hazards of its use. Donations of infant formula may be made only at the request and approval of the appropriate government authorities. No advertising to the general public is permitted. Marketing personnel are not permitted to seek contact with pregnant women or mothers with infants and young children.

AVAILABILITY OF FORMULA

In a study conducted by the National Foundation of India (NFI), nearly 24% of infants received commercial milk/commercial cereal with breastmilk and 7.5% of all infants in the study received commercial milk/commercial cereal without breastmilk. Bottles and nipples were used widely. Poor mothers generally used a single medicine bottle with one nipple, which was often left exposed, for administering artificial feeds. In the three centers examined by the NFI, the brands of commercial milk that were listed were: Angel, Amul, Bounce, Glaxo, Laxodex, Lactogen, Raptokos and Sapan. A number of commercial cereals were also available including Cerelec, Nestum (wheat and rice), Farex and Balamul (Gopujkar 1984). In this study no attempt was made to measure the quantity or frequency of formula, commercial cereal and baby foods being given to infants.

MATERNITY BENEFITS

The Government of India gives 3 months maternity leave to its workers. There is no additional leave for breastfeeding. The Ministry of Human Resource Development and many private institutions have creches for their employees.

BREASTFEEDING PROMOTION ACTIVITIES

In the studies reveiwed, one described a program to promote breastfeeding in a hospital in Delhi (Guha and Sharma 1984). Patients in the prenatal and postpartum periods were exposed to multiple interventions. These interventions included: physicians, nurses' and paramedics' advice, visual aids, audio-visual aids, and group discussions among mothers with physicians and nurses. Follow-up was for 6 weeks postpartum. No intervention succeeded in obtaining a 100% breastfeeding initiation rate, however the highest rate was achieved by the group receiving physicians' advice in the postnatal period (91.6%) and exposure to audio-visuals (90%). The success rates were lowest for visual aids, paramedics' advice and group discussions during the prenatal period, with the success rate for these interventions lowest for multiparous mothers. The over all breastfeeding initiation rate for the intervention group was 61%. The 6 week rate for the control group was 12.5%.

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INDONESIA

PREVALENCE DURATION AND PATTERNS

UNICEF data from 1980-86 estimated the prevalence of breastfeeding at 3 months to be 98%, at 6 months 97%, and at 12 months 83%. The pattern of breastfeeding was not defined and therefore the data does not reflect the rate of exclusive breastfeeding. Sutjipto, et al (1981) reported that at 1-2 months the prevalence of mixed feeding was 20%, with 40% of mothers bottlefeeding at that time. In most developing countries, where conditions are unhygienic, such a pattern is associated with increased mortality and morbidity.

Although the prevalence of breastfeeding is high, few infants are exclusively breastfed, even in the first month of life (Utomo 1984, Popkin 1982, CPS 1976, Piwoz, et al 1987, Kapsan, et al 1983, Karjati 1978). Only 39% of infants under 1 month of age were breastfed exclusively and by 2 to 6 months this figure had dropped to 12% (Kardjati 1978). A survey of 845 children attending health clinics also found that mixed feeding occurs early in Indonesia. By the end of the first month, 42% of infants were receiving semisolid foods and by 2 months this rate had increased to 65% (Kaspan, et al 1983).

Bottlefeeding is becoming more popular, especially in the urban areas, reflecting a lack of knowledge about the benefits of breastfeeding. The percentage of mothers practicing exclusive bottlefeeding was 31% in Medan (Sutjipto Adi 1975), 10% in Dempasar (Midajat 1982) and 31.5% in Solo (Tandijo 1982). Tarwotjo in 1987, found that the rate of bottlefeeding was increasing in both the urban and rural areas.

According to data from the World Fertility Survey, rural mothers breastfeed more frequently and for a longer duration than urban mothers. At 9 months, 90% of rural women were still breastfeeding their infants and 25% were breastfeeding at 3 years.

Cross-sectional studies of infants up to 2 years of age have demonstrated regional variations. In Medan breastfeeding prevalence was reported at 43% (Sutjipto, et al 1981). In Manado prevalence was found to be 50% (Munir, et al 1983, Piwoz, et al 1987).

Mean duration of breastfeeding varies from 24 months (WFS 1984, Ferry 1981) to a median of less than 3 months in "fully breastfed" (fully was not defined) infants (Utomo 1984). In the 6 cities surveyed (Jakarta, Semarang, Surabaya, Ujung, Pandang and Medan) in the Contraceptive Prevalence study, the duration for fully breastfed infants was slightly less than 3 months. Fully breastfed was defined as "not having fed the infant supplemental food." Median duration of breastfeeding was 15 months in Medan and 25 months in Semarang (Utomo 1984). Kaspan, et al (1983) found regional variations in breastfeeding practices and duration.

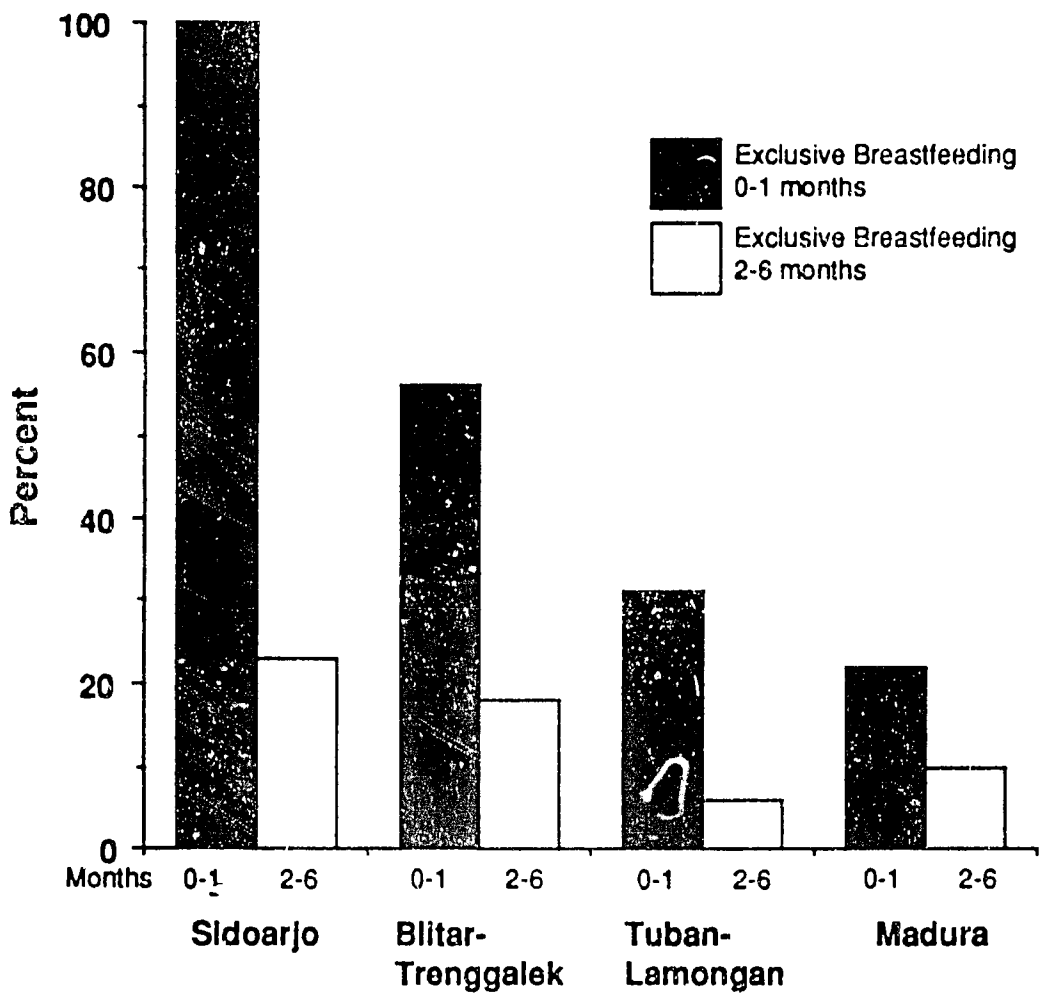
A clinic-based survey of 218 mothers in Manado found that the average duration of breastfeeding was 11 months (Arif and Ongkie 1984). A 1984 study by Bernard and Sastrawinata, based on a large cross-sectional sample from hospitals in 12 cities, found that 32% of mothers were breastfeeding for 12 months or longer.

Breastfeeding on demand is the most common pattern of feeding. The left breast is generally used more frequently to feed than the right because infants carried on the left side have access, leaving mothers free to continue to work with their right hand. In East Java some mothers believe that the left breast contains food and the right breast, medicine or water (Piwoz, et al 1987). Hardjah found that at 2-6 months only 2% were exclusively breastfeeding. (Figure 12)

DETERMINANTS OF BREASTFEEDING

Higher education and younger maternal age are associated with progressively declining rates of breastfeeding. 55% of mothers in their thirties with little education breastfed, compared to 18% of better educated mothers in their twenties (Bernard and Sastrawinata 1984). Younger women tend to have received more education than their older counterparts, therefore these variables may not be independent. In addition, recall bias for women with longer birth intervals may be a factor. Women with more than an elementary education breastfed for a mean duration of 13 to 14 months, while women with less than that breastfed for a mean duration of 18 months in Medan and 27 months in Serang (Utomo 1984).

Figure 12



(Based on total sample of 2117 mothers)

Source: Hardjah S., et al. Tropical & Geographical Medicine. Feeding Practices, Nutritional Status and Mortality in Pre-school Children in Rural East Java, Indonesia.

Formally employed women had a slightly shorter duration of breastfeeding, except in Medan where the duration was longer (no reasons were given). Women with higher parity (3+) tended to breastfeed longer, however the difference was not found to be significant (Kardjati, et al 1976).

By three months, the vast majority of mothers in Indonesia are not breastfeeding exclusively. A common reason given for stopping breastfeeding was "not enough milk" (Sutjipto, et al 1981, Utomo 1984). A common cause of "not enough milk" is infrequent suckling and early supplementation. Fifty percent of mothers surveyed discontinued breastfeeding because the child was old enough, others gave repregnancy as a reason (Sutjipto, et al 1981). Illness in the mother is also a common reason for no breastfeeding (Utomo 1984). Another study of 414 mothers found that one fifth were using formula at the advice of their doctor, and another third were giving their infants formula for other reasons including "insufficient milk" and employment (Arif 1984). Sutjipto did not find that employment was an important factor in stopping breastfeeding.

WEANING AND SUPPLEMENTATION

In the areas of East Java and West Nusatenggara the practice of discarding colostrum and administering prelacteal feeds of honey, young coconut, mashed banana, sugar water and powdered milk is common. Colostrum is discarded because mothers believe it causes vomiting, diarrhea and fever in the newborn, or on the advice of a traditional midwife or family member. Sasak mothers feed pre-chewed rice to their infants, sometimes after fermenting it overnight. Other common prelacteal foods are rice flour, porridge and tea. Semi-urban Balinese mothers sometimes give their newborns powdered milk which they obtain for the local hospital. Often water is not boiled before it is given to the infant. In Sasak, many mothers cannot boil the water due to the high cost of fuel.

A variety of supplementary feeds are offered to breastfed infants from an early age in Indonesia (Piwoz, et al 1987). The practice of administering prelacteal feeds and discarding colostrum, (a valuable source of Vitamin A, carotene and anti-infective agents), can be seriously detrimental to infant's health. Possible consequences of prelacteal feeds include: diarrhea, refusal by the infant to breastfeed and decreased breastmilk, growth retardation and marasmus (Kaspan, et al 1983).

In one rural area, researchers found that only 12.7% of 2285 newborns, began breastfeeding on the first day of life and prelacteal foods were given to 71.5% of the infants (Hamzah).

Piwoz, et al (1987) conducted one of the few studies which tried to determine why mothers give prelacteal feeds. The most common reasons cited by the mothers were: to stop the baby from crying, the newborn could not suck, the breastmilk was not flowing and to mark the newborn's independence from the mother's womb.

In a review of 3 surveys conducted in Surabaya, 13% of infants were never breastfed. In infants who were breastfed: 1/3 were given supplementary fluids of water, tea, coffee, green bean juice or artificial milk, 44% were receiving inadequate formula diluted with nonmilk substances and 23% were receiving inadequate amounts of formula (Kaspan, et al 1983). These practices were associated with malnutrition.

By the first month, many infants are introduced to semisolids, usually consisting of mashed banana and rice. In semi-urban areas of East Java, mothers introduce soft rice porridge and biscuits at 2 to 3 months and steamed rice cakes and dark green leafy vegetables in the fourth month. Rural mothers continue with food tastes from the family pot. For infants up to 9 to 12 months, special foods are prepared, usually without meat or fish. Children who are ill are given white rice or rice water for "strengthening."

One study found that 20% of infants were not introduced to solids before age 1 year and for infants under age 2, the number of daily feeds was infrequent (2-4 times). Unless supplementary food is provided in sufficient quantity and under hygienic conditions, normal growth cannot be sustained (Cameron 1983). The late introduction of solids can be detrimental to an infant's health. Severe malnutrition is associated with low-calorie, bulky food. Often undernourished infants are given less food for fear that they will choke or die, exacerbating an already life-threatening condition for the child.

The weaning of infants is usually abrupt and often takes place early, primarily for fear of excessive breast development, because health workers encourage it or due to employment outside the home (Burgess). Bitter substances such as betel juice are applied to the breasts to discourage nursing.

LACTATION DIET

Fish and fishy foods (believed to cause stomach worms), vegetables cooked in coconut cream (believed to cause diarrhea), coconut milk, cucumbers, papaya (believed to upset the stomach), and fried tempeh and soybean (believed to cause eye disease) are restricted. If breastmilk is insufficient, a soup of papaya, spinach and saurupus androgenous leaves is given (Tan 1970).

MORTALITY AND MORBIDITY

Although faltering growth in developing countries has been attributed to breastfeeding, the early introduction of solids and artificial milk appears to be a more important cause of malnutrition and mortality. Infants fed solids at an early age had high perinatal (21%) and neonatal (16%) mortality rates (Kardjati, et al 1978).

The incidence of neonatal infections and mortality decreased significantly for both fullterm and low birth weight infants after a policy of rooming-in and breastfeeding promotion was instituted at Sanglah Hospital in Bali. The incidence of diarrheal disease in low birth weight infants decreased from 6.22% to 2.58%; in fullterm infants, from 3.84% to 0.28%. Mortality from infections decreased from 2.21% to 0.81% (Soetjiningsih and Suraatmaja, 1988).

Subarjono in 1981 found that the reported rate of morbidity, mortality and malnutrition was 4 to 6 times greater in bottlefed infants than in infants who were breastfed only. The risk of malnutrition (Figure 13) during the first 6 months was highest in infants who were not breastfed (Soetjiningsih) and the incidence of malnutrition decreased in direct proportion to the duration of breastfeeding (Munir).

AVAILABILITY OF FORMULA

Artificial milk is readily available in Bali and samples of milk substitutes are frequently given to maternity clinics and medical doctors (Soetjiningsih and Suraatmaja, 1988). (Table 7)

MATERNITY BENEFITS

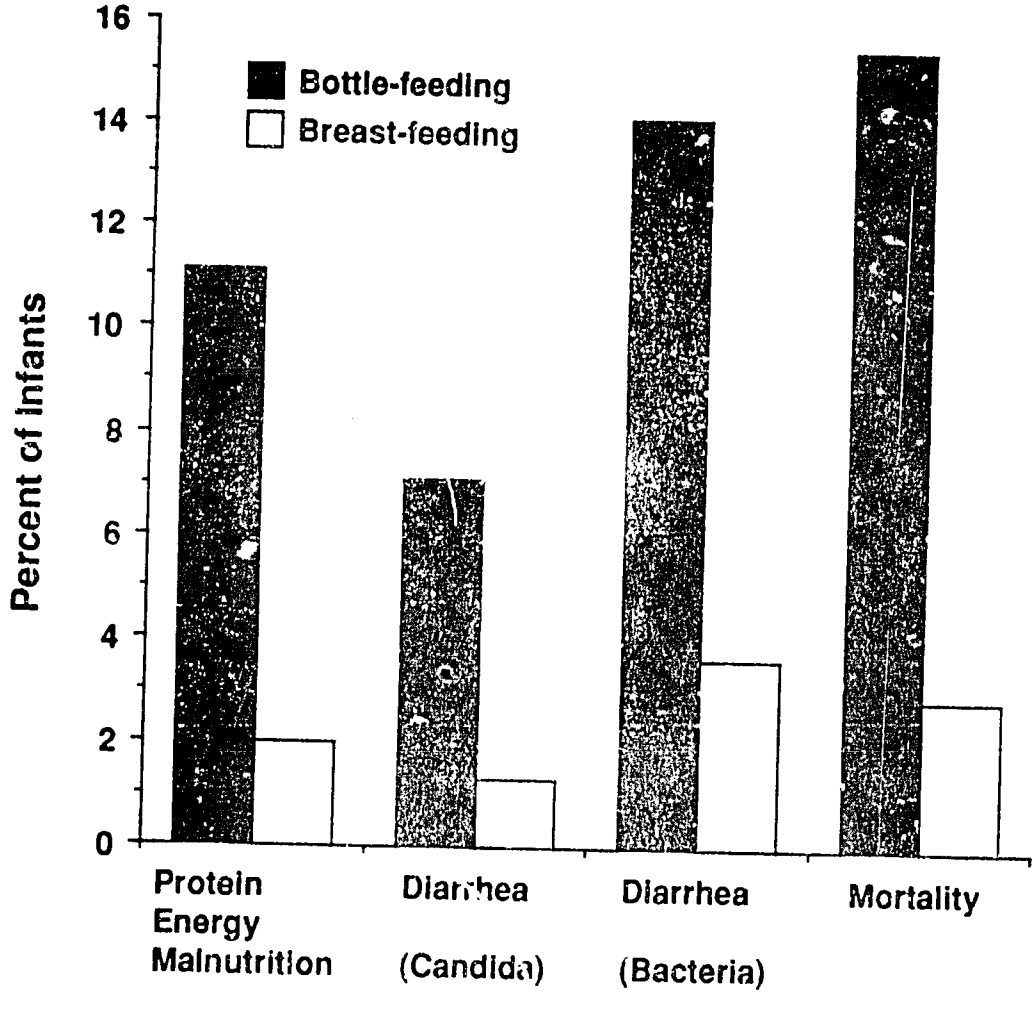
A total of 12 weeks, 6 before and 6 after the birth, is provided for maternity leave. Mothers must contribute a minimum of 6 months over a 12 month period in order to qualify for leave. The employer pays 50% of wages during the leave period. Government employees receive full wages during maternity leave however.

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

The WHO/UNICEF Code was adapted and signed by the Ministry of Health in 1985. At the provincial level, the marketing of breastmilk substitutes is monitored by the Section of Food and Beverages,

Figure 13

THE BENEFITS OF BREASTFEEDING



Source: Balaka, T. (1981) in Soetjiningsih, I. Problems of Infant Feeding Practices in Indonesia. Presented at the Workshop of "Early Childhood Nutritional Problems in the Far East," Hong Kong. Nov. 28-29, 1987.

Committee of Guidance and Councelling for Pharmacy and Food. There are no penalties for violation of the code.

BREASTFEEDING PROMOTION ACTIVITIES

The decline in breastfeeding in Indonesia has stimulated some efforts in breastfeeding promotion at both the national and health institution level (Jelliffe and Jelliffe 1984, Mautellesy 1985, Mustajab and Munir 1986). In its infancy, the national strategy consists of a multifaceted approach involving public education, health professional training, breastfeeding management classes for TBAs and mothers, research, a breastfeeding data base and legislation to regulate the marketing of breastmilk substitutes.

In 1984 the Directorate of Nutrition in the Department of Health, held a workshop in Jakarta to establish a coordinating body under the Minister of People's Welfare, for the national promotion of breastfeeding.

Through the Indonesian breastfeeding promotion program, a number of lactation training activities in Samarang, Jakarta and Bandung have been developed. The San Diego Lactation Program (Wellstart) has been involved in training breastfeeding specialists. The Wellstart graduates, in collaboration with others in the field such as: Provincial Officers, Perinasia, the Indonesian National Board for Family Planning, and women's groups, have been conducting a series of Travelling Seminars to promote breastfeeding throughout Indonesia. The participants include pediatricians, obstetricians, nurses and teachers. Efforts are underway

Table 7

PERCENTAGE OF CHILDREN 0-35 MONTHS OF AGE WHO RECEIVED THE FOLLOWING FEEDING WHEN THEY WERE BELOW 6 MONTHS OF AGE, IN RELATION TO SOCIO ECONOMIC STATUS.

Socio Economic Status	Number	Breast Feeding (%)	Bottle Feeding (%)
Low, Rural	2,836,121	99.2	8.9
Low, Urban	372,589	98.5	12.8
Middle, Rural	255,928	95.6	20.2
Middle, Urban	272,838	95.3	32.8
High, Rural	22,169	95.8	39.6
High, Urban	48,965	95.1	36.5

Socio economic status based on household expences a month, Low = $15-30, Middle = 360-90, High = $120-180 (Tarwotjo 1987, Household Survey 1986.)

Source: Suatjiningsih, Problems of Infant Feeding Practices in Indonesia. Presented at the Workshop of "Early childhood Nutritional Problems in the Far East," Hong Kong, Nov. 28-29, 1987.

to revise the curricula foi health professionals in order to improve breastfeeding knowledge and practices.

Hospital based activites have consisted of rooming-in facilities and pre and post intervention comparisons of breastfeeding initiation rates (Mautellesy 1985, Mustajab and Munir 1986, Soetjiningsih and Suraatmaja 1986). Many hospitals in Indonesia do not offer rooming-in and efforts are underway to change this policy in all hospitals. A dramatic reduction of neonatal infections and mortality in both fullterm and low birth weight infants was observed after rooming-in was introduced by graduates of the San Diego Lactation Program. The need for formula was reduced by 75%, as well as the rates for diarrhea and otitis media. IV fluid use decreased by 50% and hospitals stays shortened, the latter probably the result of better resistance to infections (Soetjiningsih and Suraatmaja, et al 1986). A follow-up of the study participants would have been useful to establish the impact of prolonging the duration of breastfeeding. This study demonstrated the importance of rooming-in.

Breastfeeding promotion efforts have led to changes in rooming-in policies nationwide. In 1980, a regulation was passed requiring all government hospitals to provide rooming-in facilities. In Kariadi Hospital, between 1982 and 1984, the percentage of mothers initiating breastfeeding increased from an average of 40% to 90%, and the incidence of mixed feeding decreased from approximately 40% to 5% (Huffman, et al 1988).

In July of 1988, the Invitational Asian Regional Lactation Management Workshop was held in Denpasar, Bali. The conference was sponsored by ANE Bureau and organized by Wellstart and Perinasia (The Indonesian Society for Perinatology). The purpose of the workshop was to provide an opportunity for South East Asian graduates of the program, along with key Ministry of Health personnel from Thailand, the Philippines and Indonesia and other interested agencies (UNICEF, WHO) to: share information and experiences, develop methods for expanding lactation management training opportunities and discuss strategies for national and regional programs. A majority of the workshop participants also attended a 2 day, International Breastfeeding Seminar on recent scientific developments in lactation and breastfeeding research, held after the workshop.

The workshop resulted in national actions plans for breastfeeding promotion in Thailand, the Philippines and Indonesia and resolutions on the part of the Ministry of Health personnel to vigorously support the expansion of breastfeeding promotion efforts in each country.

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NEPAL

PREVALENCE DURATION AND PATTERNS

Bottlefeeding is a new and harmful practice in Nepal, believed to have originated in Kathmandu (Bomgaars, 1974). Official documents indicate that breastfeeding is universal for 12 months, with rates of 99% at 3 months and 97% at 12 months (UNICEF 1986). The World Fertility Survey (1978) reported that breastfeeding was prolonged and that 28% of mothers breastfed for 2 years. These high durations (total duration) are misleading and do not reflect exclusive breastfeeding rates. A survey of 313 children from the United Missions Clinics found that the rate of exclusively breastfed infants was only 35.5% (to 5 months or longer). Growth in the exclusively breastfed infants was adequate (Angove and Gunning 1986), which confirmed similar findings by Farquharson in 1976.

A small, in-depth study (Moser, et al 1983) conducted in the Kathmandu Valley, on the nutritional status of 26 lactating mothers and their infants, found that 50% of the supposedly exclusively breastfed infants were supplemented with lido, a pablum-like rice and water paste. This supplement was given because mothers considered their breastmilk inadequate. The high percentage of supplemental feeding reported in this study contrasts sharply with the World Fertility Survey figure (1976) of 93% of mothers breastfeeding. Krantz, et al (1983) also found that 12% of mothers were bottlefeeding.

DETERMINANTS OF BREASTFEEDING

Little data exists on the determinants of breastfeeding in Nepal. In a study by Thapa, parity was found to be a factor in the rate of breastfeeding. 87.5% of women breastfed their last child, while 79.6% of women with 5 or more children breastfed their last. The educational level of the mother was also a factor. In mothers with no education, 83.1% breastfed their last child, while only 71.9% of mothers with some education did so (Thapa 1979).

The 1978 World Fertility Survey data showed that prolonged lactation was less common among educated couples than among uneducated (Israel 1981).

Mothers who were given donated milk powder terminated breastfeeding early, an unfortunate consequence (Farquharson 1976).

SUPPLEMENTATION AND WEANING PRACTICES

Colostrum is considered unclean and discarded, particularly in Hindu society. Bennett (1976) found that colostrum was discarded by 65% of mothers. Some women nursed immediately after giving birth, others waited until up to the third day postpartum, when they believed their milk came in. During this period, the practice of prelacteal feeding appears to be common. Newborns are fed ghee (often warm or congealed with sugar or cow's milk), honey, molasses, rice flour or given milk from a female relative during the first few days. As in most developing countries, prelacteal feeds are easily contaminated and can significantly jeopardize the newborn's chances for survival, in addition to causing problems with milk supply and reducing the mother's chances to successfully breastfeed her infant.

In a survey of infants aged 7 to 18 months, 85% had diets combining breastmilk with daily feedings of adult food (Graves 1978).

Farquharson (1976) found that in the 1 to 2 year age group, no infants were receiving breastmilk alone. Approximately 1/2 of mothers surveyed fed their infants only twice a day or less. Time constraints

were cited as a factor for this infrequent feeding pattern (Vermury and Levine 1978).

In rural areas, breastmilk alone may be considered adequate for infants until the pasne "rice feeding," or weaning ceremony. This generally takes place at age 5 months for girls and at 6 months for boys (Angove and Gunning 1986).

Sarbottam Pitho ("super flour"), a locally made weaning food, is often promoted by health personnel as a first food. It consists of a quick cooking mixture of 1 part pulses and 2 parts cereal, which is roasted, ground and boiled in water (Krantz, et al 1983). Rice and dahl are given in rural and in some urban areas. In Tasen, biscuits were used as a supplement in 4% of rural and 27% of urban infants.

Shortages of food and beliefs about hot and cold food affect the food intake of Nepalese infants. Many infants receive little more than litho (a traditional, bland rice porridge made with clarified butter and sugar), which is deficient in protein and vitamins. Protein energy malnutrition in children under age 5, nutritional anemia, endemic goitre and Vitamin A deficiency are serious problems in Nepal (Krantz, et al 1983). A nutrition survey found 29% of infants moderately to severely malnourished, with 5% severely malnourished. This survey suggested that exclusive breastfeeding in the first months of life and improved weaning practices could have a positive impact on infant's nutritional status (Israel 1982).

The usual diet for toddlers consists of rice, dhal, vegetable curry (potatoes or spinach), small amounts of milk and occasional fruits and vegetables. The majority of Hindus are vegetarians. Infants of low socioeconomic status are often fed turnips and sweet potatoes, however higher castes are forbidden turnips, according to the Code of Manu (Farquharson 1976).

LACTATION DIET

During the last 2 months of pregnancy a special effort is made to feed the mother well because it is believed that the fetus is eating more of the the mother's food. The development and delivery of a baby is thought to be a process of "heating" the mother's body. Eating too much heat-producing "hot" foods, such as honey, are considered dangerous and cause miscarriage. Sour and tart foods, such as pickles, and hot or spicy foods are prohibited for pregnant women in the belief that the fetus, "made of blood," is "burned" by such foods and may become restless with pain if they are eaten (Bennett 1976).

Mothers are often given galactogogues (substances to increase milk production) consisting of a boiled mixture of ghee, dried ginger, hot water and molasses. Rich foods and soup made from medicinal herbs are also given. One study found that 1/3 of all mothers were given a special soup made from the jwano seed or a fermented drink called gundruk, made from dried mustard or radish greens (Bennett 1976). These galactogogues are high in calcium, iron and magnesium and are a good source of nutrition for the mother.

Green leafy vegetables are generally taboo for lactating women, however certain varieties may be promoted for good nutrition (Krantz 1979). A study conducted in Kathmandu found that mothers' diets were generally high in calories and low in fat and protein. Kilo calorie intake was higher than that found in Annapolis, Maryland in the United States, however protein and fat intake was less and infants were smaller. This may be related to maternal activity, heavy work and higher infectious disease rates (Moser, et al 1983).

In the rural areas, a pregnant woman's family and friends will try to feed her rich, nourishing foods during and after pregnancy. Common foods given are ghee, meat, liver, fish, eggs, curds and a syrup-filled sweet called jeri. After delivering, the mother

is fed rice 3 times a day instead of the customary 2, and as much goat and fish that the family can afford. Mothers are also given a sweet called gundpac and a special mixture of spices, herbs, ghee and milk, called sutkeri ko ausadi (Bennett 1976).

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

A Nepalese Code for the Marketing of Breastmilk Substitutes, Supplementary Foods, Feeding Bottles, Teats and Valves for Feeding Bottles, based on the WHO/UNICEF model, has been recommended by a government committee and is awaiting legislation.

MATERNITY BENEFITS

Maternity leave may be taken twice, is given for 45 days and mothers receive full pay during the leave period.

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PAKISTAN

PREVALENCE, DURATION AND PATTERNS

According to UNICEF data for 1986, 78% of mothers are breastfeeding at 3 months, 73% at 6 months and 67% at 12 months. These figures do not reflect the critical duration of exclusive breastfeeding and are therefore misleading because they create the erroneous impression that few problems exist with breastfeeding practices in Pakistan.

There appears to have been a dramatic decrease in the rate of ever breastfed in Pakistan, from 95% in 1975 (World Fertility Survey) to 86% in 1986 (Khan). This may be partly attributed to a large increase in the early introduction of weaning foods. The percent of infants receiving early supplementation increased from 5% in 1969 to 75% in 1974 (Harfouche 1981). Data from the National Nutrition Survey reveals that 13% of infants die before the age of 1 year and a large percentage of infants are malnourished beyond the age of 2 months, which suggests that exclusive breastfeeding is not as widespread as is often claimed.

Martin (1987), concurs that figures for "never breastfed" are misleadingly low and cites several smaller studies which suggest that bottlefeeding is more widely practiced than the figures from international agencies indicate (Table 8). She recommends that the data be examined along with data on the duration of breastfeeding and the extent of mixed breast and bottlefeeding, in addition to other forms of supplementation. A study by Lambert and Khan found that 50% of mothers exclusively or partially bottlefeed their infants.

Table 8

PERCENTAGE "NEVER BREASTFED" IN PAKISTAN

PAKISTAN			
Study	Sample	Year	% Never (1) Breastfed
Nutrition Survey (West Pakistan)	1,431 households	1965-66	0.7
Pakistan Fertility Survey (nationwide)		1975	1.5
Micro-Nutrient Survey (nationwide)	1,105 households	1976-77	5.4
Population, Labor Force &Migration Survey (nationwide)		1979-80	7.0
Who Embro Collaborative Study (nationwide-4 rural, 2 urban low income)	1,250 infants	1981	3.3
King Edward College (Lahore, low income)	120 mothers	1981	10.0
Natl Research Institute of Fertility Control (nationwide)	4,602 married women	1983	9.2
Planning & Development Division, Govt. of Pakistan (nationwide)	272 infants	1983-84	4.8
UNICEF (Lambert/Khan) (Karachi)	1,098 non-lactating mothers	1984	5.4
Natl Research Institute of Fertility Control (3 Karachi hospitals and 2 rural areas)	956 households		14.0
International Food Policy Research Institute (nationwide, urban poor)		1986	4.9

SOURCE: Martin 1987. Breastfeeding must be defined more specifically.

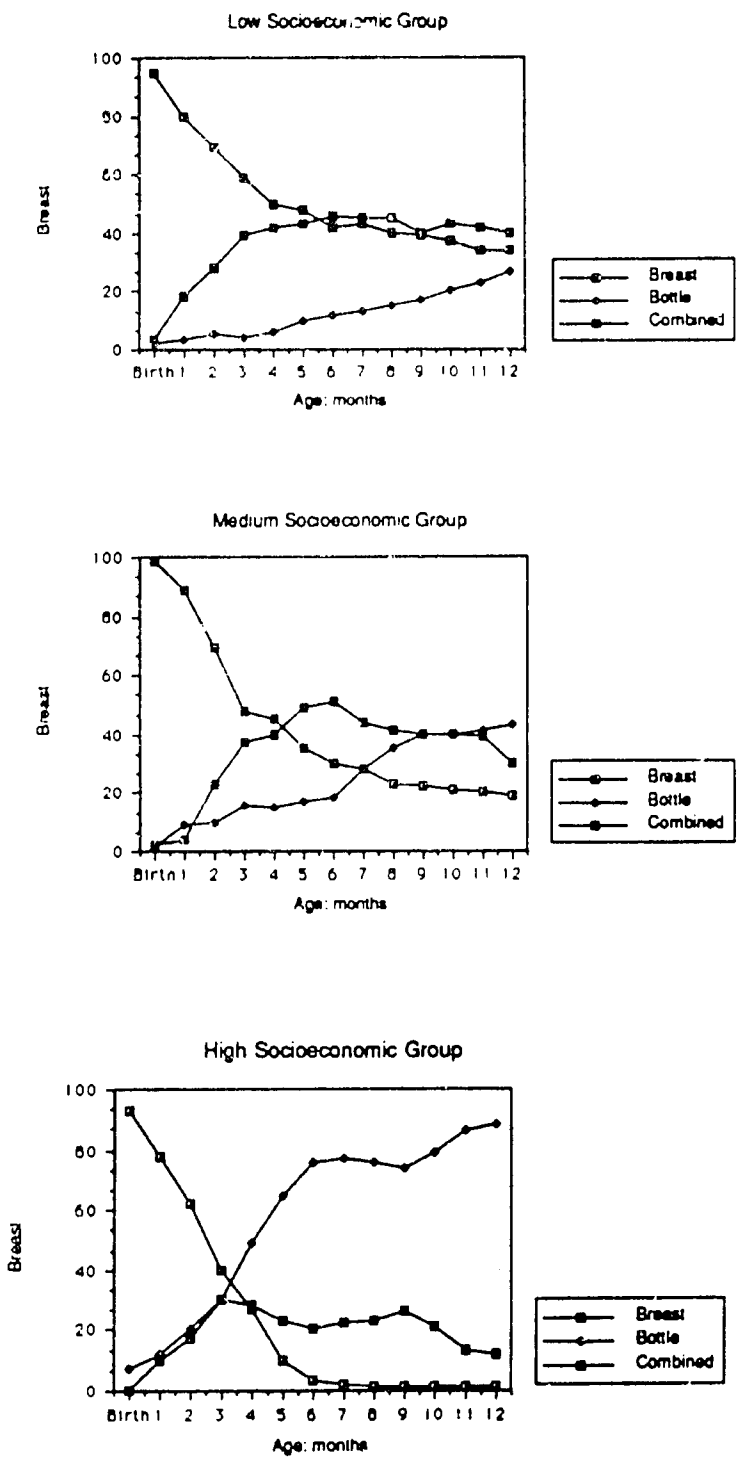
There has been a decrease in total duration of breastfeeding to an estimated 17 months (Khan 1980). In Lahore, 22% of mothers had stopped breastfeeding by the time their infants were 3 months of age (Manzoor 1981). The duration of exclusive breastfeeding was not defined in these studies.

Infant feeding patterns vary with socioeconomic status, ethnic background, education and cultural beliefs. Muslims are reported to breastfeed longer than Hindus, possibly due to teachings in the Koran. In a longitudinal study of 916 infants in Faisalabad, who were followed up at home, most were breastfed initially, irrespective of the socioeconmic status (SES) of the parents, however the duration of breastfeeding was short. By the age of 2 months, only 63% of infants in the high SES group and 68.5% of the low were breastfeeding exclusively. 20% of mothers in the high SES group were bottlefeeding exclusively, compared to 4.6% in the low SES (Figure 14). An additional 10.5% of high SES and 16.8% of the low SES were combining breast and bottlefeeding, aptly named by Latham and van Esterik as the "triple nipple syndrome." By 12 months, none of the high SES mothers were breastfeeding. Prolonged bottlefeeding appears to be a problem that needs research.

An excellent example of the importance of using precise definitions for breastfeeding patterns in assessing the affect of infant feeding patterns is a longitudinal study of 1600 infants, conducted in the slums of Lahore by Hanson, et al in 1986. The results of the study initially led the researchers to conclude than breastfeeding was not

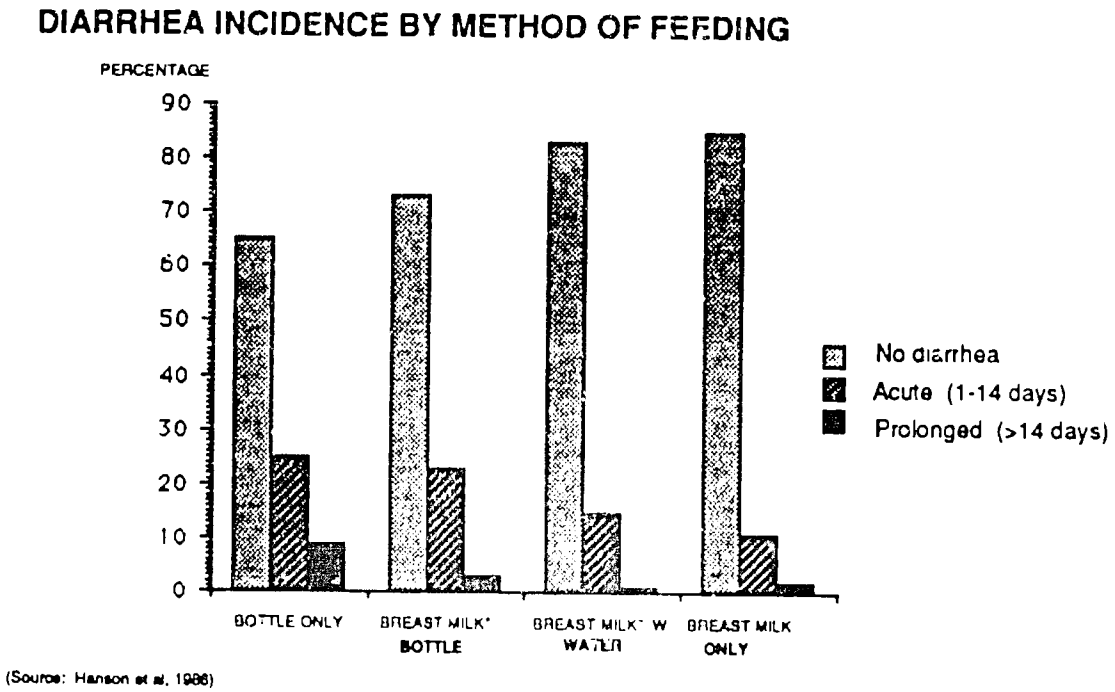
Figure 14

SOCIO ECONOMIC STATUS AND BREASTFEEDING PATTERNS



Graphed from data of Nagra S.A. and Gilani 1987

Figure 2



(Source: Hanson et al. 1986)

protective against diarrhea and infection. However, when the results were reanalyzed, separating patterns of breastfeeding, exclusive breastfeeding was clearly demonstrated to be significantly protective, even in the slum conditions of Lahore (Figure 2). Most newborns were given prelacteal feeds instead of colostrum (usually contaminated) (Figure 15a). Only 10% of the infants were exclusively breastfed. (Figure 15b)

DETERMINANTS OF BREASTFEEDING

Multigravidas are reported to have a higher rate of breastfeeding than women having their first babies. In the 0 to 3 months period, primips have higher rates of mixed breast and bottlefeeding and are more likely to supplement their infants' diets with other foods.

Older women have a higher breastfeeding initiation rate, younger women tend to feed less frequently and for shorter periods. Working appears to have a negative effect on breastfeeding rates. One study found that only 13% of working women breastfed their infants, compared to 81% of non-working women. Women working in agriculture had higher rates of breastfeeding than civil servants and merchants. Mothers in health facilities with rooming-in and those who did not receive milk samples had higher rates of breastfeeding, as did mothers with less than 4 years of education.

The primary reasons for stopping breastfeeding were: return to work, "insufficient milk," and baby is too sick to nurse.

Advice from health workers, such as advising mothers to give their infants supplements of water during the hot season (shown to be totally unnecessary) often results in early weaning and diarrhea. Health workers also give harmful advice to working mothers, telling them to get their newborns "accustomed" to the bottle early after birth, instead of teaching them how to express their milk. The use of drugs such as Parlodel, also suppress lactation (Sanghvi 1988). Other reported causes of

lactation failure include repeated pregnancies at short intervals (Jalil) and undue concern about breast hygiene (Lambert). Pacifiers appear to be used widely and are usually contaminated. Pacifiers can not only be a source of infection, but can adversely affect milk production by decreasing sucking time at the breast.

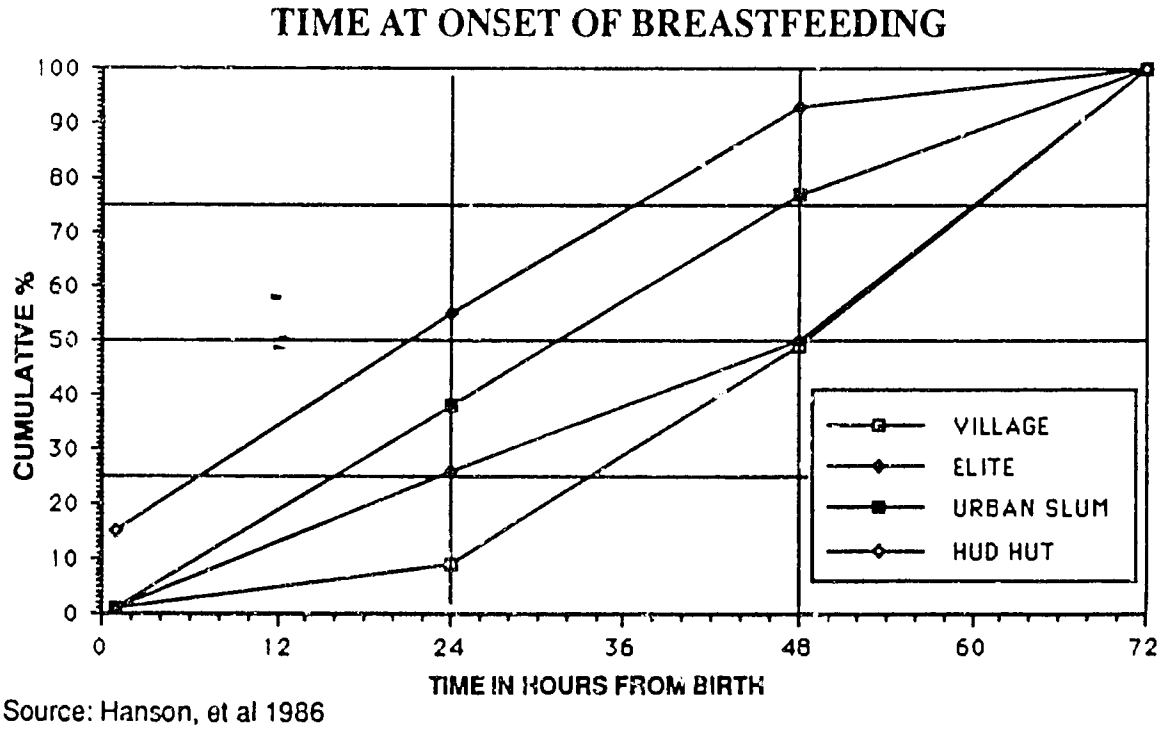
WEANING AND SUPPLEMENTAL FOODS

In a study conducted in Karachi, 92% of mothers discarded colostrum for 2 to 3 days and administered a variety of substances to their newborns. Mothers in a Lahore slum who lived in mud huts often gave their newborns sugar water or an herb concoction made from rose water, anise and cardamon. More privilaged women and city slum dwellers gave honey and some gave laxatives (despite the fact that colostrum is a natural laxative). It is important to note that honey has been shown to carry spores for botulism, causing sudden death in infancy (Arnon 1980). Fluids were given by hand, spoon and by bottle. Hanson stated that the infant deaths reported in his study could be attributed to contaminated fluids administered in place of colostrum.

Formula use appears to be widespread. At 0 to 3 months, 48% of infants received some breastmilk substitute, at 1 year almost 70%. 55% of mothers used formula and 27% used homemade foods. Condensed milk was also used as a supplement by 1% of mothers. One study noted that 16% of mothers bottlefed their infants on the advice of their doctors (Khan and Lambert). A UNICEF study conducted in Quetta found that nearly half of the 125 mothers interviewed supplemented breastmilk with fresh powdered milk (Martin 1987)

The initiation of supplements usually begins at an early age. Approximately 18% of infants were found to be receiving regular food supplements as early as 1 month or less; by 2 months, well over half of the infants surveyed were receiving supplements, as did 93% of infants by the age of 4 months (Nagra 1987; Vermury and Levine 1978). Buffalo, goat's or cow's milk are commonly given, as well

Figure 15a



Source: Hanson, et al 1986

as weak tea mixed with spices such as cinnamon and aniseed. Semisolids, such as fragments of chapati (sometimes soaked in ghee) are introduced at 9 to 12 months. Mothers who can afford other foods give sugi (semolina), delhya (wheat porridge), dhal and rice gruel and khir (ground rice with milk and sugar) (Harfouche 1981).

Cultural food beliefs are prevalent in the region and infants are not given foods which are considered "too hot," such as fish, eggs and beef, or "too cold," such as lassi, sherbert, citrus foods and juices. Foods which are considered beneficial are green gram and apples. Infants with diarrhea are given special diets of egg whites and lemon seeds.

Common solid weaning foods are chapati, chapati soaked in milk and choori chapati minced with sugar and butter fat. Irrespective of socioeconomic status, the constitution of artificial feeds was found to be inadequate. Middle and lower socioeconomic groups were found to dilute animal milk in the belief that it makes it more like mother's milk. No strict time was observed for feeding and bottle hygiene was poor, especially among those of lower socioeconomic status (Nagra and Gilani 1987).

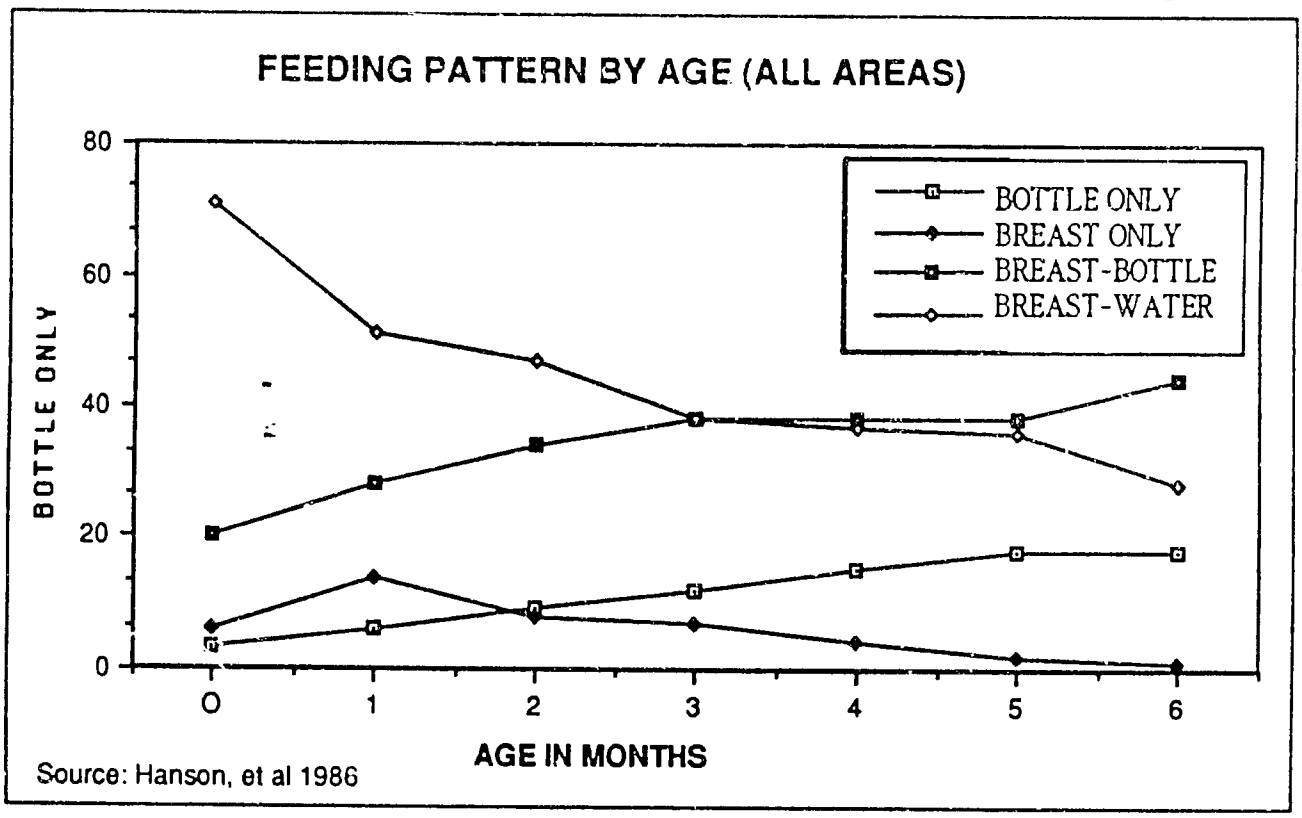
Delayed introduction of adequate weaning foods is a common problem. Vermury and Levine (1978) found that 10% of children studied were still on liquid diets at the age of 2 years. Late and inadequate introduction of solids was associated with smaller head circumference (Nagra and Gilani 1984).

A survey of infant feeding patterns in a village in Karachi found that mothers fed infants tea and biscuits because it was easier. Little attention has been paid to the component of infant neglect in feeding patterns when mothers are under pressure from heavy work loads and too frequent pregnancies (Jalil, et al 1983). Inappropriate feeding is a major cause of frequent bouts of diarrhea and the high degree of malnutrition. (Gilani 1984).

LACTATION DIET

Herbs (cumin, cottonseeds), drinks (lassi), goat's stomach, ghee, and legumes are consumed during

Figure 15b



Source: Hanson, et al 1986

lactation in the belief that they will increase the mother's milk supply. Certain legumes are believed to cause indigestion in the mother and to upset the infant's stomach.

MORTALITY AND MORBIDITY

The number of established diarrheal deaths in Pakistan are 313,400 per year. Approximately 201,900 are attributable to growth failure. The situation is so serious that in a recent international seminar in Lahore (March 1988), Dr. Jon Rohde said, [*"I have been in your country for 10 days, during which I have visited a number of health institutions. I am appalled at the number of bottles I have seen. You are killing your babies with these filthy objects."*] (Lambert 1988, personal communication) Khan, et al and Lambert (1988) have data that bottlefeeding is increasing rapidly in Pakistan in all regions and that diarrheal deaths are increasingly associated with bottlefeeding. The incidence of diarrhea in Quetta hospital increased along with an increase in the incidence of bottlefeeding. In 1975, 65% of infants with diarrhea admitted to Quetta were breastfed. 7 years later, only 15% were breastfed. Of 108 infants who died from diarrhea in the Jinnah Medical College in 1982, 70% were bottlefed.

LACTATION CONTRACEPTION

Exclusive breastfeeding is a more effective family spacing method than any form of modern contraception in developing countries. If lactational amenorrhea was decreased by 3 months in Pakistan, the projected use of contraceptives needed to maintain the current birth rate would have to increase from the current 5% to 40%. Such a goal is unattainable through unnatural family planning (Lesthaenge 1982).

MATERNITY BENEFITS

Women are allowed maternity leave for 6 weeks before and after delivery at 100% salary for 3 pregnancies. To qualify for benefits, mothers must have 9 months of employment or have worked 180 days during the past 12 months. Dismissal during maternity leave is prohibited. It appears that provisions for nursing breaks or day care programs do not exist. There is no provision for nurseries. Local governments may issue new regulations requiring employers of over 50 women to establish facilities for children under the age of 6.

AVAILABILITY OF INFANT FORMULA

Pakistan is in violation of the WHO/UNICEF Code. The baby bottle and formula industry representatives promote directly to the public through mass media, billboards, "free samples," clinic cards and baby shows. Donations to hospitals are also common practice (IBFAN). Bazaars and retail shops are flooded with breastmilk substitutes. At least 19 manufacturers export infant formula to Pakistan. Over 1/3 of the products show pictures of infants on their labels and the instructions are not in Urdu. Adding to the parents' confusion, the market is flooded with a variety of infant nutritional products including diarrheal mixtures and special formulae for different problems (Martin).

A UNICEF study in Quetta found that 73% of mothers using breastmilk substitutes were giving their infants powdered milk. Given the Ministry of Health's inaction on the Pakistan Pediatricians' Code of Marketing of Breastmilk Substitutes, health planners face difficulty in promoting breastfeeding (Martin 1987).

As many as 4.5 million feeding bottles are bought in Pakistan each year, a little over 1 for every infant born annually. The amount of money used to purchase formula is increasing. 1987 estimates are from Rs. 165-315 million (IBFAN).

Although Pakistan voted for adoption of the WHO/UNICEF International Code of Marketing Breastmilk Substitutes, progress has been slow. The

Pakistan Pediatric Association drafted the Peshawar Declaration which was signed by 150 Pakistan pediatricians to protect breastfeeding (Appendix E).

Currently companies are ignoring the recommendations of the WHO/UNICEF Code and the government of Pakistan has not enacted these measures.

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THE PHILIPPINES

PREVALENCE DURATION AND PATTERNS

"Despite empirical evidence of the undoubted benefits of the practice of breastfeeding to infant and child survival, national trends in the Philippines are alarming" (UNICEF 1987).

The prevalence of breastfeeding has declined steadily from 87% in 1978, to 85% in 1980, to 83% in 1983. UNICEF figures for 1986 show that 68% of mothers are breastfeeding at 3 months, 58% at 6 months and 28% at 12 months (figures are not for exclusive breastfeeding). Bottle feeding is more prevalent than exclusive breastfeeding.

The Philippines Fertility Survey reported the prevalence of breastfeeding of the youngest or next to the last child, among ever-married women, to be 86.8%, declining to 82.6% in 1973 and 1978 respectively (Zablan 1985). The average duration of breastfeeding was approximately 12 months and generally remained stable over the same period. A 1978 survey in the Bicol region found that 92% of infants under age 2 had been breastfed, however 62% had received some type of breastmilk substitute during the their first 12 months (Popkin, et al 1985). Popkin found the median duration of breastfeeding to be 10 months, a shorter duration than that reported in national surveys.

Although initiation rates for breastfeeding are relatively high in the Philippines, continuation rates are low. A survey of urban rich, urban poor and rural infants under age 2 reported ever breastfed rates for infants under 1 month to be 61%, 69% and 92% respectively (B.Guzman 1982, WHO 1981). 32% of urban rich infants were never breastfed, a much higher figure than for urban poor and rural infants. Prevalence of breastfeeding varied inversely with higher education, especially among rural women. Women who were the highest utilizers of prenatal care had the lowest prevalence and shortest duration of breastfeeding. Mothers who delivered in hospitals and institutions where rooming-in was infrequent were more likely to never breastfeed their babies.

The prevalence and duration of breastfeeding has been decreasing progressively in the Philippines. This trend has been especially alarming in the rural areas, where poverty and unhygienic conditions leads to increased mortality when the prevalence and duration of breastfeeding declines. The median duration decreased from 12 months in 1973, to 11 months in 1978 and to 10 months in 1983.

In a sample of low-income mothers in Manila, the majority initiated breastfeeding, however by the end of the first month the drop-off rate was approximately 10%, increasing to 30% by 3 months (Simpson, Hebert 1986, Makil 1985).

In a survey of 462 mothers from randomly selected households in Barangay villages in Metro Manila, 22% were "pure" breastfed, 32% went from pure breastfed to bottle fed from 1 to 3 months, 22% were given mixed feedings (bottle and breast), 20% were exclusively bottle fed and 7.8% were breastfed until age 10 months. The mean duration of breastfeeding was 6 months. Some infants were bottle fed for 24 months (Vicente 1986).

It is encouraging to note that agressive breastfeeding campaigns have apparently influenced educated urban mothers to breastfeed for longer periods. According to a 1986 UNICEF report, this is a result of mass actions by grass roots organizations.

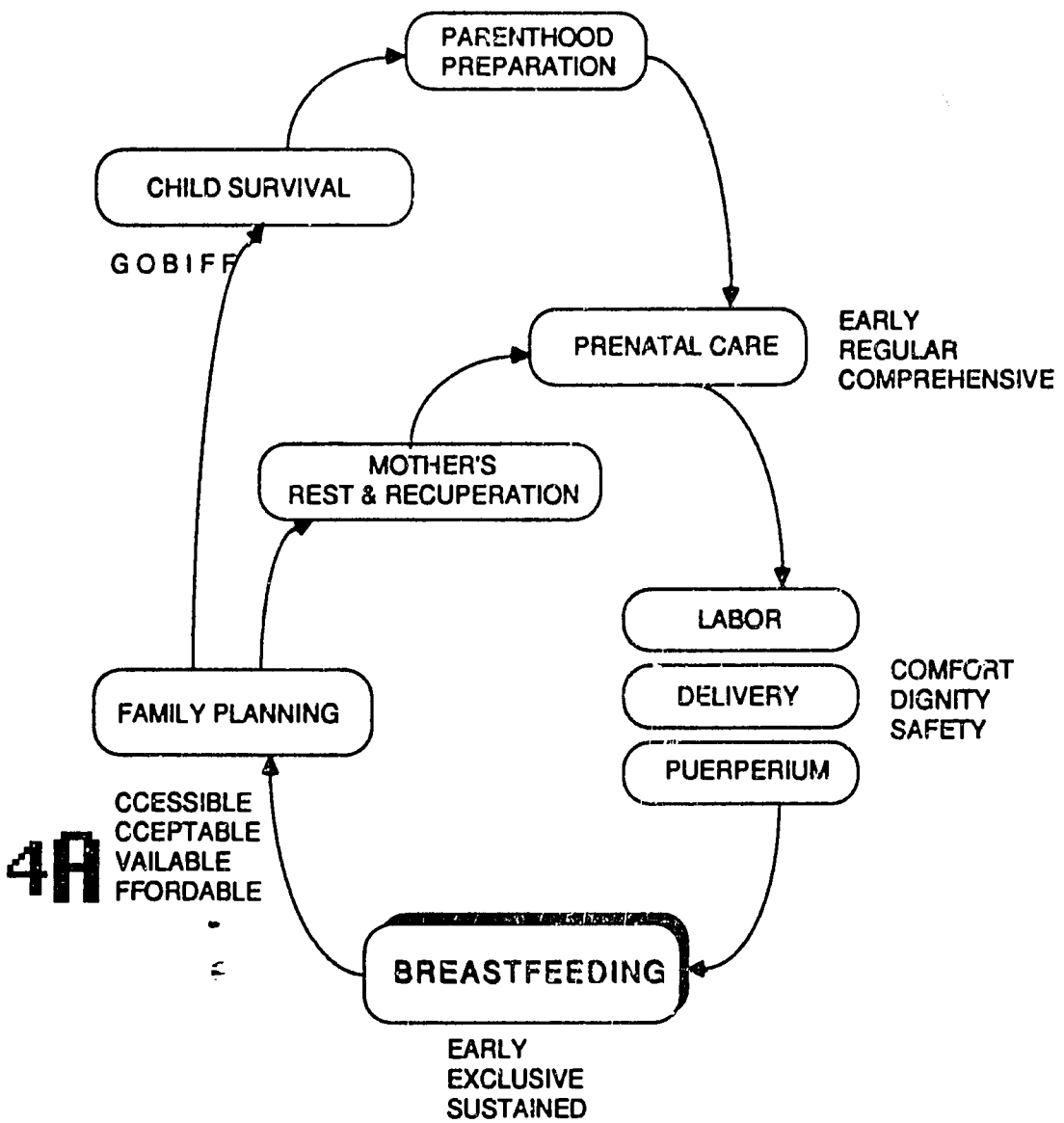
Investigators have reported differing figures for duration. Zablan in 1986 found that the decrease in duration of breastfeeding has been slight, but more significant over the past 5 years. Popkin, et al 1985, using life table analyses, regrouped the data to concentrate on ages 4, 7 and 13 months to avoid "age heaping." The reported mean duration of

"ever breastfed" was longer in 1983 than in 1973 by 1 month in the rural areas and by 0.4 months in the urban areas. The proportion of breastfed infants was highest between 4 and 5 months, however the difference was insignificant.

DETERMINANTS OF BREASTFEEDING

Women in rural areas are more likely to breastfeed for a longer duration than women in urban areas.

"SAFE" MOTHERHOOD PACKAGE



Source: Philippine Country Presentation at Asian Regional Lactation Workshop, Denpasar, Bali, Indonesia, June 1988.

The reasons why urban women have lower prevalence rates are unclear, however the decrease in breastfeeding prevalence and duration has been greatest among the rural population. In absolute numbers, the problem may be more significant in the rural areas rather than the urban. Breastfeeding rates are highest among women with little education or with 7 or more years of schooling and recent immigrants (Popkin, et al 1987). Young mothers, particularly in the 15 to 24 year age group, breastfeed less frequently and for shorter periods than older mothers (Zablan 1986).

In a study conducted in San Pablo City, mothers were interviewed using a questionnaire. The results showed that poor knowledge about breastfeeding, not ingrained beliefs, affected feeding patterns. The mothers did not consider breastfeeding in public to be a constraint (M. Dalisay, et al 1986). In any nationwide program, an understanding of sociocultural characteristics is important if there is to be a reversal of the trend towards declining breastfeeding patterns (Zablan 1986). Hospital policies often prevent nursing during confinement and accept free gifts and samples from formula companies (Simpson Hebert 1986).

Pregnancy, insufficient breast milk and the infant's refusal of the breast, were common reasons cited for stopping breastfeeding (Guthrie, et al 1983). A primary reason for not initiating or stopping breastfeeding was the need for mothers to work outside the home. Few workplaces provided nurseries or facilities for breastfeeding and some mothers needed to be away from their infants for up to 12 hours per day. Some mothers interviewed feared that illness could be transmitted through their breastmilk, others lacked knowledge about breastfeeding or had negative attitudes towards feeding their infants with their breasts. During the 3 to 6 month period, as mixed feeding increased, "drying up" of breastmilk was a common reason for stopping breastfeeding. Exclusive breastfeeding was rare.

The limited role of health personnel in advocating sound breastfeeding practices was evident in the results of a clinic based study in Manilla. Mothers were questioned about erroneous beliefs and negative attitudes regarding breastfeeding. 24% of mothers believed that illness, anger, fatigue, cold, heat and hunger could be passed to the infant through their milk, 20% of mothers worked and thought that the milk in their breasts would spoil if they did not feed often and 20% stated they disliked breastfeeding or did not know much about it (Simpson Hebert 1986, Makil 1985). Hospital staff who were surveyed encouraged bottlefeeding, knew little about breastfeeding and rarely discussed breastfeeding with mothers ante and postnatally. 10% of mothers were advised to bottlefeed upon discharge. The most common advice given to mothers was to wash their nipples with lukewarm water before each feeding (Simpson Hebert 1986, Makil 1985). Vicente (1986) suggests that patterning learned during the birth of a woman's first infant is an important determinant of how she will breastfeed subsequent children.

SUPPLEMENTATION AND WEANING PRACTICES

In 1981, low-income, urban Filipino women still initiated breastfeeding at high rates, however by 6 months half of all infants were completely bottlefed (WHO 1981).

Beliefs about supplementation and weaning practices vary. In rural areas breastfeeding may not be initiated until the second day after birth. Colostrum is discarded by most mothers because of its "spoiled and dirty" appearance and because mothers believe it is unhealthy. Sometimes colostrum is "tested" by putting a drop in a glass of water, if it mixes readily it is considered safe, if it curdles it is discarded. Some mothers use an emetic ampalya juice to "clean out" the newborn's stomach. Rice water and bitter melon juice are sometimes given to the newborn as a first food. There is a belief among certain mothers that the right breast should be given first because it contains rice, and that the left breast contains only water. In the San Pablo City area, mothers believe that fatigue causes the milk to

spoil (M. Dalisay, et al 1986).

Often mothers are encouraged by hospital staff and relatives to bottlefeed their infants with supplements of water and vitamins, citrus juice and rice water. The spoonfeeding of porridge or commercial infant cereal is also encouraged.

Supplementation of breastmilk, particularly during the critical first few months after birth, not only increases mortality, but decreases suckling time, milk production and the effectiveness of lactation on birth spacing.

A survey conducted in metropolitan Cebu (Fernandez and Popkin 1987) found that breastmilk substitutes in the form of infant formula were used 4 times more frequently by urban mothers than rural mothers. This difference was attributed to hospital practices and the entry characteristics of mothers who have hospital deliveries. Only 29% of urban mothers and 59% of the rural breastfed their infants the first day after delivery. More mothers gave prelacteal feeds on day one than day two. On the first day 1/4 of mothers in both urban and rural areas gave their infants non-milk substitutes only. Only 5.6% of urban mothers and 28% of rural mothers gave breastmilk exclusively to their infants (Fernandez and Popkin 1987).

INFANTS RECEIVING FORMULA

	RURAL	URBAN
Day 1	11%	43.8%
Day 2	13.8%	45.7%

Within the first 2 months, mothers often supplement their infant's diet with rice bran extract (Tiki Tiki), sweetened condensed milk or pre-chewed food. This is especially common when mothers consider their breastmilk to be inadequate. In the rural areas infants are more likely to be given diluted condensed milk, in the urban powdered milk is more frequently given (Vermury and Levine 1978). Supplementary foods are generally introduced by 6 months. In the rural areas the most commonly given first supplements are rice broth and gruel (lugoa), followed by mashed banana. The extent and frequency of supplementation and feeding patterns in the Philippines needs further investigation. Supplemental foods not only decrease milk production, but also can serve as a lethal portal of entry for infections in the infant.

In the squatter camps and poor urban areas of Cebu city, researchers (Fernandez and Guthrie 1984) found that marginal nutrition of the mother and deliberate weight restriction affected breastmilk production adversely. Mothers were concerned with the color of their milk and often discarded it if it was not the color and texture they expected. The extent of these practices however, was not documented.

MORTALITY AND MORBIDITY

At Baguio General Hospital, located in northern Philippines, it was the general policy for infants to be separated from their mothers at birth and placed in the nursery where they were fed supplements of powdered cow's milk. In April 1975, there was a change in policy which mandated that infants roomed-in with their mothers and breastfeeding on demand was encouraged. With the change in policy came a dramatic decrease in the incidence of morbidity and mortality, reported by a review of the Pediatric Department. The data showed: 98 clinically septic infants, 88 (90%) were receiving formula exclusively, 7 (7%) were being given breastmilk and formula and only 3 (4%) were exclusively breastfed; out of 67 infants diagnosed as having oral Candida Albicans (thrush), 63 (94%) were formula fed, 2 (3%) were mixed fed and 2 (3%) were breastfed; of 138 infants diagnosed with diarrhea, 124 (90%) were formula fed, 8 (6%) were mixed fed and 6 (4%) were breastfed. The results of this study demonstrate the protective role of breastmilk (Clavano 1982).

A prospective survey of 143 low income families reported that the incidence of diarrheal disease in the first 3 months among bottlefed infants was 11 times greater than in infants who were breastfed (Hebert, et al 1986). In this study, infants were classified according to milk feeding mode, however no consideration was given to supplemental feedings, since they were observed to be fairly universal among the study population.

Zablan (1986) reported that figures from the National Demographic Survey and the Philippines Fertility Survey show the survival rates for breastfed infants were 32% higher than those infants who were not breastfed.

LACTATION DIET

Traditional beliefs are important in maintaining breastfeeding practices (Simpson Hebert 1986, Makil 1985, and Guthrie, et al 1983). Traditional measures used to promote lactation in the Philippines include giving the mother special cocoa drinks and the ritual brushing of the breasts with plants which exude milky fluids. If a mother has been in the sun for a long period or if the the milk has remained in the breast too long, the milk is often expressed and discarded. Breastfeeding is interupted if the mother is sad or in a bad mood for fear that the infant will "suck up the mother's sorrow" (Guthrie, et al 1983). Health professionals who sometimes adhere to some of these cultural beliefs, can adversely affect breastfeeding promotion.

During lactation, food restrictions for the mother include sour foods (thought to curdle the milk and induce hemorrhage) such as vinegar, guavas and citrus. Green vegetables are avoided by some mothers in the belief that they will turn the milk green (Vermury and Levine 1978). Mothers are often given "strengthening foods" such as boiled chicken, corn porridge, coconut milk and alcoholic beverages from palmnut (tuba). Information on lactation diet in the Philippines is largely anecdotal and needs further research.

LACTATION CONTRACEPTION

Grey, et al, in a survey of 50 volunteer mothers who had normal deliveries, found that postpartum amenorrhea lasted 12 or more months when breastfeedings were frequent (more than 10 times per day) and at shorter intervals (1 to 3 hours). Women who breastfed their infants erratically were more likely to ovulate earlier.

When mothers switch from exclusive breastfeeding to mixed breast and bottlefeeding, they undermine the contraceptive effect of lactation (Hebert, et al 1987). Local herbal family planning methods are used in the southern region, although their effect on lactation has not been researched (Quijano 1986). In San Pablo City, some mothers abstain from sex while breastfeeding in the belief that it would cause their milk to spoil.

AVAILABILITY OF FORMULA

Artificial milk companies in the Philippines have been agressively marketing their products through donations to individuals and institutions, the building of nurseries, the distribution of free samples, milk nurses and media campaigns. Mothers are often given inaccurate information on the risks of formula feeding, and therefore introduce the bottle to the infant at an early age.

From 1975 to 1976, over 90 million dollars was spent in the Philippines on imported formula and milk based products. Mothers in the rural and urban areas who lack the money to buy formula often substitute rice water, rice porridge or mashed camote (B. Guzman 1982).

Hebert's study corroborates the aggresive market-

ing by the formula companies and notes that while health workers are generally in favor of breastfeeding, facility and hospital policies make it difficult to breastfeed. The WHO collaborative study on breastfeeding found that 27% of mothers from an upper socioeconomic group, 9% of urban poor and 41% of rural mothers had been given free milk samples during their hospital stay.

PROMOTION OF BREASTFEEDING

By providing rooming-in, encouraging breastfeeding and prohibiting promotional activities by formula companies, Clavano was able to dramatically reduce the mortality and morbidity for infants in a general hospital in the Philippines.

Through mass action and increased involvement on the part of communities, public attention has been drawn to the erosion of breastfeeding. In Nakati, a suburban town in the Philippines, 500 women breastfed their infants in the street to protest the aggressive promotion of bottlefeeding, resulting in poorer health for their infants. This mass action was organized by the National Coalition for the Promotion of Breastfeeding and Child Care (now called BUNSO), a private organization affiliated with the National Movement for the Promotion of Breastfeeding (NMPB).

The NMPB is an inter-agency organization of government and non-government organizations, coordinated by the Department of Health at the Maternal Child Health Service. Its primary themes are: information, education and communication on the benefits of breastfeeding. The NMPB has developed, produced and disseminated a number of pamphlets, posters, jingles, radio and TV spots, slides and other educational materials. A reference handbook of standard breastfeeding messages was developed and distributed. In Metro Manila, a mass media campaign to promote breastfeeding was conducted. The campaign included displays of posters in Light Railway Transit Cars, buses, jeepneys and tricycles, and the publication of feature articles in newspapers and magazines. The NMPB has also produced teaching/learning packages on lactation management to be incorporated into the curricula for health professionals (MDs, nurses, midwives, nutritionists) and sponsored research on breastfeeding practices and programs.

The NMPB plans to focus its future strategies on: the integration of breastfeeding promotion into all maternal and child health, nutrition and family planning projects, strengthening the NMPB network at the national and local levels, improving the management of lactation in health service delivery settings and supporting breastfeeding research (Casabal 1988).

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

First introduced in 1981, a national code on the marketing of breastmilk substitutes was signed into law by President Aquino in 1986. According to the code, health care facilities may not display or advertise milk products. Milk company personnel may not promote their products to pregnant women or new mothers. The advertising of artificial milk must be approved by the government. Activities to promote breastfeeding have been increased. Labels on tins of infant formula must explain the proper use of the product and discuss the superiority of breastmilk. Visuals which idealize bottlefeeding are prohibited. A coalition of organizations has volunteered to monitor compliance of the code by the industry, however there has been resistance to this by the companies.

MATERNITY BENEFITS

Maternity leave of 45 days with full pay is allowed, including at least 2 weeks before confinement. An extension with out pay due in cases of illness due to pregnancy, confinement or abortion is possible. To qualify for benefits, mothers must contribute for 3 months during a 12 month period. Employers are

required to establish nurseries and provide breastfeeding breaks twice a day for 30 minutes. During their maternity leave, women may not be dismissed.

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SRI LANKA

PREVALENCE DURATION AND PATTERNS

In Sri Lanka, as in other parts of Asia, rapid urbanization is bringing new problems. Traditional practices are being modified, even in the rural areas. In the case of infant feeding patterns, this has resulted in widespread bottlefeeding, with its subsequent high mortality.

The high rates given by the 1982 Contraceptive Prevalence Survey for prevalence of breastfeeding do not appear to reflect evidence from local studies that rates of breastfeeding are declining. The 1976 World Fertility Survey shows rates for ever breastfed to be 95%; the 1982 Contraceptive Prevalence Survey 99%. Popkin (1982) cites rates of 88% at 3 months, with UNICEF figures for 1986 showing a rate of 83%. At 6 months the prevalence rate declines to 74% and by 1 year to 48% (UNICEF).

The mean duration of breastfeeding has been shown to be higher in rural than in urban areas (CPS 1982, WFS 1975, Popkin 1982 and Millman 1986). Preliminary results of Sri Lanka's 1987 Demographic Household Survey indicate an overall drop in the average duration of breastfeeding from 19.4 to 17.3 months (variations by residence exist) over the past 12 years. The shortest mean duration reported was for Colombo (13 months), while rural residents continued breastfeeding for a mean duration of 18.8 months. As in other countries, these figures are misleading because they do not reflect the prevalence and duration of exclusive breastfeeding, the most critical pattern to measure. Smaller and local studies do not support the conclusion by Millman "that breastfeeding is almost universal."

While rural mothers breastfeed longer than urban mothers, at 6 months more rural mothers (70%) than urban mothers (50%) were shown to have stopped breastfeeding (WHO Director General, Infant and Child Nutrition 1986). Despite the fact that some rural mothers breastfeed for up to 2 years, often their infants are breastfed only once in 24 hours, usually at night (Soysa 1979).

In a private nursing home study conducted at de Soysa hospital, 10% of mothers chose not to breastfeed their infants, 30% only breastfed up to 3 months and only 50% breastfed for 6 months or longer. Poor preparation of the mothers was thought to be a contributing factor (Covington, et al 1985).

Rates for durations of breastfeeding appear to vary among religious and ethnic groups. One study found that Hindu and Moslem mothers breastfed their infants for an average of 15 months; Buddhist mothers for 14 months, and Christian mothers for 12.5 months. The average length of breastfeeding was found to be highest among Moors (15.5 months) and lowest in the Singalese (13.8 months) (International Statistical Review 1978, cited in Israel 1982).

Soysa in 1988 found that the early introduction of formula was increasingly prevalent. By 3 months, only 41% of urban and 60% of rural mothers were breastfeeding. These statistics are a cause for concern in that the urban trend towards bottlefeeding and early supplementation appears to have spread to the rural areas.

DETERMINANTS OF BREASTFEEDING

The primary reasons for stopping breastfeeding found by researchers in Sri Lanka were: the mother works, "insufficient milk," and "baby did not suck" (International Union of Nutrition Scientists 1982). The causes of "insufficient milk" and "baby did not suck" are generally from too infrequent nursing and early supplementation. The erroneous beliefs that there is often not enough milk or that the breastmilk is insufficient appear to be widespread

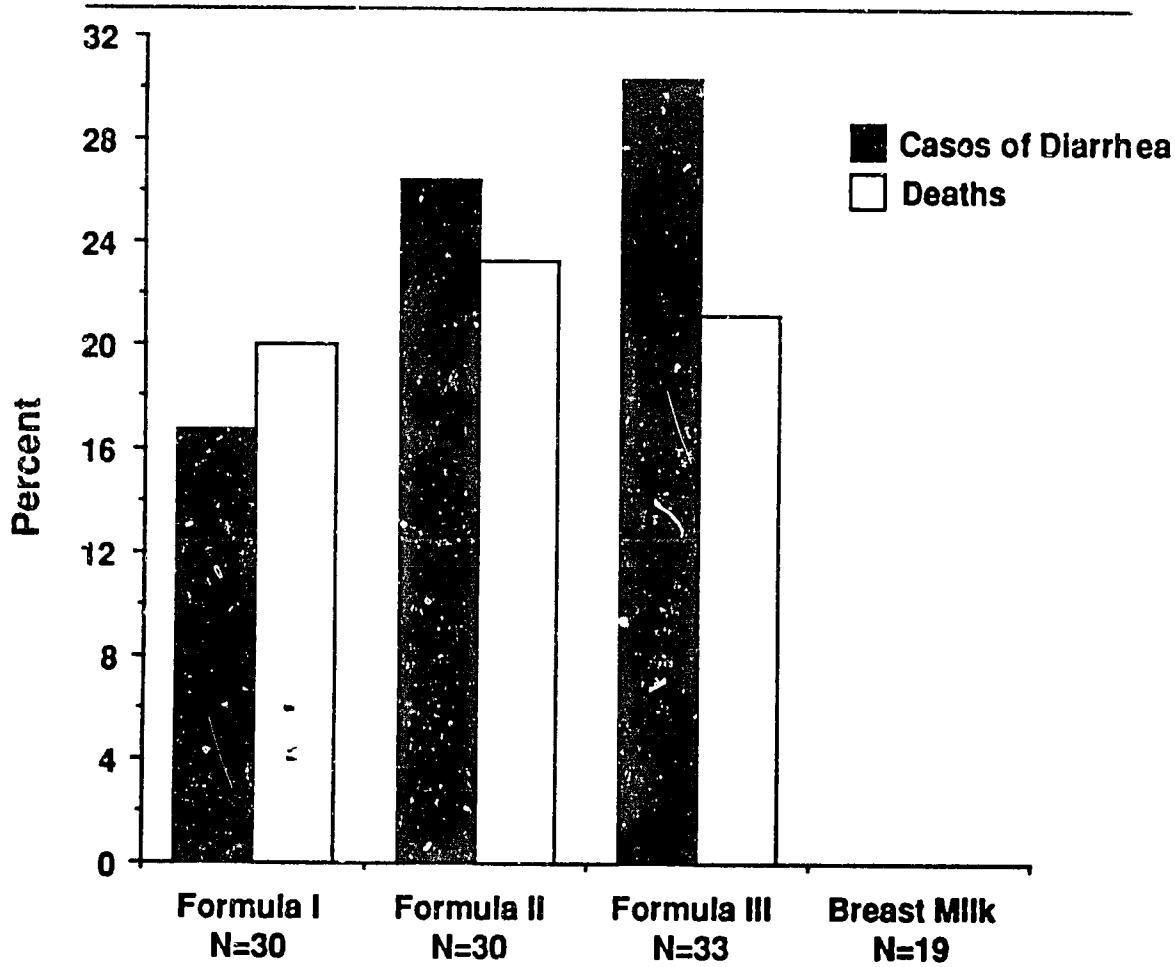
and are a major source of lactation failure (Figure 16). Soysa states that there is a general lack of support to breastfeed and that this is reflected in a new lack of self confidence regarding mothers' abilities to adequately nourish their infants. "When a baby cries the breast is hastily abandoned, the presumption being milk failure." In addition, there appears to be little support from the older generation to breastfeed, making it more difficult for new mothers to successfully breastfeed their babies.

In a study conducted in Kotte, a periurban area of Colombo, the use of formula was found to be high

Figure 16

COMPOSITION OF MILK FORMULAS AND OF BREAST MILK (g/100 ml)

	Protein	Fat	Carbo-hydrates	Minerals, etc.	Calories/ 100 ml.
Formula I	2.36	1.4	6.6	0.53	50.0
Formula II	3.53	2.1	10.0	0.80	73.3
Formula III	3.53	2.1	14.6	0.80	93.3
Breast milk	1.70	3.5	7.3	0.23	69.0



Source: Jayasuriya D., and Soysa P.E. Feeding Studies in Ceylonese Babies. Journal of Environmental and Child Health. Vol.20, No.6, pp. 275-279,

and was associated with a shorter duration of breastfeeding. Almost all mothers who were formally employed (98%) and 56% of women working in the home used formula. The amount of formula given was proportional to the increase in the separation time between mothers and their infants. By 2 months, most formally working mothers had stopped breastfeeding. Women of upper socioeconomic status tended to bottlefeed exclusively, whereas women of lower socioeconomic status tended to give both bottle and breastmilk (International Union of Nutrition Scientists, 1982).

In a study of the hospital environment and breastfeeding (Covington 1985), lack of knowledge regarding the physio-psychology of breastfeeding appeared to impede attempts to motivate and encourage mothers to breastfeed their infants. Most of the women surveyed lacked enthusiasm for demand feeding and wrongly believed that breastfeeding alters the shape of the breast.

The decision to breastfeed was found to be negatively affected by oral contraceptive usage and by the level of education in both the mother and father. The location of work and the parent's religion were also factors in determining feeding practices. Malay and Muslim women with little education were found to supplement their breastmilk with formula early in the postpartum period and 88% were giving formula by 3 months (Akin, et al 1981).

SUPPLEMENTATION AND WEANING PRACTICES

The practice of discarding colostrum and giving prelacteal feeds of water, glucose water or milk, appears to be widespread (Soysa 1979). Supplemental feeding often begins in the second month, coinciding with the end of maternity leave. Common supplements are water, cow's milk and condensed milk, coriander tea or rice water (Vermury and Levine 1987; Soysa 1979). Other common weaning foods are rice conjee, vegetable soups, rusks, biscuits and bread, which are introduced at around the age of 6 months.

Rice, though a common weaning food, may only be introduced after the rice-eating ceremony, which is performed from the 9th to 11th month. Although formula is introduced early, semisolid and solid foods are often delayed until the infant has teeth and culturally ingrained beliefs may delay the introduction of solids at the appropriate time. Milk supplements are usually terminated when an infant begins to eat rice in the belief that it causes worms. The late introduction of appropriate weaning foods, along with the withdrawal of milk supplements, may account for much of the malnutrition in Sri Lanka. A 1975/76 Nutrition Status Survey found that 7% of infants under the age of 3 were acutely undernourished and 35% of infants were stunted.

Since 1973, free samples of Thriposha, a packaged, pre-cooked food supplement made from soya, maize, dry skimmed milk, vitamins and minerals have been distributed through the government to mothers and children up to the age of 5 (Triposha Newsletter 1977). The program to distribute Thriposha, primarily conducted through the public health system, reached 632,000 by 1983. An evaluation of the impact concluded that, "The Thriposha program had the potential to make a significant contribution to reducing malnutrition if provided as part of a combination of services." (Hornstein)

LACTATION DIET

The high incidence of low birth weight infants in Sri Lanka (21%) may be related to maternal nutrition. During lactation, foods such as milk, pineapple, mango, crab, blood fish, eggplant, cassava, yams, legumes, yogurt and beef may be excluded from the mothers diet due to cultural beliefs. Dietary restrictions may be partly responsible for the reported lower volume of breastmilk in Sri Lankan women (500ml per day, compared to 800ml per day in well nourished women). Frequency of feeding patterns may also be a factor.

MORTALITY AND MORBIDITY

Bottlefeeding in Sri Lanka, as in most other developing countries, results in significantly increased rates of diarrhea, infection and malnutrition. Few families can afford to buy adequate amounts of formula (often 50-70% of their total income). Those using formula have to dilute it and the result is often marasmus (Soysa 1981).

A hospital study of low birth weight infants, fed formula for 10 or more days, because their mothers were discharged after 2 to 3 days due to the shortage of beds, showed that the mortality rate for infants on formula was 20%, and 0% for infants on breastmilk only (Soysa).

In a study of 80 infants who were followed for 8 months, 76% of infants exclusively breastfed achieved 90% of the expected weight gain for their age. In the mixed feeding group, only 60% achieved their expected weight for age and those who were exclusively bottlefed, 29% achieved their expected weight.

In a 1976 retrospective hospital study in Colombo, 519 infants admitted with diarrhea were under 1 year of age and none were exclusively breastfed. A more recent, 1980 prospective study of 127 admissions over a 2 year period, found that only 10% of the admissions were breastfed. All of the infants admitted were receiving water and fruit drinks in a feeding bottle.

AVAILABILITY OF FORMULA

Until 1980 the government of Sri Lanka imported and heavily subsidized formula on a quota system. Wyeth laboratories received 50% of this subsidy for its brand of formula, SMA. When the subsidy was removed, although SMA was the most expensive brand on the market, the public continued to buy it over other, less expensive brands, feeling that it was the best. The removal of the rice ration in the late 1970's made subsidized infant formula appear cheaper than breastfeeding, because mothers were able to cut down on their own food while bottlefeeding. (The price of subsidized formula was 50 cents per pound. In other countries it costs $2 per pound.)

A survey conducted by the International Union of Nutrition Scientists in 1982 found that mothers who were aware of promotional appeals for formula were significantly more likely to give their infants formula rather than breastfeed. In addition, a strong correlation was found between hospital ward practices, such as: breastfeeding education, rooming-in policies and formula promotion, and breastfeeding patterns.

Since April of 1981, the government of Sri Lanka has reduced its subsidy of formula due to rising costs (1970's expenditure was 200 million rupees) and at present, its own brand of Vitamilk, produced by Glaxo Laboratories, is subsidized. The subsidization of formula appears to have played a major role in the decline of breastfeeding in Sri Lanka, with negative consequences to the health of the country's infants (Soysa). (Table 9)

MATERNITY BENEFITS

Maternity benefits are provided for 2 weeks before the birth and for 10 weeks after, for mothers who are pregnant with their first or second child (if the infant is born alive). Shorter leave is provided for subsequent births, with full pay. If there are nursing facilities on the premises, nursing breaks of 1/2 hours are given, 1 hour if there are not. Nursing breaks are permitted twice a day for 1 year and counted as time worked, in addition to meal time. Dismissal during pregnancy or maternity leave is prohibited.

The Department of Labor is responsible for ensuring that maternity leave rules are followed and that nursing breaks are provided, however no study to date has investigated the conformity of labor laws

Table 9

IMPORTS OF MILK FOODS

ITEM	1979 Qty. (Kilos)	1979 Value (Rs.)	1980 January-April Qty. (Kilos)	1980 January-April Value (Rs.)
Full Cream Milk (Powder 26% butterfat)	16,667,623	280,994,749	6,654,584	127,736,000
Milk Powder (1.5-26% butterfat)	3,658,541	71,305,559	1,035,745	24,225,000
Condensed Milk	5,187,072	51,754,377	385,015	4,515,600
Butter	1,363,013	26,323,290	344,133	9,198,000
Cheese and Curd	-	-	45,029	1,716,000

Source: Soysa, Sri Lanka, 1980

by employers. There have been a few "raids" to industrial sites employing a high percentage of female workers and shortcomings were reported, but no significant remedial measures were recommended (Dias).

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

Sri Lanka adopted the WHO/UNICEF Code for Breastmilk Substitutes in 1980 and the International Code is in effect law. An additional provision banning feeding bottles made of plastic has been adopted. Monitoring and enforcement of the code however, appears to be problematic.

BREASTFEEDING PROMOTION ACTIVITIES

In 1985/86 a technical committee was formed to implement various articles of the Code. The committee includes baby food and formula industry representatives.

National seminars to create awareness of the Code and its implementation have been held for media personnel (TV, radio and press). Recently a documentary for educating mothers on infant and maternal nutrition was produced by a milk food company and it is hoped that the private sector will sponsor nutrition education and communication programs on breastfeeding and weaning (Karunaratne).

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THAILAND

PREVALENCE DURATION AND PATTERNS

The prevailing feeding pattern in Thailand is early mixed feeding (Contraceptive Prevalence Study 3, 1984). Although the vast majority of infants are breastfed at birth, exclusive breastfeeding declines rapidly during the first month, when breastmilk is supplemented with artificial milk (Winikoff). UNICEF data (1980 to 1986) for ever breastfed in Thailand is 48% at 3 months, 47% at 6 months and by 12 months these figures have dropped to 20%.

The data from national studies (Knodel, et al 1980) has shown that breastfeeding progressively declined from 1969 to 1979 for both urban and rural residents, across educational categories.

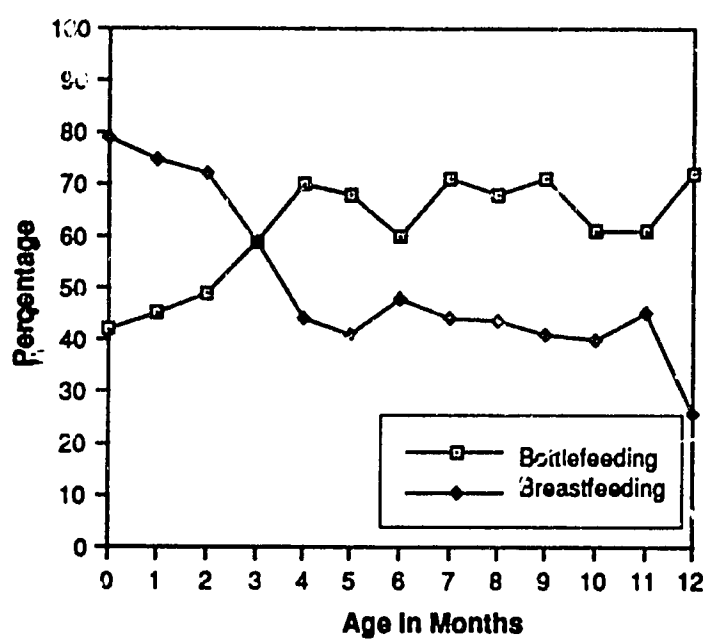
The data, collected by recall, did not specify whether or not breastfeeding was exclusive.

Most recent studies have had methodological problems and focused primarily on clinic populations in Bangkok. Reported breastfeeding rates ranged from 17.4% (Ponghai, et al 1981) to greater than 70% (Temchareon, et al 1980 and Tontisirin, et al 1983). In a Bangkok teaching hospital survey of 210 mothers, the rate of exclusive breastfeeding was only 17%, exclusive bottlefeeding was 21% and the remainder gave their infants mixed feeds.

In a retrospective study conducted at 2 well-baby clinics in Bangkok, 69% of mothers breastfed for up to 1 month, after that only 15.6% of mothers continued breastfeeding (Temchareon 1980). A prospective random survey of primarily low income, primaparous mothers (sample size 586) from 65 hospitals, found that 35% of mothers initiated breastfeeding, 50% were giving mixed feeds and 15% were using artificial milk exclusively (Durongdej 1986) (Figure 17).

Figure 17

Percentage of Mothers Currently Breast and Bottle Feeding by Age of Child



Source: Durongdej, D., et al Final report of the crossectional survey on infant feeding practices in urban Bangkok, Thailand

Note: Not exclusive breastfeeding

An analysis of breastfeeding trends indicates that there has been a steady decline in the duration of breastfeeding. Between 1969 and 1970, breastfeeding duration declined to 8.4 months for urban infants and 17.4 months for rural (Knodel and Debavalya 1980, Popkin 1982). Infants in the North were fully breastfed for a median duration of 10 weeks, in contrast to a median of approximately 1 week in the Northeast, underscoring regional differences (Contraceptive Prevalence Study 3, 1984). Breastfeeding rates were higher among young housewives with little education. Fifty percent of mothers could not identify any source of information on infant feeding (Durongdej, et al 1986).

A recent marketing study for American infant formula manufacturers found that 76% of Bangkok, and 62% of rural mothers were using commercial milk in the first month postpartum (Gaither 1980).

Data from the Family Health Division in the Ministry of Public Health from 1984 showed the average duration of breastfeeding (not exclusive) was 17.5 months countrywide, with marked differences between urban and rural areas and regions. For the urban areas the total average duration was only 4.5 months; 3.9 months for Bangkok and 6.5 months for provincial municipalities. The Central region showed an average duration of 10 months, by excluding Bangkok it increased to 14.7 months. In the Northern region the average duration was 13.7 months; in the Northeastern 24.4 months and in the Southern region 18.8 months.

In a recall study by Winikoff, et al, the mean frequency of breastfeeds was 8 per day for infants in the 0 to 2 months age category.

Throughout urban Thailand an early shift from breast to bottlefeeding has been taking place. Although the initiation rate for breastfeeding is 90%, the actual prevalence rate is only 20-40%.

DETERMINANTS OF BREASTFEEDING

Studies have indicated that breastfeeding is more prevalent among women in higher socioeconomic groups, and among unemployed and less educated women. Fewer primiparas than multiparas tend to breastfeed exclusively. The effect of formal employment on breastfeeding mothers was difficult to interpret in the Contraceptive Prevalence Study due to the lack of detailed information regarding the nature of work and the meaning of coded categories. Lower rates of breastfeeding may not be a result of work alone, but rather a characteristic of the higher social class to which the working women belong (Knodel). Winikoff, et al, found that in Bangkok, maternal employment outside the home affected feeding patterns, however no reference to social class was made. In a study by Tontisirin, only 50% of mothers working at home breastfed their babies. Early contact with the infant increased initiation rates for breastfeeding, but did not influence the duration of breastfeeding.

Formula feeding is progressively associated with education and highest in mothers with 11 or more years of education. The Contraceptive Prevalence Survey showed that 4 out of 5 infants in urban areas had received formula or condensed milk, compared to 1 out of 4 rural infants. The major reasons mothers gave for stopping breastfeeding were: work outside the home (50% to 56%) and insufficient milk due to ill health of the mother. 10% to 29% of mothers stated that they stopped breastfeeding because their infants rejected the breast (this is common when infants are given both breast and bottle feeds at an early age) (Temechareon 1980 and Durongdej 1986).

When mothers were asked why they were bottlefeeding their infants, poor maternal health was the most frequent reason cited, followed by work outside the home (Temchareon 1980). The majority of mothers who returned to work gave up breastfeeding altogether (Durongdej 1986).

SUPPLEMENTATION AND WEANING PRACTICES

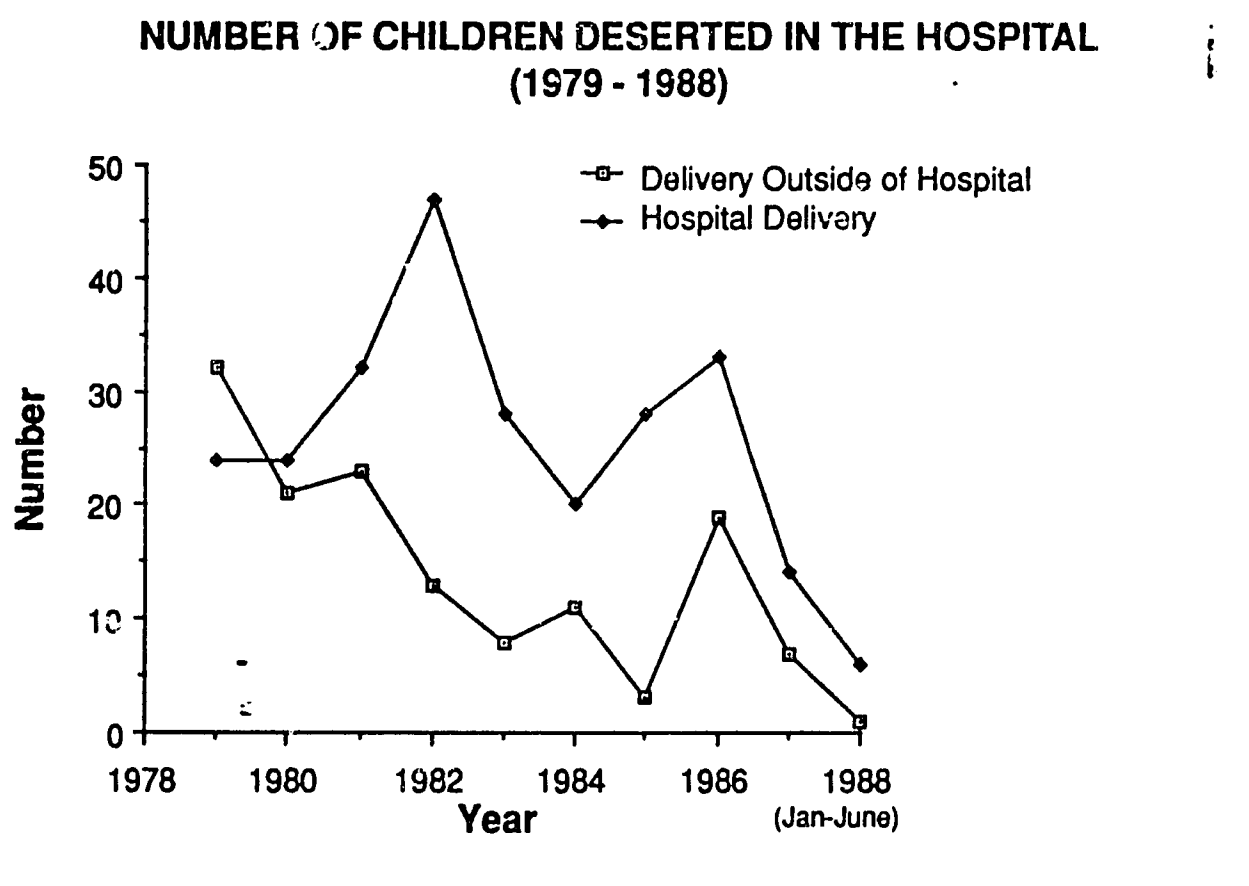
Regardless of education, region, urban or rural residence, the duration of exclusive breastfeeding is brief for Thai mothers and within the first month of life the majority of infants are given supplements of either mashed banana or banana and rice. Condensed milk and formula are the most common forms of breastmilk substitutes. Condensed milk is used more frequently in the South, while formula use is more common in the Central Region (Winikoff, Contraceptive Prevalence Survey 3, 1984).

MORTALITY AND MORBIDITY

A survey of 2492 infants aged 0 to 24 months conducted in Bangkok in 1981 found that 37% were suffering from malnutrition. 10% of severely malnourished infants were fed sweetened condensed milk. Episodes of salmonellosis and diarrhea were more frequent in bottle fed infants (Durongdej).

At Maharat Nakhon Ratchasima Hospital in Northeast Thailand (Figure 18), the percentage of children deserted in the hospital by their mothers was dramatically reduced after a policy of rooming-in and breastfeeding promotion was instituted (Vorapun).

Figure 18



Source: V. Pichaipat, et al. Developing Model Programs of Breastfeeding, Maharat Nakhon Ratchasima Hospital, Nakhon Ratchasima, Thailand, Paper No. 3, INVITATIONAL ASIAN REGIONAL LACTATION MANAGEMENT WORKSHOP

LACTATION CONTRACEPTION

When the duration of exclusive breastfeeding is short, the contraceptive effect is minimal. The Contraceptive Prevalence Study in 1984, found that the median duration of postpartum amenorrhea for mothers who were fully breastfeeding their infants in Thailand was slightly less than 6 months. Significant differences in the length of postpartum amenorrhea exist between rural and urban mothers. Rural mothers experience amenorrhea for a median duration of 6 and 1/2 months, while the median duration for urban mothers is less than 3 months. This is a direct reflection of breastfeeding practices. In the Northeast Region where breastfeeding is prolonged and supplementary foods are introduced later than in other regions, the duration of postpartum amenorrhea is longer.

AVAILABILITY OF FORMULA

Evidence suggests that many hospitals and clinics in Thailand have become sites for marketing and promotional activities by the manufacturers of breastmilk substitutes. Despite the fact that milk nurses have been banned, nurses do represent companies in the hospital setting. A cross-sectional survey in Bangkok found that 12% of mothers received a sample of artificial milk as they were leaving the hospital or clinic and 40% of mothers leaving the hospital received "discharge packs" of formula, underscoring the importance companies give this tactic in promoting their products. The practice of distributing formula was more evident in the private than in the public sector (Winicoff).

A number of Bangkok hospitals have retail stores which sell infant formula. While the hospitals claim that these products are solely available for the convenience of mothers, they are also a source of revenue for the hospitals.

BREASTFEEDING PROMOTION ACTIVITIES

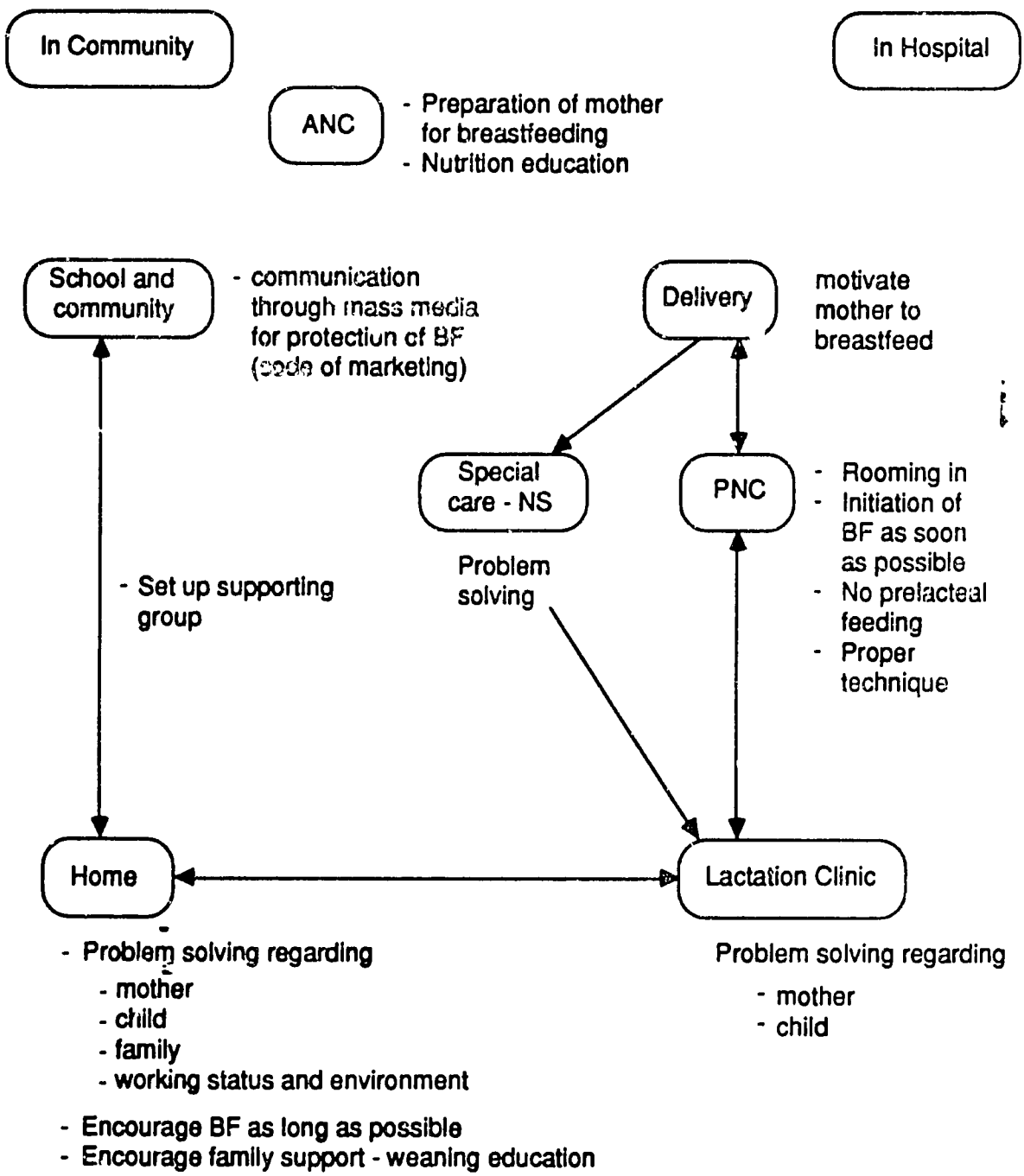
In its Fourth National and Social Development Plan (1977-1981), the government included the promotion of breastfeeding as a priority. The Ministry of Public Health is directly responsible for the promotion of breastfeeding countrywide. Training programs and seminars for all categories of health workers (down to the village level), have been organized in most parts of the country (Wirapong). Breastfeeding has also been encouraged through: the holding of contests for breastfeeding slogans and posters, seminars on the benefits of breastfeeding for a variety of health workers (including representatives from the food industry), exhibits, group discussions, lecture tours, mass media campaigns, the distribution of printed materials, visual aids, T-shirts and songs on breastfeeding recorded by popular singers (Jelliffe). The Family Health Division in the Department of Health has included breastfeeding management and promotion in annual refresher courses for all health personnel working in maternal and child health. All government medical, nursing and midwifery schools have incorporated breastfeeding into their curricula (Wirapong).

Seminars for health professionals, teachers, policy makers, administrators, and representatives from labor and the food industry, have been conducted by UNICEF, the Pediatric Association of Thailand, the Nutrition Association of Thailand, the Faculty of Public Health of Mahidol University, the Population Council of New York and the International Nutrition Communication Service (INCS).

Graduates of the USAID funded, Wellstart Program in San Diego, have established teams to conduct breastfeeding training and promotion at: the Faculty of Medicine Siriraj Hospital at Mahidol University in Bangkok and Maharat Nakornratchasima Hospital in Nakornratchasima province in Northeast Thailand (Figure 19). The teams have been conducting a series of on-going training and promotional activities within their institutions and

Figure 19

INTEGRATED COMPREHENSIVE BREASTFEEDING PROMOTION PROGRAMME
at
MAHARAT NAKHON RATCHASIMA HOSPITAL



Source: Thailand Presentation at Asian Regional Lactation Workshop, Denpasar, Bali, Indonesia, June 1988.

surrounding communities, as well as providing leadership for national activities relating to breastfeeding education and promotion (Wirapong).

The Bangkok Breastfeeding Project conducted an aggressive breastfeeding promotional campaign which included health education for mothers, rooming-in, prohibition of breastmilk substitutes and prelacteal feeds and in-service education for health professionals on the benefits of breastfeeding. Despite this campaign, breastfeeding initiation rates at Bangkok hospitals averaged only 56%. At 6 weeks, 20% to 70% of all participants contacted were still breastfeeding (Durongdej).

MATERNITY BENEFITS

In the public sector, 45 days of paid maternity leave, which begins after delivery, is allowed. An additional allowance of 50 Bhat per month for each child (up to 2 children), plus illness and dependents benefits are provided. Job tenure is guaranteed. In the private sector mothers are allowed 30 consecutive days after delivery and for illness. In large industry, mothers are eligible for dependents benefits. Jobs are guaranteed for only 30 days.

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

The government has banned the advertising of infant formula, which has led to a reduction in the mass media promotion of breastmilk substitutes. Recently however, the Code was revised to permit the donation of infant formula to institutions and organizations. The use of the donated products must be used by the institutions or organizations and must be confined to infants who need the products. The recipients should be the Directors or Heads of the Obstetric or Pediatric Divisions of the organizations or institutions concerned. The donations must be recorded and signed by both the donors and recipients.

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THE SOUTH PACIFIC

This includes the countries of Papua New Guinea, the Solomon Islands, Fiji, Tonga, Samoa, and Micronesia. Very limited data could be found on breastfeeding, infant feeding and weaning practices for this region.

PREVALENCE DURATION AND PATTERNS

Few studies have been conducte on the overall prevalence and duration of breastfeeding for Papua New Guinea, however, field observations show a total absence of bottles, teats and artificial milk in the hospitals, clinics and communities. Exclusive breast feeding appears to be the norm. What data there is for ever breastfed ranges from 78% (WHO, 1974) to 88% (Biddulph, 1979).

There are no figures available for overall mean duration of breastfeeding, however a number of small studies on feeding practices suggest that the practice of prolonged breastfeeding (up to 24 months) is widespread (Counts, Tietjen, Conton, Marshall).

A study conducted in the Suva area of Fiji between 1977 and 1980, revealed a declining trend in breastfeeding. For native Fijians the percent of exclusively breastfed infants declined from 60% to 46% and in the Indian population the rates declined from 26% to 19% (Lambert and Yee). WHO data from 1974 cites ever breastfed figures for Fiji to be 95%. By the age of 3 months, 85% of mothers were found to be supplementing and the mean duration given was 8 months. Hopkin and Lightbourne, et al, using 1974 data from the World Fertility Survey, show figures for ever breastfed of 86% with a median duration of 9 months.

The only data which could be found on the prevalance of breastfeeding on the other islands was a 1970 study from the Solomon Islands which showed figures for ever breastfed of 100% and a small 1969 study from Samoa which had rates of ever breastfed of 61% for infants aged 1 to 5 months, in the town of Apia and 100% on the island of Savai'i.

DETERMINANTS OF BREASTFEEDING

No information on the determinants of breastfeeding in the South Pacific Region could be found.

SUPPLEMENTATION AND WEANING PRACTICES

The situation regarding supplementation and weaning practices is unique in Papua New Guinea in that exclusive breastfeeding appears to be almost universal. Early supplementation is rare, for several reasons. Due to geographical and cultural isolation, "Westernization" in the form of bottlefeeding and work demands outside the home for women have not had the same impact as in most other countries. Secondly, the legislation passed in 1977 banning the sale of bottles and artificial milk, coupled with an extensive national breastfeeding promotion campaign, has encouraged exclusive breastfeeding and discouraged the practice of early supplementation. Counts states that breastfeeding has not decreased in the Papua New Guinea culture because it is strongly associated with kinship and there have been few social and economic pressures competing with the traditional domestic responsibilities for women's time. Even among working women in Port Moresby, a 1983 study showed that fluids other than breastmilk or weaning foods were usually not introduced until 3-4 months and then they were given by cup (Marshall).

A few studies found that colostrum was discarded

due to the belief that it would make the baby sick (Tietjen, Conton).

Wet nursing is common practice among close relatives (Counts).

The usual weaning practice pattern in Papua appears to be the introduction of coconut milk (usually green) and other solids such as bananas, sweet potato, taro, pumpkins, sago pudding, rice, biscuits or fruit at the age of 3 to 6 months. Weaning is usually gradual (Conton).

The late introduction of adequately nutritious weaning foods is a problem in Papua, causing malnutrition in many infants. Sweet potatoes, which are too bulky and do not contain adequate nutrients for young infants, are often the main staple of infants' diets.

In Fiji, Morse found that infants were not breastfed for 3 to 4 days because colostrum was thought to be impure. Supplementation with artificial milk from an early age was common and weaning foods were generally introduced at around 3 months of age.

On the Solomon Islands, colostrum is also thought to be harmful and is discarded. Solid foods were found to be introduced as early as 1 to 2 weeks after birth (Akin).

In Micronesia, 80% of the infants in a study by Marshall, et al, were introduced to solid food by 6 months of age and 50% were weaned completely.

MORTALITY AND MORBIDITY

A 1976 infant feeding survey in Port Moresby showed that 30% of infants were being artificially fed. Of these artificially fed infants, 69% were malnourished, compared to 26% of breastfed infants. A similar survey conducted in 1979, two years after the law banning the sale of bottles and artificial milk went into effect, found a statistically significant increase in breastfeeding between 1975 to 1979, a downward trend in malnutrition and a significant decrease in the number of infants under 6 months of age admitted to Port Moresby General Hospital with gastroenteritis. Prior to the legislation, 5 infants (all bottlefed) between 1975 and 1976, died from gastroenteritis. In the two years after the law was enacted no infants under 6 months of age died from this cause at Port Moresby General Hospital (Biddulph).

In Fiji, out of 100 infants admitted to Memorial Hospital in Suva in 1979 for clinical malnutrition, 80% were exclusively bottlefed (Lambert and Yee).

A 1976 survey in Micronesia found that the occurance of illness serious enough to warrant hospitalization was directly associated with exclusive bottle feeding in the first year of life (Marshall).

AVAILABILITY OF FORMULA

No specific information on the availability of formula in the South Pacific Region could be found.

LACTATION CONTRACEPTION

Sexual abstinence while breastfeeding is generally practiced in Papua New Guinea due to the belief that semen enters the breastmilk and is harmful to the infant (Agyei, Tietjen, Counts). This is an important factor in child spacing.

No further data on breastfeeding practices related to fertility in the South Pacific Region could be found.

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

In Fiji, the International Code was adopted in 1981. Advertisements of breastmilk substitutes and the

distribution of sample packets is forbidden. Proper labeling on all infant formula is required. Low prices for formula on bulk supplies to health centers are allowed but they are only to be used in special circumstances and then under the direction of a health worker.

Enforcement of the Code appears to be negligable however. On a consultancy visit to Fiji in 1986, Baumslag found widespread violations. Senior nursing staff at the hospitals were misinformed about basic breastfeeding practice. For example, they had been taught that only one twin could breastfeed because there was not enough milk for two, that in a hot climate infants needed supplementation in addition to breastmilk and that colostrum is not particularly valuable to infants health. Milk nurses were in the hospitals and clinics to demonstrate the use of formula, samples of artificial milk were everywhere and were being advertised extensively on the radio and in the newspaper. In general, there was no evidence that the WHO/UNICEF Code existed.

In 1977 Papua New Guinea adopted the Baby Feed Supplies Control Act which made baby feeding bottles available only by a doctor's prescription. Advertisements for breastmilk substitutes are prohibited and in 1984 the Minister of Health also declared any baby or infant feeding article (including baby cups which were being used as baby bottles) to be included in the Act. The fine for a first offence is up to 260 US dollars and for a second offence, up to 650 US dollars.

Samoa has discussed the adoption of the Code, but so far no action has been taken.

Tonga officially adopted the Code in 1984. The National Food and Nutrition Committee was appointed to monitor the Code and to increase public awareness regarding its meaning.

BREASTFEEDING PROMOTION ACTIVITIES

Tonga has an intensive breastfeeding promotion campaign which includes in-service training for nurses and women's groups and an extensive health education campaign for the public using slide shows, posters and free booklets.

Papua New Guinea mandates the education of all health workers and school children as to the benefits of breastfeeding. There is a national non-governmental breastfeeding support group called Susu Mamas and an on-going mass media campaign to promote breastfeeding which includeds posters.

MATERNITY BENEFITS

Papua New Guinea provides 6 weeks leave before and after delivery with 100% salary. Nursing breaks are given for 30 minutes twice a day and are counted as work time.

In Fiji specific maternity benefits apply to civil servants only. Mothers are given up to 12 weeks leave with 100% salary for the first three pregnancies and must stay out of work for six weeks post delivery. There are no provisions for nursing breaks or nurseries. Up to sixty days additional leave without pay may be granted in the case of illness arising from pregnancy or childbirth and dismissal from work is prohibited during maternity leave.

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NEAR EAST

EGYPT

PREVALENCE DURATION AND PATTERNS

Data on the prevalence of breastfeeding varies widely. There is however, consistant agreement from study to study regarding urban and rural differences. Women in the rural areas are significantly more likely to initiate breastfeeding, give supplements at a later age and less often and breastfeed for a longer period of time than their urban counterparts. An analysis of the data from local studies in both rural and urban areas in Egypt appears to show that the figures from WHO, UNICEF and the World Fertility Survey are artificially high. While it does appear that the majority of Egyptian mothers initiate breastfeeding, the data shows that the trend towards breastfeeding is declining and that the practice of early supplementation is widespread.

The figures for ever breastfed in Egypt range from a low of 77% (Mehalla-Kubra Hospital in Cairo) to a high of 97% (WFS 1980). At 3 months the percentage of mothers who are still breastfeeding ranges from 63% to 93%, at 6 months from 6% (Alexandria Hospital 1977-80) to 91% (UNICEF) and at 12 months from 1% to 84%. At 18 months the data shows that up to 47% of mothers are still breastfeeding (Egyptian Fertility Survey 1984).

A cross-sectional study, conducted in 1981, of 504 mother-child pairs from three socio-economic groups: 300 urban poor selected from urban slum areas and 100 urban elite mothers from Cairo, as well as 104 mothers from rural villages, found that 12% of urban poor, 18% of urban elite and 11% of rural mothers breastfed for less than 1 month (El-Mougi, et al).

Janowitz in a survey of records from El Galaa Maternity Hospital and University College Hospital in Cairo (n 6000), found that 86% of infants were ever breastfed (1977-79).

The Egyptian Fertility Survey conducted in 1984, concluded that the majority of Egyptian women breastfed their babies without supplementation for at least 6 months. However, this survey appears to have problems with recall errors and heaping of the data. In addition the life table analysis technique was used. This technique increases the estimated durations by excluding children born within 36 months of the survey followed by a subsequent birth and children who died before breastfeeding was terminated.

The data for the median duration of breastfeeding in Egypt varies from a low of 7 months (Harfouche) to a high of 19 months in the rural population (Popkin). Janowitz cites the mean duration as being 11 months. Popkin shows figures of 14 months for the urban population and the Egyptian Fertility Survey estimated the median duration of breastfeeding to be 19 months.

DETERMINANTS OF BREASTFEEDING

A significantly higher proportion of primaparas do not breastfeed their babies, indicating that the trend towards breastfeeding is declining (Nasser, et al). Breastfeeding practices vary with education in Egypt. For women with at least 7 years of education, only 45% were breastfeeding at 6 months compared to 75% for women with no education in a study by Janowitz in Cairo.
El-Mougi, et al, found that women who work outside the home breastfeed for shorter periods of time. Between 1-5 months, 47% of women who worked outside the home had stopped breastfeeding compared to 17% of housewives.

Several surveys (including the Egyptian Fertility Survey) found a correlation with the duration of breastfeeding and age of the mother. Mothers under age 35 tend to breastfeed for shorter periods of time than mothers age 35 or over. This is another indication as to the decline of breastfeeding in Egypt.

Nassar in a study of 200 mothers in Cairo found that 31% of mothers stated lack of milk as the reason for stopping breastfeeding, 23% stated maternal disease, 20% stated birth control pills and 9% cited maternal employment.

In a survey of 480 nursing mothers attending MCH centers in urban and rural areas in 1987, Salama also found that the principal reason cited for artificial feeding was lack of milk (51% rural, 63% urban). The next most common reason was mother's work (20% rural, 11% urban).

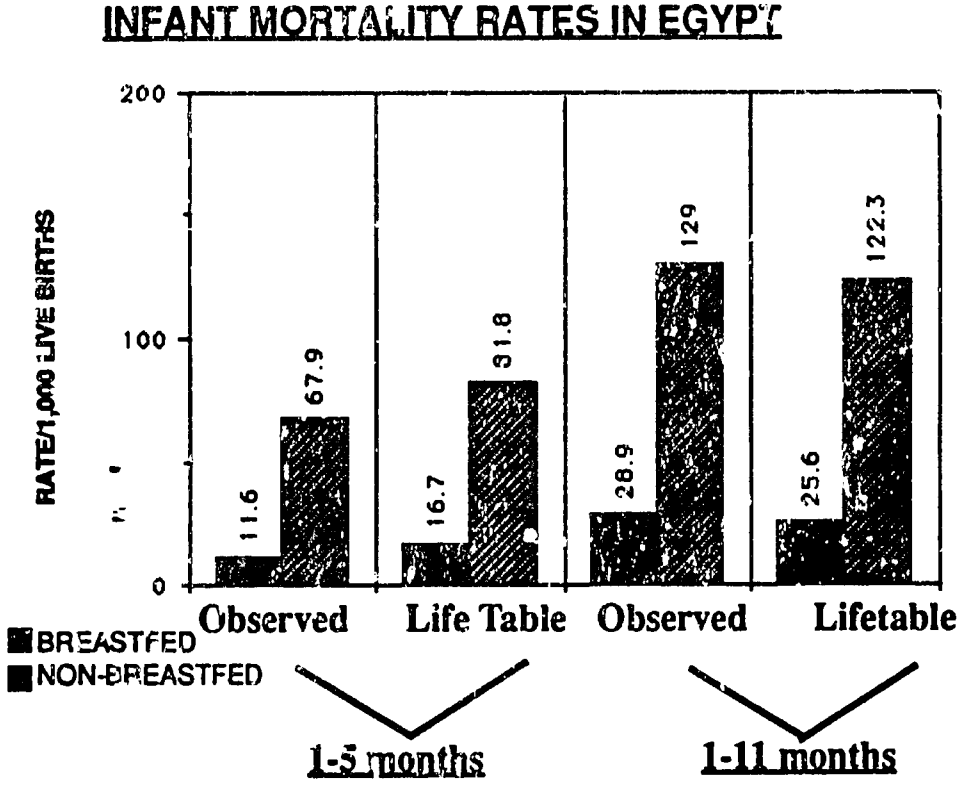
Mansour's survey of 600 mothers in Alexandria in 1975 indicated that lack of milk (36%) and health reasons pertaining to both mother and infant (31%) were the primary reasons for not breastfeeding. Also cited were lack of desire to breastfeed (17%) and defective nipples (16%).

Not enough milk was the reason cited by the majority of mothers who did not breastfeed (42%) in the Egyptian Fertility Survey. Illness of the mother (15%) or child (9%) were also cited as reasons.

SUPPLEMENTATION AND WEANING PRACTICES

Several studies indicate that colostrum is thought to be harmful to the baby, therefore breastfeeding is often delayed and prelacteal feeds of infusions of anise, caraway seeds, fenugreek, glucose water

Figure 20



Source: Adlakha, et al, Biological and social factors affecting infant and child mortality in Jordan, Tunisia, Egypt and Yemen, 1984.

and artificial milk, dates cooked in water and clarified butter are given (Harfouche, Raghen, et al and Salama). These feeds are thought to alleviate hunger and clean the intestines.
Mansour found that out of 600 mothers, 76% gave their infants prelacteal feeds. This contradicts the UNICEF, WHO and Egyptian Fertility Survey data that states there is little supplementation during the first 6 months of life and could be a contributing factor to the frequently cited problem of "lack of milk". When breastfeeding is delayed and supplements are given, breast milk production is reduced, decreasing the chances of success in breastfeeding.

Another factor favoring early supplementation is the belief that stress, anxiety, sadness or other "negative" emotions on the part of the mother makes the milk harmful to her baby (Ragheh, et al).

As noted previously, all studies reviewed indicated that children in rural areas are breastfed longer, receive fewer supplements and are completely weaned at a later age than urban children, although the pattern of feeding in the urban poor more closely mimics that of the rural population (Harfouche).

In a 1978 study in Upper and Lower rural Egypt, Serdula found that there is a seasonal variation in the pattern of infant weaning practices. The proportion of children likely to be weaned during the hot season was lower (40% vs 16% Lower Egypt, 36% vs 22% in Upper Egypt). It appeared that mothers avoided weaning in the hot season for fear of diarrheal disease.

Common weaning foods are boiled rice, biscuits, stewed broad beans, bread and milk puddings, sweet potatoes, molasses, cooked vegetables and local cheese. Eggs and meat are rarely given, except in the high income groups (Harfouche). In a 1982 study of 274 low income families in Cairo, Moussa found that 22% used commercial baby food, 45% used buffalo milk, 20% used cows milk, 30% used powdered milk and 68% used fresh milk diluted with water in a ratio of 1:1.

Weaning from the breast often occurs abruptly.

Common techniques include rubbing the nipples with cactus juice, hot spices, sabr (a bitter substance), or castor oil. Another common method is to close the slit in the mother's dress through which the child usually reaches the breasts or sometimes children are sent away to relatives when the mother feels it is time to wean. The majority of infants are weaned by the second year (Harfouche and Hefnawi).

Several studies suggest a widespread problem exists in Egypt with regard to the practice of prolonged breastfeeding with delayed supplementation of adequately nutritious weaning foods. The National Nutrition Status Survey in 1978 found that delayed supplementation, coinciding with a decreasing supply of milk and an increasing demand for food by the growing children (ages 6-23 months) was responsible for a prevalence of low weight for height, along with wasting and stunting (Harfouche).

MORTALITY AND MORBIDITY

Studies indicate that the mortality rates relating to early cessation of breastfeeding and the use of bottles for supplementation are high in Egypt.

In a survey of 2907 mothers at three Cairo university hospitals, Janowitz found that the early cessation of breastfeeding is associated with higher mortality and the effects are more severe the lower the education of the mother. Babies who are breastfed for 15-20 months have a survival probability of 93%, while babies who have never been breastfed have a survival probability of 64%. The probability of survival for a child who is breastfed up to a year is 29% higher than that for a child who has never been breastfed, or a difference in mortality rates of 290 per 1000.

In a 1981 study of 176 post-neonatal deaths and 176 surviving births selected from 4 urban and 7 rural health offices in Ismailia, Melek found that

the risk of post-neonatal death was 20 times higher for bottlefed vs breastfed infants. Gabr, in examining 100 infants, aged 3 months to 2 years, suffering from diarrhea, found that non-hygienic artificial feeding was the major cause of enteral infections.

Contamination and over dilution of artificial feeds were found in two studies. In a sample of 301 infants and their mothers attending MCH centers in Cairo, 58% of those using artifical formula had overdiluted it, 44% of the mothers used only soap and water to clean the bottles, 16% used water only, and 40% used salt and water (Moustafa). In a survey in Heliopolis, 83% of the mothers in the low socioeconomic group kept remaining formula in the bottle until the next feed, 29% of mothers used over diluted formula, none sterilized the bottle before feeding and kitchen salt was generally used to clean the bottles (Abdou).

LACTATION CONTRACEPTION

According to Farid, breastfeeding appears to prolong anovulation by 6 months in Egypt. Sayed, et al, reported a median duration of postpartum amenorrhea of 7 months. The median duration of rural mothers was longer (9 months). The median duration for urban mothers was 4 months. This parallels the relationship between the longer duration of breastfeeding for rural mothers. The proportion of mothers who were amenorrheic was significantly greater for mothers who were breastfeeding than for those who were not breastfeeding at every interval since birth. Women who were breastfeeding without supplementation were consistently more likely than women who had introduced weaning foods to report they were still amenorrheic. Among mothers for whom the interval since birth was between 7 and 12 months, 60% of those who were breastfeeding without supplements reported that their menstrual cycle had not yet resumed, compared to 40% of mothers who had begun supplementing their breastmilk with other liquids or solid food.

*Changes in the patterns of breastfeeding which may occur as urbanization and development continue in Egypt will contribute to higher fertility levels unless effective contraceptive practice levels increase proportionately.

In a 1975 study by Mansour of 600 mothers in Alexandria, the association between breastfeeding and postpartum amenorrhea was highly significant ($P<0.01$); 80% of mothers who breastfed had two or more months of postpartum amenorrhea, compared to 40% of those who did not breastfeed.

In a study by Gadalla, et al, educational differences in contraceptive use and breastfeeding tended to have opposite fertility effects, effects that canceled eachother out.

MATERNITY BENEFITS

Women in Egypt are given 12 weeks leave after delivery with 75% of their salary for 3 pregnancies. Enterprises employing more than 100 women must provide nurseries for children from 3 months to 6 years with mothers contributing to their financing. Nursing breaks must be provided (2 half hour breaks per day) until the child is 18 months old.

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

A law passed in 1980 prohibits the advertising of breastmilk substitutes in health care establishments. It also prohibits the demonstration and distribution of such products to mothers.
Samples of breastmilk substitutes may only be distributed to physicians and professional specialists.

AVAILABILITY OF FORMULA

No data could be found on the availability of formula in Egypt.

BREASTFEEDING PROMOTION ACTIVITIES

USAID funded (80-100,000 dollars) a program, which was directed by the Ministry of Health and a national breastfeeding support group. The program involved a mass media campaign, TV spots, posters, seminars, training courses and training centers and was implemented between 1983-85. Considering the population (estimated at over 48 million) and the high mortality associated with bottlefeeding in Egypt, this is an insignificant sum.

In the past several years, the Egyptian Society of Breastmilk Friends, funded by the National Diarrhea Disease Control Program, was created to promote breastfeeding in Egypt. The Society has generated media attention on the benefits of breastfeeding nationwide. In addition to social marketing, the Society's activities have included: research on infant feeding patterns, lactation clinics in 3 university hospitals, training programs for both health professionals and mothers on lactation management and curriculum development on breastfeeding in medical schools.

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JORDAN

PREVALENCE DURATION AND PATTERNS

As reported by Knodel in a 1981 report to USAID, "Omissions in breastfeeding data make analysis of breastfeeding trends in Jordan impossible." The problems encountered in analyzing breastfeeding data in Jordan are similar to those in other countries, such as artificially high rates due to the life table analysis method used in the World Fertility Survey and the lack of precise definitions for breastfeeding, with the questionable accuracy of recall data.

Of note, data from UNICEF 1975-83 shows prevalence rates for ever breastfed of 79% at 3 months, 70% at 6 months and 41% at 12 months. These figures, compared to other countries in the Arab Region are low and could be cause for concern regarding the declining trend in breastfeeding in Jordan.

WHO figures from 1974-76 show rates of 92-97% for ever breastfed, 81-87% for mixed breastfed at 3 months, 70-7[illegible]% at 6 months and 41-54% at 12 months. Popkin, et al, using data from the World Fertility Survey, cites figures of 92-95% for ever breastfed, 74-87% at 3 months, 65-79% at 6 months and 35-52% at 12 months. Harfouche cites a survey done by Khoury in a sample of 3800 mothers in Jordon in 1980 and found rates for ever breastfed were 92.8%.

Statistics for the mean duration of breastfeeding in Jordan vary and range from a low of 8 months in the urban population to a high of 16 months in the rural areas. Popkin, et al, cites a mean duration of 11 months (10 urban, 12 rural), Khoury found the average to be 14 months, the Jordon Fertility Survey 11 months (10 in Amman to 15 in small villages), and CARE'S survey conducted in the rural areas in 1978 reported a mean duration of 16 months.

DETERMINANTS OF BREASTFEEDING

The use of oral or other modern contraceptives and education of the mother is associated with a decrease in the percentage of ever breastfed in Jordon according to Popkin. Older women are more likely to initiate breastfeeding and breastfeed longer than younger mothers, which is a pattern similar in other Near Eastern countries, indicating a possible overall declining trend towards breastfeeding.

Lack of milk and illness in the mother were the primary reasons for not breastfeeding found by Pharaon. Harfouche cites mothers' work and lack of milk (42% each), subsequent pregnancy (30%) and health of the mother (28%) as the most common reasons for not breastfeeding.

SUPPLEMENTATION AND WEANING PRACTICES

Early supplementation appears to be common practice in Jordan. As early as 1965, a survey of 4140 infants found that 25% had received supplementary food by less than 3 months. In 1977, Hijazi's survey of 3734 infants showed that 90% were receiving animal milk during the first 3 months of life. The Jordan Fertility Survey found that 80% of neonates in the rural areas were fed sugar solution after birth and that breastfeeding was generally delayed from 1 to 3 days.

The practice of administering prelacteal feeds of decoctions of anise, caraway and other kinds of seeds and herbs between breastfeedings from birth on, appears to be common practice, as in other countries in the Near East Region, according to

Harfouche. He also states that weaning appears to be initiated early in Jordan, with 31.4% beginning supplementary foods by 4 months, 90% by 10 months and by 12 months over 98% of infants are receiving additional foods.

The practice of abrupt weaning, which is common in other Near Eastern countries, is also a pattern in Jordan. Bitter or spicey substances are applied to the breasts, the breasts are withheld or hidden from the infant or the child is sent away from home for a period of time when weaning is desired (Harfouche).

Common weaning foods are cow, sheep and goat's milk, tea and rice water, bread, rice, biscuits, potatoes, stewed beans, cooked vegetables, yogurt, local cheeses, cereals and fruits. Unlike other Near Eastern Countries, eggs are commonly given in Jordon (Pharoun).

AVAILABILITY OF FORMULA

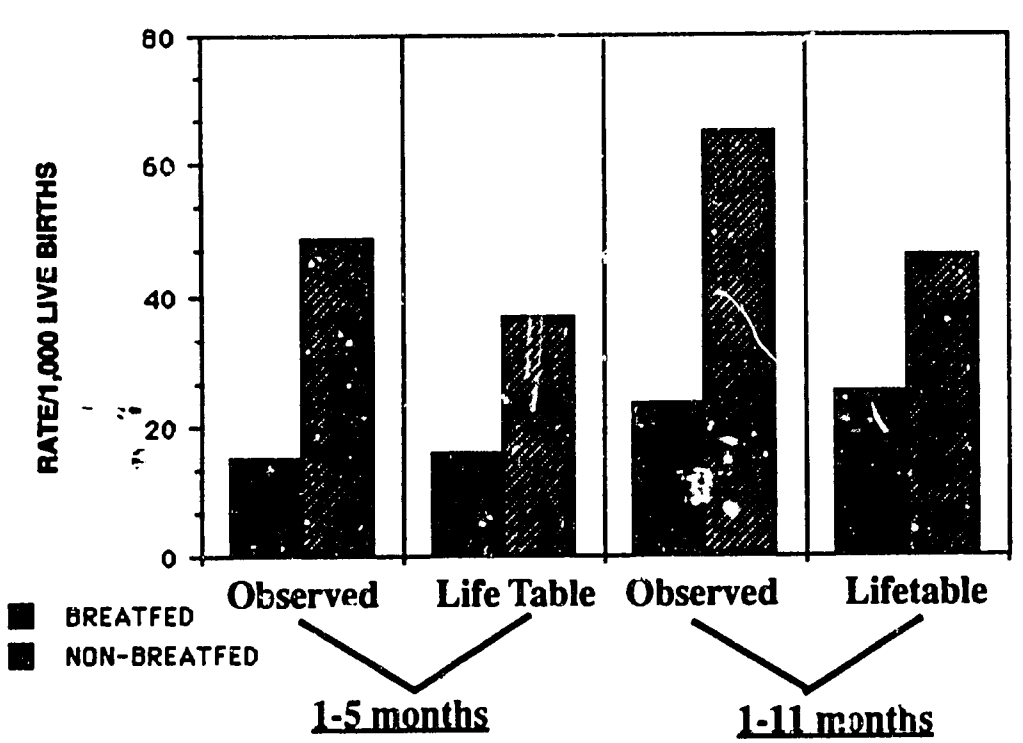
No specific references or studies could be found on the availability of formula in Jordan.

MORTALITY AND MORBIDITY

A survey of malnourished children in Jordan revealed a pattern of a short duration of breastfeeding (less than 6 months) or prolonged breastfeeding (more than 24 months).

Harfouche, citing a study by Hijazi, found that malnourished children were more frequently bottlefed than well-nourished children and that mothers of malnourished children generally did not boil the bottles when giving formula or other liquids. The mortality rate in bottlefed infants was 57.3/

Figure 21



Source: Adlakha, et al, Biological and social factors affecting infant and child mortality in Jordan, Tunisia, Egypt and Yemen, 1984.

1000 compared to 10.2/1000 for fully breastfed infants and 25.7/1000 for mixed breast and bottlefed infants.

LACTATION CONTRACEPTION

No specific studies for Jordan could be found, however Popkin states that in Jordan the World Fertility Survey data indicates that breastfeeding may be at levels low enough to cause concern related to birth spacing.

MATERNITY BENEFITS

Mothers in Jordan are allowed 40 days leave with 50% salary. The govenment encourages the establishment of nurseries in public and private organizations.

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

A Ministry of Health Committee is preparing a special standardization for child and infant food supplements that will be in harmony with the WHO/UNICEF Code. All articles in the Code will be covered.

BREASTFEEDING PROMOTION ACTIVITIES

No data on breastfeeding promotion activities could be found.

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MOROCCO

PREVALENCE DURATION AND PATTERNS

There is little data available on breastfeeding practices in Morocco. The data on breastfeeding from the World Fertility Survey collected in 1979, with a sample size of only 378 respondants, showed urban/rural differences similar to other countries in the Arab Region. At 3 months the figures for combined breast and bottle feeding were 83% in the urban population and 87% in the rural. At 6 months the figures were 75% for the urban areas and 83% for the rural. By 12 months the figures had declined to 62% for the urban areas and 74% for the rural.

UNICEF, however, in State of the World's Children 1987 cites conflicting figures for the prevalence of breastfeeding in Morocco, which is difficult to understand. One section of the report gives figures of 95% ever breastfed at 3, 6 and 12 months. Another section cites figures of 95% ever breastfed at 3 months, and 61% at 6 months.

Westinghouse in two separate reports also cites conflicting data on the prevalence of breastfeeding in Morocco. In the report Child Survival:Risks and the Road to Health, citing UNICEF data from 1975-83, the figures for ever breastfed are 93% at 3, 6 and 12 months. In the Contraceptive Prevalence Report one section gives figures of 96% ever breastfed for illiterate mothers and 88% for educated mothers. The same report shows figures of ever breastfed of 92% at 0-2 months, 88% at 3-5 months, 76% at 6-11 months, 50% at 12-23 months and 11% at 24-36 months.

The median duration for breastfeeding in Morocco, citing World Fertility data from 1979, is 16 months in the urban population and 17 months in the rural.

DETERMINANTS OF BREASTFEEDING

Westinghouse in their report on Family Planning and Fertility in Morocco cites health of the mother as the most common reason for not breastfeeding (43%) in the urban population. The second most common reason was lack of milk (39%) and 6% stated they did not want to breastfeed. In the rural population lack of milk was most frequently cited as the reason for not breastfeeding (45%). Health problems in the mother was given in 23% of cases and 14% stated that they did not want to nurse.

SUPPLEMENTATION AND WEANING PRACTICES

Israel, et al, state that solid foods are given on the average by the 15th month. Common weaning foods are camel's milk, cereals such as semolina, corn, bread, macaroni and sweet mint tea. Regional differences appear to exist in weaning practices. Nomadic people in the south of the country generally wean their children more gradually than people living in the north. Also of note in the study was the fact that prior to a national nutrition program in 1978, 98% of mothers questioned indicated that they practiced abruptive weaning techniques. After the program, out of a sample of 692 mothers, only 15% stated that they would wean their infants abruptly.

MATERNITY BENEFITS

Women in Morocco are given 12 weeks of maternity leave, 6 of which must be taken after the delivery, at 50% of their salary. Employers must establish nurseries for working mothers and allow nursing breaks of 30 minutes, twice a day for up to 1 year.

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

An interministerial commission was set up by the Prime Minister in 1981. This commission has studied the problems of imported baby foods and measures have been taken to limit the import of these products and make them subject to licencing. The commission has also investigated the possibility of producing weaning foods in Morocco. Copies of the Code have been distributed to all medical personnel.

BREASTFEEDING PROMOTION ACTIVITIES

The Government of Morocco has sponsored mass media campaigns for the promotion of breastfeeding according to The Clearinghouse on Infant and Maternal Nutrition.

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TUNISIA

PREVALENCE DURATION AND PATTERNS

The amount of information on breastfeeding in Tunisia is very limited. UNICEF in State of the World's Children 1986 states that 95% of mothers in Tunisia are breastfeeding at 3 months, 92% at 6 months and 71% are still breastfeeding at 1 year. Data from a hospital in Tunis however, suggests that the practice of bottlefeeding occurs quite early in a large percentage of urban mothers. In this study 40% of the mothers did not breastfeed. At 2 months only 51% were still breastfeeding and the percentage decreased to 12% by 12-14 months (Maternal Record Book 1981).

The prevalence of breastfeeding appears to be significantly higher in the rural areas. Popkin, citing figures from the World Fertility Survey, stated that at 6 months 90% of all infants were breastfed in the rural areas, compared to 60% in the urban. By 12 months the prevalence had decreased to 70% in the rural population and 30% in the urban.

The KAP Survey, conducted in 1982-83, found that the mean duration for exclusive breastfeeding was around 4 months in the lower and medium socioeconomic groups and only 3 months in the high socioeconomic group.

The overall mean duration of breastfeeding in Tunisia was found to be 15 months by the World Fertility Survey.

DETERMINANTS OF BREASTFEEDING

Popkin states that the use of oral or other modern contraceptives in Tunisia has been found to be associated with a reduction in the practice of breastfeeding. He also states that women who work outside the home tend to breastfeed for a shorter period of time (10 months) than women who work at home or not at all and that the presence of older daughters in the household increases the probability and duration of breastfeeding. Both Vermury and Popkin found that girls were breastfed for a shorter period of time than boys, indicating a preference for male children.

SUPPLEMENTATION AND WEANING PRACTICES

Colostrum is generally believed to be harmful to the infant and discarded. The practice of giving food items to the newborn immediately after birth (prelacteal feeding), such as olive oil, s'men, cumin and clarified butter, was observed in 58% of households sampled by Vermury in 1979. This practice was believed to have a laxative or strengthening effect on the infant.

Vermury found that the average age that food supplements were given was 5 months. Common weaning foods observed were biscuits, breads, flour and cereal products in a gruel form, cooked and mashed vegetables, diluted milk, yogurt, cheese and eggs. Animal proteins were given when affordable. Gradual weaning was practiced in 38% of households, while a total of 37% used abrupt measures such as applying bitter substances to the breast or stopping breastfeeding at once.

In the KAP Survey, the most frequently cited reasons for weaning in the high socioeconomic group were lack of milk (26%) and the child is old enough (51%). In the medium group lack of milk (19%), the child is old enough (48%) and pregnancy (15%) were the most common reasons for weaning. In the low socioeconomic group 18% stated that the mother was ill or tired and 67% stated the child was old enough. The working group cited lack of milk (24%), the mother is ill or

tired (16%) and the child is old enough (35%) as the reasons for weaning.

LACTATION DIET

To promote lactation mothers are given galactogogues such as herb tea (verveine), water boiled with caraway, fenugreek and coriander seeds, wheat, barley, couscous, raisins and dates. Foods that are generally avoided during lactation by mothers include legumes, spicey dishes, onion, garlic, meat, cucumbers, watermelon, fish, raw fruits and vegetables, sour oranges and occasionally eggs (Vermury).

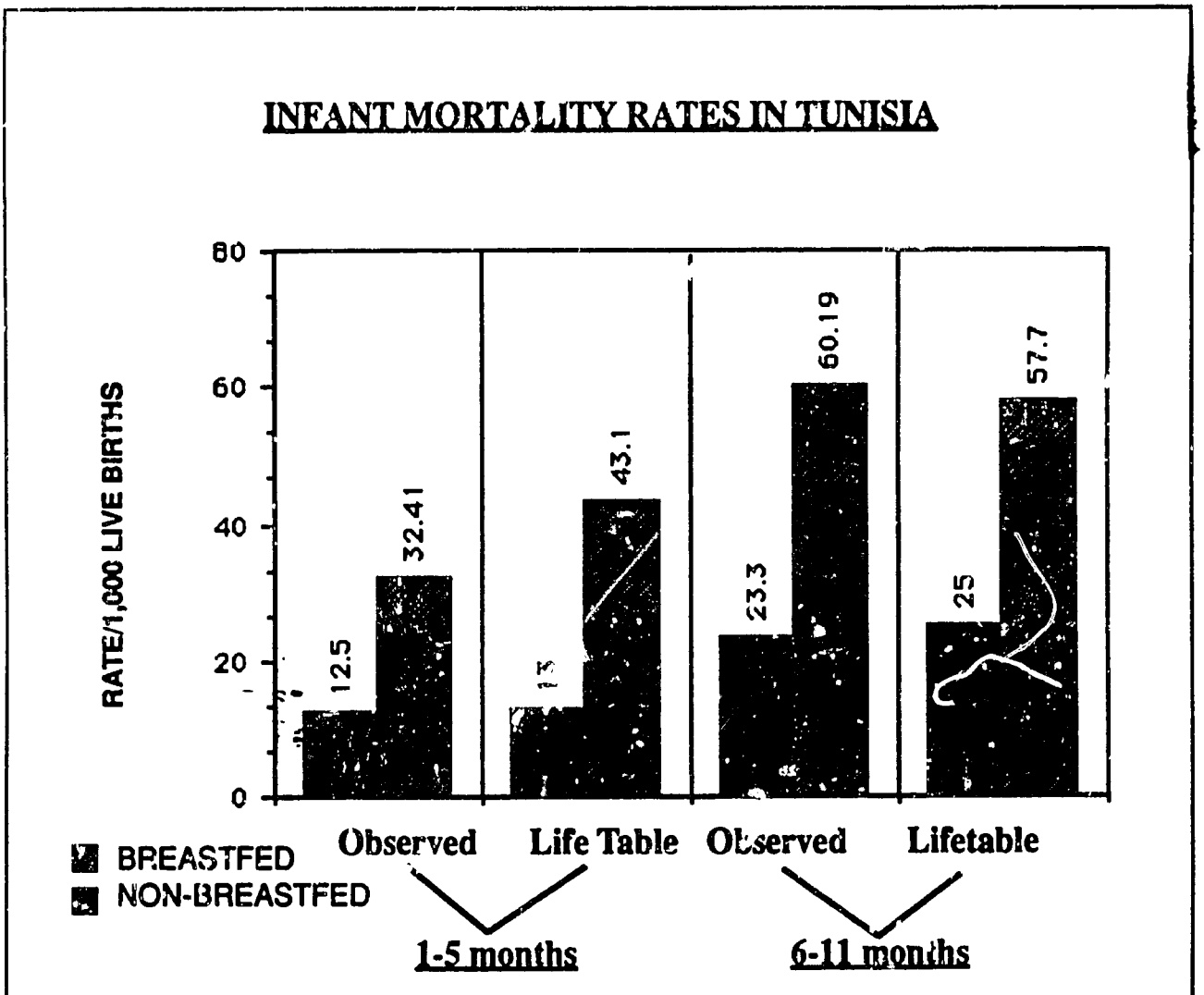
LACTATION CONTRACEPTION

Tunisia has the highest rate of current contraceptive use (36%) in the Arab Region. Breastfeeding appears to prolong the period of anovulation by an average of 6 months. (Farid)

AVAILABILITY OF FORMULA

No studies could be found on the availability of formula.

Figure 22



Source: Adiakha, et al, Biological and social factors affecting infant and child mortality in Jordan, Tunisia, Egypt and Yemen, 1984.

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

A law was passed on March 4, 1983 which prohibits the advertising of breastmilk substitutes. The distribution of samples of breastmilk substitutes and utensils used for bottlefeeding are restricted. Labels on substitutes must emphasize the superiority of breastmilk and provide preparation instructions in Arabic.

MATERNITY BENEFITS

Tunisia provides 8 weeks leave with full pay which may be increased by request by 16 weeks with half salary. Enterprises employing more than 50 women must provide a nursing room. Breastfeeding breaks are allowed for up to 2 hours per day for the first 6 months, then 1 hour per day for a year.

BREASTFEEDING PROMOTION ACTIVITIES

In 1976, a grassroots effort to promote breastfeeding was initiated by the National Institute of Nutrition and a Peace Corps volunteer. A national chapter of La Leche League International was established in Tunis. Local women were trained as breastfeeding counselors and nutrition education courses, emphasizing the benefits of breastfeeding, were given to 2nd year students at the National Institute of Nutrition.

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YEMEN

PREVALENCE DURATION AND PATTERNS

Figures on the prevalence of breastfeeding in Yemen range from a low of 80% (UNICEF) to a high of 97% (WHO) for ever breastfed. Popkin states that figures from the World Fertility Survey show that while over 90% of Yemeni infants are breastfed at birth, there are significant declines in breastfeeding in the first six months of life, especially in the urban areas. The Yemen National Nutrition Survey shows figures of 54% of infants breastfed in the urban areas and 76% in the rural areas at age 6 months. By 12 months the figures have decreased to 24% in the urban areas and 55% in the rural areas and by 24 months the figures are 4% (urban) and 18% (rural).

The National Nutrition Survey shows a median duration of 6 months for urban areas and 13 months for the rural. Popkin cites a median duration of 10 months in the urban areas (WFS data).

DETERMINANTS OF BREASTFEEDING

In a study in Sana, the most common reason for not breastfeeding was mother's work. Other common reasons were lack of breast milk and pregnancy. Adra's 1983 survey in Ahjur found similar reasons. Most of the women surveyed stated that they did not have enough time to breastfeed, they did not have enough milk, that their milk was "weak" or not satisfactory.

Women working at home breastfeed for a longer duration of time. Women who work away from home are less likely to ever breastfeed (Popkin).

SUPPLEMENTATION AND WEANING PRACTICES

The practice of prelacteal feeds, like elsewhere in the region, appears to be common. Sweetened water, honey, cows milk or cream are generally put into the baby's mouth on a finger tip, a soaked piece of cotton or a bottle. These feeds may continue along with breastfeeding indefinately (Greiner).

Wet nursing is generally not practiced in Yemen due to the belief that nursing an infant establishes a sibling bond between the baby and the children of the wet nurse. In the rural areas, where the number of potential marriage partners is already limited, this belief certainly inhibits the practice of nursing another person's child.

It has been customary in the past for boys to be breastfed longer than girls in Yemen, which is probably related to the fact that male children are generally more valued than females. There is some evidence however that this practice is changing and in fact with the rising popularity of bottlefeeding in Yemen along with the perception that artificial milk is "superior" to breastmilk, some studies indicate that male infants are given formula sooner than females (Goldberg, et al).

Greiner states that although breastfeeding is still practiced, especially in the villages, it is being supplemented sooner with the bottle and stops altogether at an earlier age. There is consistent evidence to suggest that supplementation in the form of bottlefeeding begins at a uniformly early age in Yemen, on the average around 2 months of age. The National Nutritional Survey found that 43.2% of infants by the age of 3-5 months had consumed Nido, Family Milk, or Nono brands of milk (1980).

The age of introduction of solid foods varies from region to region. Beckerleg in 1979 found that 60% of infants in Al Qa had received solid foods by 4 months of age, however Pettigrew (1978) in Rowdah found that 48% of infants at age 6 months had not received solid foods. In Amran 53% of

infants had received solids by 3 months and 48% had received solids by age 2 months in Suq Al Baqr (El Daher, 1980).

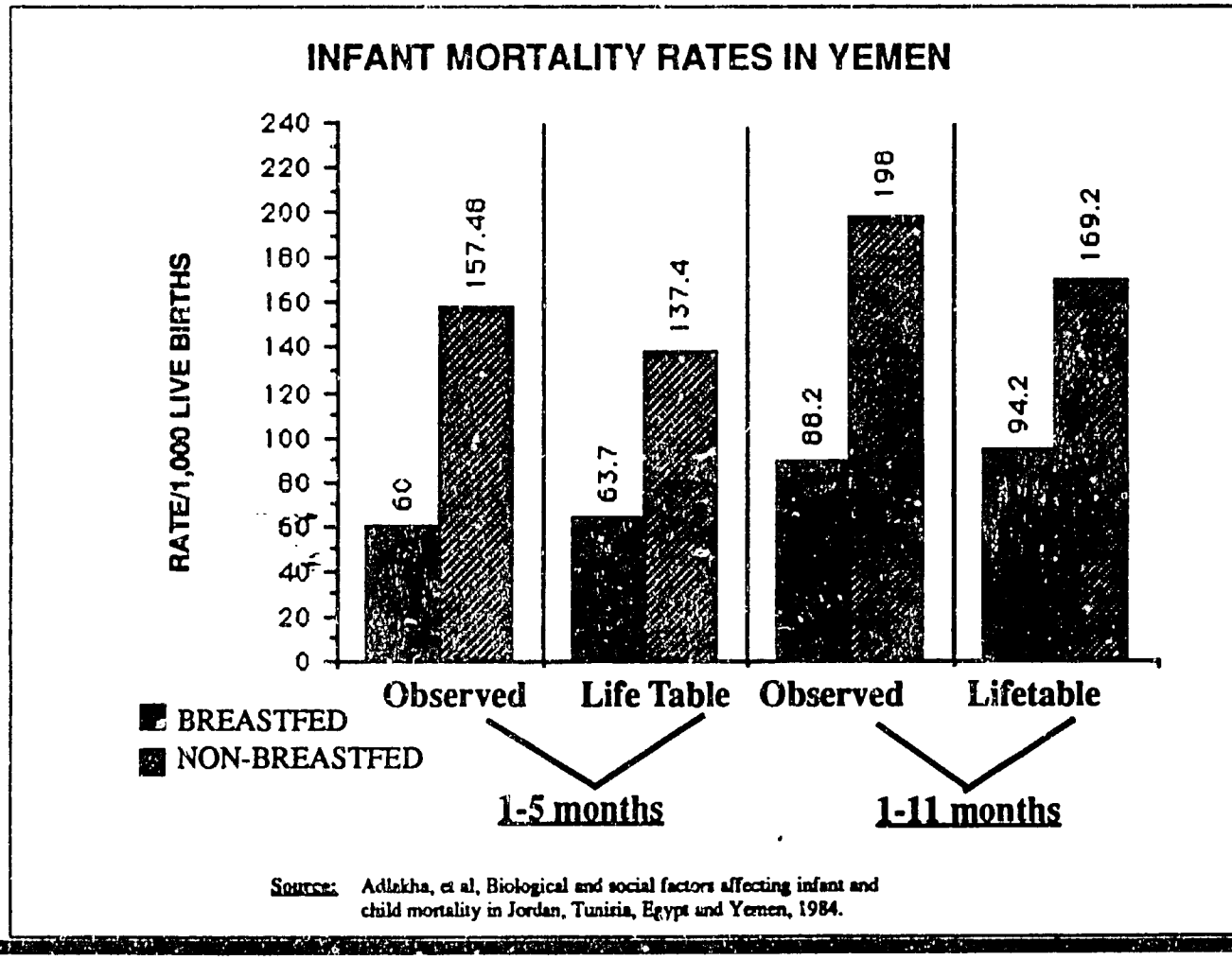
In addition to artificial milk, animal milk, tea and water sweetened with honey or sugar, common weaning foods are gruel made with barley flour, soured skimmed milk and spices (madid), porridge made of wheat flour, butter fat and honey (harish), biscuits, rice, potatoes, and bananas. Foods are considered to be "good" if they are soft, light, easy to swallow and not strongly spiced and "bad" if they are heavy, hard to chew or swallow. Beans, meat or eggs are rarely given and in general the emphasis with weaning foods is not on nutritive value but on consistancy and taste (Harfouche). Almroth states that among children from 6 months to 2 years the problem is that they are not given enough food due to the belief that infants should only eat food that is soft and watery.

MORTALITY AND MORBIDITY

Greiner states, *"The major cause of both the malnutrition and diarrhea among infants in Yemen is probably bottlefeeding."*
Gastroenteritis resulting from dirty bottles and contaminated milk is common and aggravates undernutrition (Harfouche). In 1978 the Ministry of Health stated that women, especially in the urban areas are beginning to prefer bottlefeeding, with all the associated health hazards. The combination of delayed supplementation of nutritious foods and bottlefeeding with non-sterilized plastic bottles are undoubtedly the major causes of the high levels of PEM which are currently observed in Yemen (Harfouche).

In 1983, David, in a study at the Al Qa MCH Clinic, found that the use of artificial milk was associated with an 8-fold increase in the risk of severe malnu-

Figure 23



Source: Adlakha, et al, Biological and social factors affecting infant and child mortality in Jordan, Tunisia, Egypt and Yemen, 1984.

trition. The results from 3 studies show that exclusively breastfed babies under 6 months of age had a higher nutritional status than those who were mixed fed, who in turn were better off than those infants who received only the bottle (Greiner).

AVAILABILITY OF FORMULA

A study by Almroth in 1977 found over twenty different brands of infant formula, thirty brands of full cream milk powder and seven brands of evaporated milk in the markets in Yemen. Brand names of the milks such as Nono (Arabic for baby), My Boy, Mother's Boy, Bonnie Baby and Dutch Baby, as well as pictures of happy, smiling babies contribute to the image that artificial milk is better than breastmilk. Feeding bottles were found to be available for sale even in the smallest shops in the remote villages.

Companies have been able to increase their sale of artificial milk by capitalizing on traditional beliefs about breastfeeding in Yemen. The widespread belief that colostrum is "dirty" and not good for the infant contributes to the practice of supplementation with formula for the first three days after birth. This practice, aside from introducing formula, has the adverse effect of interfering with the establishment of the mother's milk supply and is a major factor in the common reason cited for not breastfeeding, "lack of milk." The other belief which discourages breastfeeding is that if the mother is pregnant, angry, frightened, jealous or in any type of "negative" emotional state, her milk will be harmful to the child.

SPECIAL CONSIDERATIONS

Yemenis chew a mildly narcotic leaf called Qat with amphetamine-like properties. It is estimated that about 60% of men and 35% of women are habitual users and the practice is becoming even more common with the recent influx of wealth being brought into Yemen from workers returning from the oil-rich countries of the Gulf and Saudi Arabia. Although no specific studies could be found on the phenomena of breastfeeding and the use of Qat, it almost certainly interferes with the mother's lactation process and decreases her milk production. It is also a depressant, which could adversely affect the mother-infant relationship.

Bottle-propping, which is the practice of leaving the infant alone with the bottle stuck in their mouth, held in balance with cushions or other objects, appears to be a common practice in Yemen (Greiner). There are a number of harmful repercussions associated with this practice. Bottle-propping can lead to suffocation from milk aspiration and otitis media (specifically found to be common in the area of Udain in Yemen) because milk trickles down the infant's cheek and into its ear. The practice is also psychologically damaging to infants because it deprives them of needed body contact and stimulation.

LACTATION CONTRACEPTION

Breastfeeding appears to prolong the period of anovulation by 6 months in Yemen (Farid). Modern contraception is not widely practiced.

MATERNITY BENEFITS

Mothers receive 6 weeks leave before and 8 weeks after delivery, with 70% of their salary. There are no provisions for nursing breaks or nurseries.

MARKETING CODE/ GOVERNMENT LEGISLATION AND POLICIES

A committee has been formed by the Ministry of Health to formulate proposals concerning the marketing of breastmilk substitutes.

BREASTFEEDING PROMOTION ACTIVITIES

No information on breastfeeding promotion activities could be found.

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APPENDICES

Appendix A

DEMOGRAPHIC HOUSEHOLD SURVEY

THIS IS CLEARLYAN EXPANSION OVER WFS HOWEVER IT SUFFERS, AS ALL CROSSSECTIONAL SURVEYS FROM RECALL BIAS AND DOES NOT CLARIFY THE AMOUNTS OF OTHER FOODS THEIR TIMING IN RELATION TO BREAST FEEDING NOR THE LONGEST INTERVAL BETWEEN FEEDS (Winikoff)

SECTION 4. HEALTH AND BREASTFEEDING

406 Did you ever feed (NAME) at the breast?	YES.....1 NO.....2 (SKIP TO 409)	YES.....1 NO.....2 (SKIP TO 409)	YES.....1 NO.....2 (SKIP TO 409)	YES.....1 NO.....2 (SKIP TO 409)
407 Are you still breastfeeding (NAME)? (IF DEAD, CIRCLE '2')	YES.....1 (SKIP TO 409) NO (OR DEAD).....2			
408 How many months did you breastfeed (NAME)?	MONTHS.....[ ][ ] UNTIL DEATH.....96	MONTHS.....[ ][ ] UNTIL DEATH.....96	MONTHS.....[ ][ ] UNTIL DEATH.....96	MONTHS.....[ ][ ] UNTIL DEATH.....96
409 How many months after the birth of (NAME) did your period return?	MONTHS.....[ ][ ] NOT RETURNED.....96	MONTHS.....[ ][ ] NEVER RETURNED.....96 (ALL SKIP TO 411)	MONTHS.....[ ][ ] NEVER RETURNED...96 (ALL SKIP TO 411)	MONTHS.....[ ][ ] NEVER RETURNED...96 (ALL SKIP TO 411)

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
413	How many times did you breastfeed last night between sundown and sunrise?	NUMBER OF TIMES.....[ ][ ] AS OFTEN AS CHILD WANTED.....96	
414	How many times did you breastfeed yesterday during the daylight hours?	NUMBER OF TIMES.....[ ][ ] AS OFTEN AS CHILD WANTED.....96	
415	At any time yesterday or last night, was (NAME OF LAST CHILD) given any of the following? Plain water? Juice? Powdered milk? Cow's or goat's milk? Any other liquid? Any solid or mushy food?	YES NO PLAIN WATER.....1 2 JUICE.....1 2 POWDERED MILK.....1 2 COW'S OR GOAT'S MILK.....1 2 ANY OTHER LIQUID _____.1 2 (SPECIFY) ANY SOLID OR MUSHY FOOD.....1 2	
416	CHECK 415: WAS GIVEN FOOD OR LIQUID [ ] NO FOOD OR LIQUID GIVEN [ ]		418
417	Were any of these given in a bottle with a nipple?	YES.....1 NO.....2	

THE POPULATION COUNCIL

SECOND DRAFT

Breastfeeding Module

1) Are you now breastfeeding your last child?

1. Yes (Go to Q.4)
2. No

2) Has s/he ever been breastfed, even for a short period?

1. Yes
2. No (Go to Q.8)

3) How old was s/he when you stopped breastfeeding?

___years ___months If less than 1 month 1 2 3 ___weeks

4) Did you start breastfeeding immediately after his/her birth or did you wait for a day or two?

Immediately after birth_____ (Go to Q.6)

After a gap of some time____hrs.____days

5) What did the baby get between birth and the time you started breastfeeding? [ ] nothing [ ] tea, sweetened water [ ] formula, powdered milk [ ] other

Yesterday? 6) How many times do you usually breastfeed your child?

- in the morning ___times
- in the afternoon ___ times
- in the evening ___ times
- during the night ___ times

NOTE: This was used in part for the Westinghouse protocol. Breastfeeding is not defined.

7) Did you ever give your child a pacifier?

1. No

		Age of Child	
2. Yes	☐ when started	___Yrs	___Mos
	☐ when stopped	___Yrs	___Mos
	☐ still using		

8) Are you now giving him/her any breast milk substitute such as formula, powdered milk, or animal milk?

No ☐ Go to Q.10

Yes ☐

9) a. How do you give it?

Bottle with nipple ☐

Other ☐

b. How many times per day do you give it? _____

c. Age of the child when you started? ___Yrs ___Mos

Go to Q.11.

10) Did you ever give him/her formula or other milk?

1. No

		Age of child	
2. Yes——	when started	___Yrs	___Mos
	when stopped	___Yrs	___Mos

11) Are you now giving him/her any of the following foods or drinks?

			Times per day	Age of child
Solid or semi-solid food (e.g., cereal, pap, bread, fruit, rice)	☐ No	☐ Yes--	___times--	When started?___Yrs ___Mos
Water or juice	☐ No	☐ Yes--	___times--	When started?___Yrs ___Mos

12) Has regular menstruation started since your last birth?

1. No

	Age of child	
2. Yes --- When did it start?	___Yrs	___Mos

(Note to interviewer: If answer is one month, this is not likely to be a first menstruation because all women have bleeding during the first postpartum month. Ask for time of next menstruation and enter time. If no other bleeding, enter as not currently menstruating.)

13) Have you resumed sexual relationships since last birth?

1. No (Go to Q.14)
2. Yes. When? Age of child ___Yrs ___Mos (Go to Q.15)

14) Why not?

- [ ] Still breastfeeding
- [ ] Husband away
- [ ] Other

15) Is a woman less likely to get pregnatwhile she is nursing her child?

Yes ___ (Go to Q.16)

No ___ (Stop; End Questionnaire)

Do not Know ___ (Stop; End Questionnaire)

*Content of list to be determined in each site

16) Is she more likely to get pregnant before resuming menstruation of after?

Before ____

After ____

Same ____

17) If a woman continues to breastfeed her child after the resumption of menstruation, can she get pregnant?

Yes, she can ____

No, she can't ____

18) Did you ever breastfeed any of your children in order to delay the birth of the next child?

Yes ____

No ____

NOTES:

1. At end, questions 2,3,7-11 will be numbered questions 19-25 for any other surviving child under three.
2. For children born in last three years now dead use questions 2,3,4,5,7,10 (change to "ever") on separate sheet

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For Discontinuation of breastfeeding:

1. What questions, if any?
2. Problem areas: insufficient milk
   relationship to contraception
   relationship to terminal event for non-surviving children

WHO BREASTFEEDING SURVEY INSTRUMENT

QUESTIONNAIRE	Coding Column DO NOT WRITE IN THIS SPACE
3.3 Was the baby given any other liquid during the first three days? yes ☐ no ☐	___
If no, specify what it was and approximately how many times ..... times	___ ___
3.4 After delivery was baby kept:	
In same bed ☐	___
In same room but in a separate bed/cot ☐	___
In a different room ☐	___
6. 6.1 Did she take her baby to see a health care worker (or did a health care worker visit her)?	
Within the first week ☐	___
Within the first month ☐	___
Within the first two months ☐	___
Within the first three months ☐	___
Has.	
If no, was any information on breast-feeding given to mother? yes ☐ no ☐	___
If YES, what did it concern?	___
.....	___
7. 7.1 Is she breast-feeding her youngest child? yes ☐ no ☐	___
If YES, on demand ☐	___
on schedule ☐	___
If NOT, did she ever breast-feed? yes ☐ no ☐	___
7.2 For how long did she breast-feed before stopping? ___ ___ months	___ ___

QUESTIONNAIRE	Coding Column DO NOT WRITE IN THIS SPACE
7.10 Was it before or following breast-feeds?	
before yes ☐ no ☐	___
following yes ☐ no ☐	___
7.11 Why did she give these foods or liquids?	
She was advised to by health worker ☐	___
Her mother or other family member advised her to ☐	___
She thought the baby was not receiving adequate nutrition from the breast ☐	___
She believed babies this age need additional food and/or liquid ☐	___
Other foods are more convenient ☐	___
Other ..... specify ☐	___
8. 8.1 Is she doing anything to prevent a new pregnancy? yes ☐ no ☐	___
If YES, which method: Abstinence ☐	___
Withdrawal ☐	___
Condom ☐	___
Pill ☐	___
IUD ☐	___
Injection ☐	___
Vaginal methods ☐	___
Other ..... specify	___
8.2 How many weeks or months after birth of youngest child did she start using this method? ___ ___ weeks ___ ___ months	___ ___

QUESTIONNAIRE	Coding Column DO NOT WRITE IN THIS SPACE
7.3 Did she breast-feed her most youngest child? yes ☐ no ☐	___
If YES, for how many months ___ ___ months	___ ___
7.4 If currently breast-feeding is she giving only breast milk? yes ☐ no ☐	___
If NO, what other food does she give? ..... specify	___
7.5 If breast-feeding, how many times during: waking hours ___ ___	___ ___
sleeping hours ___ ___	___ ___
7.6 If given other foods, how many times during: waking hours ___ ___	___ ___
sleeping hours ___ ___	___ ___
7.7 Has child given any of the following during previous days:	
liquid yes ☐ no ☐	___
animal milk yes ☐ no ☐	___
powdered milk yes ☐ no ☐	___
mashed food yes ☐ no ☐	___
solid foods yes ☐ no ☐	___
other ..... specify	___
7.8 If so how often: liquids ___ ___	___ ___
solids ___ ___	___ ___
others ___ ___	___ ___
7.9 Has any food given by:	
feeding bottle yes ☐ no ☐	___
other ..... specify	___

QUESTIONNAIRE	Coding Column DO NOT WRITE IN THIS SPACE
8.3 Since last pregnancy has she used any other method? yes ☐ no ☐	___
If YES, which method? ..... specify	___
8.4 Does she know that some people say breast-feeding helps prevent a new pregnancy? yes ☐ no ☐	___
8.5 Does she believe this? yes ☐ no ☐	___
If NOT, why? ..... specify	___

Appendix B

WHO REFERENCE BANK DATA ON BREASTFEEDING

Region, Country or Area	Year	Sample: Type	Sample: Size	Percentage breast-feeding: Ever	At 3 months: Fully	At 3 months: Partially	At 3 months: Both	At 6 months: Fully	At 6 months: Partially	At 6 months: Both	At 12 months: Fully	At 12 months: Partially	At 12 months: Both	Median duration of breast-feeding in months	Ref. Text no.
MOROCCO															
National surveys WFS	1980		224	92			63			73			42	15	
National surveys WFS	1980		851	94			87			85			24	17	
OMAN															
	1972-73												90		
PAKISTAN															
1 Urban, 2 Rural areas	1976 E		1,098	86									95	17 E	
East Pakistan	1962-64		52							59			25		
Rawalpindi, Lahore	1977 E		210				41 (17)							17 E	
Karachi	1986 E												6 (23)		
Karachi (II)	1977-79		511	95			43 (28)						40		
Bahawalpur, Karachi	1976-77		2,176							99				15 E	
NWFP	1979-80		454	94										12 E	
National	1979-80		1,156	92										16 E	
National	1979-80		3,297	93										15 E	
National sample	1979-80		6,465	94									21 E		
National sample	1980-81		1,250	97						91 E			43	20	
National sample: WFS	1975		201	96			72			69			28	19	
National sample: WFS	1975		223	95			90			86				15 E	
Punjab	1977-80		2,607	94									12 (23)		
Rawalpindi (II)	1977-79		365	89			80 (28)							12 E	
Sind	1979-80		997	93										17 E	
Sofwat & Lalli	1986 E														
PALESTINIAN AUT. Gaza	1978		769	95	2	79	51	0	72	72	0	62	49	13	
SAUDI ARABIA															
	1952		559	78	55			58			22		70		
	1966 E		767	90 E											

| Source | Region, country, area
Région, pays, zone | Year
Année | Sample Echantillon
Type | Sample Echantillon
Size
Effectif | Percentage breast-feeding
Allaitement maternel (en pourcentage)
Ever Ever Ever

Appendix B

WHO STATISTICS QUARTERLY

Source	Region, country, area Région, pays, zone	Year Année	Sample Echantillon: Type	Sample Echantillon: Size Effectif	Percentage breast-feeding Allaitement maternel (en pourcentage): Ever Ont	at 3 months à 3 mois: Fully Complete	at 3 months à 3 mois: Partially Partial	at 3 months à 3 mois: Both Complete or partial	at 6 months à 6 mois: Fully Complete	at 6 months à 6 mois: Partially Partial	at 6 months à 6 mois: Both Complete or partial	at 12 months à 12 mois: Fully Complete	at 12 months à 12 mois: Partially Partial	at 12 months à 12 mois: Both Complete or partial	Median duration of breast-feeding in months (* = ever) / Durée médiane de l'allaitement en mois (* = depuis)
	Bangladesh														
89	Matlab Thana	1974	R	1 419	100						99			98	30
155	National sample — Echantillon national	1975		2 219	98			95			84			88	17*
84	Dacca	(1980)	U, SE1	95	78			65			52			25	6
84	Dacca	(1980)	U, SE3	98	98			94			91			90	27
84	Maharan	(1980)	R	401	100			99			99			98	32
	Burma — Birmanie														
28	Rangoon	1970-1	U	1 223	94			85						58	12*
	India — Inde														
39	Delhi	1962-3	U	2 000	100	75	25	100	65	34	99	42	44	87	26
14	Simla	1971-2	R	600	100						92			49	12
39	Delhi	(1976)	U	1 240	100	45	55	100	23	70	93	6	69	75	
157	Hyderabad	1975-6	U, SE1	863	96	43	41	84	10	39	49	2	31	33	
157	Hyderabad	1975-6	U, SE2	994	96	60	18	78	24	43	72	6	52	58	15
157	Hyderabad	1975-6	U, SE3	980	99	90	5	95	71	17	88	42	51	93	
157	Nalgonda	1975-6	R	1 185	100	98	2	100	88	12	100	38	61	99	
53	Delhi	(1976)	U	802							73			47	
21	Madhya Pradesh	(1977)	U	136	99[1]						92			76	(16)
21	Madhya Pradesh	(1977)	R	255	99[1]						98			82	(16)
126	Jammu, Kashmir Jammu, Cachemire	(1977)	U	1 200		38	56	92	29	57	66				
126	Jammu, Kashmir Jammu, Cachemire	(1977)	R	1 000		66	33	99	49	50	99				
139	Hyderabad	(1979)	U, SE1	410	68[1]			66			27			8	4
108	New Delhi	(1980)	U, SE1	360	96	20	46	64			36			8	
108	New Delhi	(1980)	U, SE3	380	95	26	56	82			73			40	
	Indonesia — Indonésie														
75c)	Jakarta	(1973)	U	444				75			64			29	
75c)		(1973)	R	2 000				99						83	
155	National sample — Echantillon national	1975		3 630	90			97			96			90	21
80	East Java — Est de Java	1975-6	R	1 987				98[13]			(96)			(85)	
17	Jakarta	1978-9	U					69			77			68	
	Nepal — Népal														
155	National sample — Echantillon national	1976		1 883	100			99			99			97	19*
	Pakistan														
155	National sample — Echantillon national	1974-6		2 138	99			98			96			90	22
	Philippines														
60	Laguna Province — Province de Laguna	1969-70	R	134				92			88			55	
110	Pasig	1975	U, SE3	77	73	(45)	6	(51)	(42)	6	(48)	35	3	38	
157	Metro Manila — Agglomération de Manille	1975-6	U, SE1	495	68	15	12	27			19				
157	Metro Manila — Agglomération de Manille	1975-6	U, SE3	793	65	47	14	61	10	43	53	0	52	52	
157	Luzon	1975-6	R	800	94	50	24	63	17	56	73	8	55	63	
161	Metro Manila — Agglomération de Manille	(1978)	U, SE3	513	84			77			71			36	
155	National sample — Echantillon national	1978		6 914	83			68			58			28	
59	Cebu City — Ville de Cebu	(1980)	U, SE3	420	95			(87)			(81)			43	

SOURCE: WHO THE PREVELANCE AND DURATION OF BREASTFEEDING, A CRITICAL REVIEW OF AVAILABLE INFORMATION. WHO STATISTICS QUARTERLY 35, 1098, 1982.

A.I.D. BILATERAL EXPENDITURES AND OBLIGATIONS IN NATIONAL FAMILY PLANNING (NFP) AND BREASTFEEDING (BF)

Appendix C

DRAFT #1
8/3/87

BILATERAL EXPENDITURES AND OBLIGATIONS IN NATURAL FAMILY PLANNING (NFP) AND BREASTFEEDING (BF) FY'86, FY'87, FY'88

COUNTRY	FY'86					FY'87					FY'88				
	NFP/O	BF/O	NFP/C	BF/C	NFP/BF/C	NFP/O	BF/O	NFP/C	BF/C	NFP/BF/C	NFP/O	BF/O	NFP/C	BF/C	NFP/BF/C
Ecuador						109,000									
Honduras		437,500					354,500					332,000			
Kenya	200,000						200,000				200,000				
Malawi					88,000					150,000					
Morocco				100,000				50,000	100,000						100,000
Peru						39,500			25,000						
Philippines	156,700	80,000	78,457												
Sub Total	356,700	517,500	78,457	100,000	88,000	383,500	354,500	50,000	125,000	150,000	200,000	332,000			100,000

TOTALS..... FY'86 $1,140,657 FY'87 $1,068,000 FY'88 $[illegible]87,000

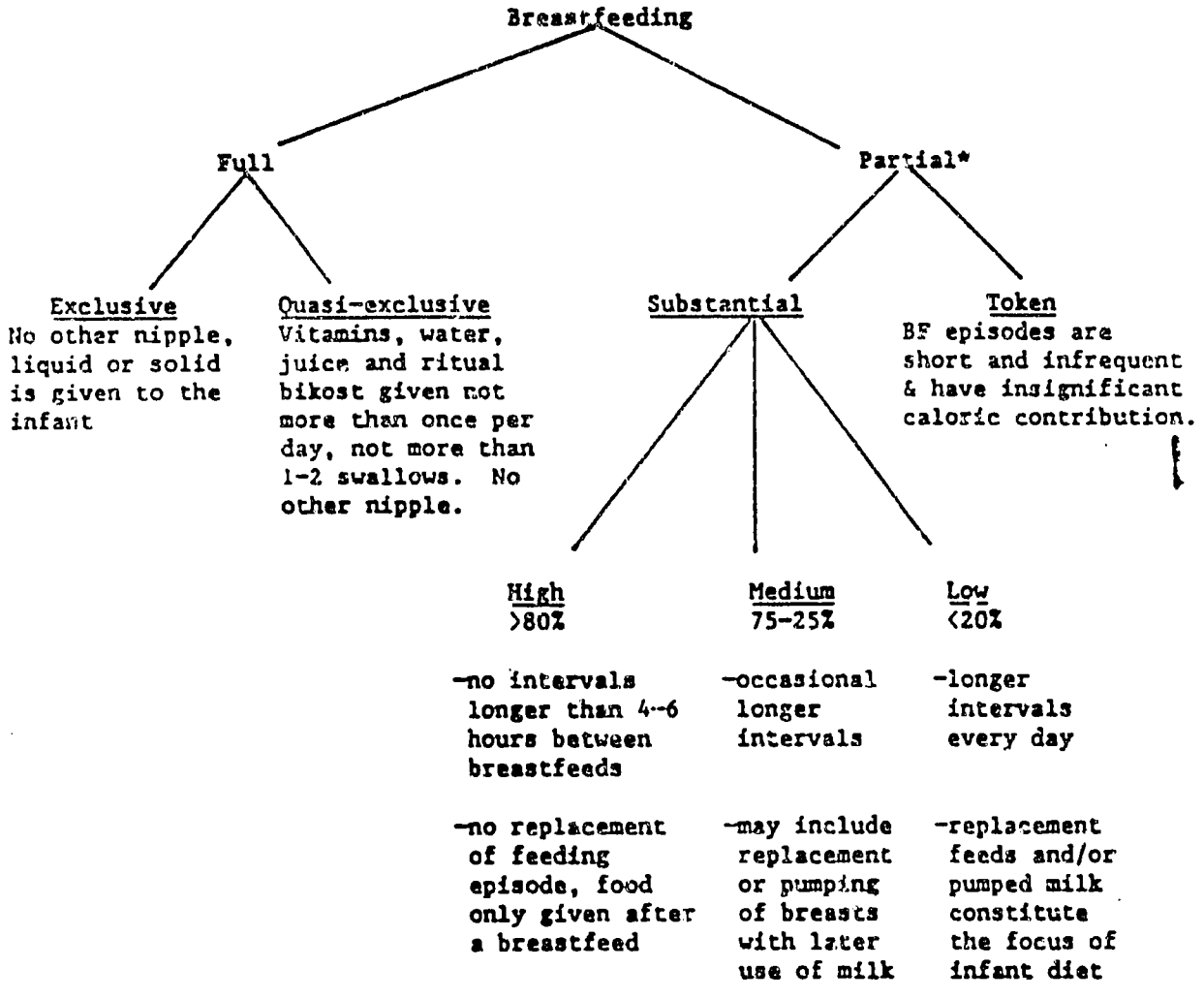
NFP/O: NFP only
BF/O: Breastfeeding only
NFP/C: NFP combined with other activities
BF/C: Breastfeeding combined with other activities
NFP/BF/C: NFP and breastfeeding combined with other activities

A.I.D. HEALTH INFORMATION SYSTEM 1987 QUESTIONNAIRE DATA ISTI

NUMBER AND PERCENT REPORTING VARIOUS SUBCOMPONENT ACTIVITIES

PROGRAM SUBCOMPONENT	INTERVENTION: ORAL REHYDRATION THERAPY		IMMUNIZATION		NUTRITION				HIGH RISK DEPTHS		OTHER CHILD SURVIVAL	
	#	%	#	%	#	%	#	%	#	%	#	%
NUMBER OF LONG TERM PROJECT ACTIVITIES *	44	--	41	--	34	--	--	--	26	--	33	--
B. OTHER PROMOTION ACTIVITIES (continued)			Fixed Immunization Centers		Breastfeeding							
Number Reporting Subcomponent Activity	--	--	17	41.5	26	76.5	--	--	--	--	--	--
Substantial Activity	--	--	12	70.6	9	34.6	--	--	--	--	--	--
Minor Activity	--	--	5	29.4	17	65.4	--	--	--	--	--	--
			Mobile Vaccination Teams		Promoted Nutritional Interventions							
Number Reporting Subcomponent Activity	--	--	12	29.3	11	32.4	--	--	--	--	--	--
Substantial Activity	--	--	6	50.0	7	63.6	--	--	--	--	--	--
Minor Activity	--	--	6	50.0	4	36.4	--	--	--	--	--	--

INTERAGENCY DEFINITIONS OF BREASTFEEDING (WASHINGTON DC 1988)



* Use of an alternative nipple must be separately indicated.

Appendix E

RESOLUTION OF THE WORLD HEALTH ASSEMBLY

THIRTY-NINTH WORLD HEALTH ASSEMBLY
Agenda item 21

WHA39.28
16 May 1986

INFANT AND YOUNG CHILD FEEDING

The Thirty-ninth World Health Assembly,

Recalling resolutions WHA27.43, WHA31.47, WHA33.32, WHA34.22, WHA35.26 and WHA37.30 which dealt with infant and young child feeding;

Having considered the Progress and Evaluation Report on Infant and Young Child Nutrition (footnote 1)

Recognizing that the implementation of the International Code of Marketing of Breast-milk Substitutes is an important contribution to healthy infant and young child feeding in all countries;

Aware that today, five years after the adoption of the International Code, many Member States have made substantial efforts to implement it, but that many products unsuitable for infant feeding are nonetheless being promoted and used for this purpose; and that sustained and concerted efforts will therefore continue to be necessary to achieve full implementation of and compliance with the International Code as well as the cessation of the marketing of unsuitable products and the improper promotion of breast-milk substitutes;

Noting with great satisfaction the Guidelines concerning the main health and socioeconomic circumstances in which infants have to be fed on breast-milk substitutes (footnote 2), in the context of Article 6, paragraph 6, of the International Code;

Noting further the statement in the Guidelines, paragraph 47: "Since the large majority of infants born in maternity wards and hospitals are full term, they require no nourishment other than colostrum during their first 24-48 hours of life - the amount of time often spent by a mother and her infant in such an institutional setting. Only small quantities of breast-milk substitutes are ordinarily required to meet the needs of a minority of infants in these facilities, and they should only be available in ways that do not interfere with the protection and promotion of breast-feeding for the majority.";

1. ENDORSES the report of the Director-General; (footnote 1)

2. URGES Member States:
   (1) to implement the Code if they have not yet done so;
   (2) to ensure that the practices and procedures of their health care systems are consistent with the principles and aim of the International Code;
   (3) to make the fullest use of all concerned parties - health professional bodies, nongovernmental organizations, consumer organizations, manufacturers and distributors - generally, in protecting and promoting breast-feeding and, specifically, in implementing the Code and monitoring its implementation and compliance with its provisions;
   (4) to seek the cooperation of manufacturers and distributors of products within the scope of Article 2 of the Code, in providing all information considered necessary for monitoring the implementation of the Code;
   (5) to provide the Director-General with complete and detailed information on the implementation of the Code;
   (6) to ensure that the small amounts of breast-milk substitutes needed for the minority of infants who require them in maternity wards and hospitals are made available through the normal procurement channels and not through free or subsidized supplies;

3. REQUESTS the Director-General
   (1) to propose a simplified and standardized form for use by Member States to facilitate the monitoring and evaluation by them of their implementation of the code and reporting thereon to WHO, as well as the preparation by WHO of a consolidated report by each of the articles of the Code;
   (2) to specifically direct the attention of Member States and other interested parties to the facts that:
   (a) any food or drink given before complementary feeding is nutritionally required may interfere with the initiation or maintenance of breast-feeding and therefore should neither be promoted nor encouraged for use by infants during this period;
   (b) the practice being introduced in some countries of providing infants with specially formulated milks (so-called "follow-up" milks) is not necessary.

Footnote 1: Document A39/8
Footnote 2: Document A39/8 Add.1.

(Emphasis added)
Printed by IBFAN, 1986

BREASTFEEDING PROMOTION PROGRAMS - NATIONAL or LARGE

COUNTRY	FUNDED BY	POPULATION	STAFF	ACTIVITIES	RESULTS	EVALUATION
HONDURAS	U.S. AID 1982	Urban 3 hospitals expanding community outreach to rural areas	Medical Nurse Coordinator Involves MOH Hospital Administration	•Milk Banks •Teaching Health Staff •Education Materials •Changing Hospital Practices •Develop BF materials for mothers (calendars, posters) •BF program for working mothers	•KAP ++ 40-70% nurses & doctors •Breastfeeding rate increased from 5 months (1982) to 1 year (1985) •Premature infants on breast milk •Rooming in •No free samples •Oxytocin use dropped •No glucose water •Diarrhoeal incidence down Savings for Hospital	Effective Costly
PANAMA	U.S. AID	MOH through MCH regional clinics	MOH INCAP Presentation Consultants	•Training •Changing Hospital Practices •Educate public through mass media (posters, TV, radio) •Pamphlets for mothers •Research on breastfeeding factors •Milk banks •Development of programs for working mothers	•Trained 5,000 persons •Rooming in •Hospital practices changed (e.g. 60-70% decrease in bottles prepared) •Milk banks in 5 out of 11 maternity hospitals •Problem in working women component: Little management experience and facilities workplace limited enforcing of lactation breaks	Political problems hinder follow-up
BRAZIL	UNICEF	National multi-faceted program	MOH / La Leche League	•Education Public Mothers Policy makers Industrialists Health Workers Administrators •Through mass media: changed hospital practices, educated mothers & community leaders •Milk banks •Legislation •Support groups	•++ Knowledge of health professionals •Decreased hospital diarrhoea •Decrease in child abandonment •Milk banks in 50 hospitals •La Leche League support groups (19,000) •Manual for BF mothers •Medical school curriculum included BF (also in primary schools) •Developed BF growth chart •MOH breastfeeding manual & training	Information not in yet

BREASTFEEDING PROMOTION PROGRAMS - NATIONAL or LARGE

COUNTRY	FUNDED BY	POPULATION	STAFF	ACTIVITIES	RESULTS	EVALUATION
INDONESIA	US Aid (1977 UNICEF/ US Aid)	Commission	National working group for breast feeding promotion BK-PP-ASI "Well-Start" San Diego Training Program	• Public education - Mothers targeted - TV advertisements of BMS banned - Required labelling on formula advising against use for infants • Education 2 month "Travelling Seminar" Medan, Denpasar and Bandung to strengthen health workers' knowledge • Areas of Focus Government, industrial, environment, health, mother's behavior • Sent teams to San Diego International Lactation Program to train specialists to change HP and for education	• Change in hospital practices Decrease in formula use Decrease in diarrhoeal disease • Training of several key persons to expand training throughout the country • Major effect is change in policy of rooming in all government hospitals in Indonesia ↑↑ in breastfeeding rate	
THAILAND	U.S. AID (Result of 3 year population study)	Bangkok Breastfeeding Project (2 hospitals)	"Well Start" San Diego Training Program	• Train health care workers • Change hospital practices • Influence KAP health workers • Rooming in and support for BF • Improve infant feeding behavior among low-income women • Institutionalize public sector support for BF promotion • Develop materials for BF for mothers: Leaflets, posters, comic book for low income mothers and audio cassette with answers to frequent questions • Lactation classes in hospital	• Premature infants get breastmilk • Increase in % of breastfeeding mothers • Early contact increased • KAP increased	

BREASTFEEDING SUPPORT GROUPS

(TO INCREASE INCIDENCE AND DURATION OF BREASTFEEDING)

COUNTRY	FUNDED BY	ACTIONS	RESULTS
EL SALVADOR CALMA Center for Support of Breast Feeding	LA LECHE LEAGUE In all MOH Facilities and Clinics	• Develop La Leche League culturally adapted support groups • Train Health professionals Policy makers General Public	• Trained 1,200 breastfeeding promoters • More rooming-in policies instituted • Distribution of powdered milk no longer routine • Nurses give breastfeeding information • Pre-natal breastfeeding clinical instruction
BELIZE	U.S. A.I.D.	• Train health professionals • Mass media promotion • Support telephone hotline • Drop-in centre for mothers with breastfeeding problems	• Trained 120 counselors • 3000 consultations • Breastfeeding rate increased to 42% at 4 months
EGYPT Egyptian Society of Breast Milk Friends	NATIONAL DIARRHOEAL PROGRAM	• Management of breastfeeding problems • Train Health professionals Mothers • Mass media focus • Increased research	• Established lactation management centre at Al Hussein University Hospital (now in 2 other hospitals) • Workshop to re-evaluate medical school curriculum to introduce breastfeeding

Appendix F (c)

BREASTFEEDING FACTS FOR HEALTH WORKERS AND HEALTH WORKERS WEANING CHECKLIST

BREASTFEEDING FACTS FOR HEALTH WORKERS

- Breastfeeding is unequalled for providing ideal food for the healthy growth and development of all normal infants in any environment.
- Virtually all women can breastfeed.
- Frequent sucking on demand leads to breastfeeding success (including nights).
- Confidence leads to lactation success.
- Fatigue, drugs, oral contraceptives, surgical interventions impede initiation of lactation.
- Mothers need support and mothering.
- Early Initiation (start breastfeeding early)
- No prelacteal feeds or bottles.
- Give breast milk only for 4-6 months to avoid contamination and infection and maximum suckling.
- Breastfed infants have 25X less diarrhea than bottlefeeding.

HEALTH WORKERS WEANING CHECKLIST

WHO:	Who feeds the child? (an interested or disinterested party? Mother/grandmother/sibling)
WHAT:	What foods and preparation methods are used(e.g. watered staples, multi-mix, local/purchased, is breast milk supplementary?) What local foods are available to provide needed nutrients? What foods are available during different seasons? What shoratges occur and how are thay handled? What utensils are used? (a bottle/a cup) What are the beliefs and practices?
WHEN:	When is the child fed? (how often?) When is the child sick? When is the child weaned? (when mother is pregnant? When child has teeth?)
WHY:	Why do certain beliefs and practices exist? (reasons for cultural customs, taste preferences, fears, past and present experience.)
WHETHER:	Whether the mother holds her infant in her lap when feeding. Whether the mother's attitude is positive or negligent. Whether the diet is balanced. Whether extra calories are given during illness. Whether the diet and environment are marginal or safe. Whether the food is freshly prepared. Whether the child is getting enough food.

Health workers should ask the 'five Ws' of weaning and develop a checklist suitable for use locally.

BREASTMILK BANKS

Breastmilk bank, anyone?

By CYNTHIA BALANA

BREASTMILK is best for babies, it's a fact. And the good thing about it is it can be stored in freezing temperature. It can also be used by babies of other mothers.

With these qualities of breastmilk, health officials have figured that storage of breastmilk can help reduce the country's malnutrition problem and high rate of infant deaths.

Health officials, thus, proposed yesterday the establishment of breastmilk banks in selected areas in Metro Manila.

Breastmilk may be given to the bank by any nursing mother for minimal compensation.

According to Ma. Marissa Tardaguela, program officer of the health department's National Movement for the Promotion of Breastfeeding, milk banking is not a new idea since this is already being practiced in many Scandinavian countries.

Tardaguela said in a press conference that the proposed milk bank may be funded by the United States Agency For International Dev-

See Breastmilk, P. 7

Breastmilk. . .

(From page 1)

elopment (USAID) and other private firms willing to pour their money on the project.

The DOH and the USAID, for the past three years, have been sending doctors to Wellesley, California for training on breastmilk banking.

Milk banking has some similarities with "wet nursing" — a practice by working mothers who ask other lactating women to breastfeed their babies while they are at work.

Milk can be stored for months in a freezer by placing this in the bank's glasses, plastic bottles, or containers that have been sterilized for at least 20 minutes.

To get the milk, experts may use the so-called manual expression, known as Marmet technique. It was developed by a mother who needed to express her milk over an extended period of time for medical reasons. This method is characterized by massage and stimulation to assist the flow of milk or women's let-down reflexes.

Dr. Marinela Gonzales, medical specialist of the Maternal and Child Health Service, said prospective breastmilk donors need not worry about their body. Breasts may sag only if they are not well supported during pregnancy when they start to enlarge, and during lactation.

Gonzales said breastmilk has been proven to be the best food for infants. The initial flow of breastmilk contains colostrum, a clear substance that improves babies' capacity to fight infection in the first few weeks of their lives.

It also has a laxative effect that helps remove the dark green or blackish matter (meconium) discharged from the newborn's bowels.

Because of the aggressive and expensive promotion of canned milk, the number of women who breastfeed has continually declined for the past 10 years despite the fact that many mothers know that breastfed babies have greater chances of survival than bottlefed babies.

Philippine Daily Inquirer, June 2, 1988

Appendix F (e)

PROTECTING INFANT HEALTH

IOCU INTERNATIONAL ORGANIZATION OF CONSUMERS UNIONS
Regional Office for Asia and the Pacific, Penang, Malaysia.

DECLARATIONS

LACTATIONS CONSULTANTS DECLARATION

LACTATION CONSULTANT'S DECLARATION: A PERSONAL COMMITMENT

WHEREAS breastfeeding's advantages exceedingly its adoption as the global standard for infant feeding; and
WHEREAS breastfeeding has declined in many communities with serious consequences for infant health; and
WHEREAS the promotion and distribution of food or feeding products targeted for children up to two years of age has significantly contributed to this decline and to an increased dependence by families upon commercial products;
THEREFORE, Lactation Consultants, breastfeeding counselors and others who assist the breastfeeding dyad must eliminate the influence of the manufacturers of these foods and feeding products from the ways in which Lactation Consultants work and think;
ACCORDINGLY: THE BOARD OF DIRECTORS OF THE INTERNATIONAL LACTATION CONSULTANT ASSOCIATION (ILCA) INVITES LACTATION CONSULTANTS AND OTHERS WHO WISH TO PROMOTE AND PROTECT BREASTFEEDING TO ENDORSE THE FOLLOWING DECLARATION.

UNDER ALL ORDINARY CIRCUMSTANCES, I shall:

(1) Ensure that mothers are informed, both before and after birth, about the unique qualities of human milk and about the health risks of feeding breastmilk substitutes to their infants.

(2) Encourage and enable mothers to hold and suckle their babies immediately after birth, regardless of birthing method.

(3) Seek to ensure that babies stay with their mothers day and night from time of delivery, regardless of ability to pay for private accommodations.

(4) Encourage and enable mothers to breastfeed their babies in response to both maternal and infant needs, without restrictions on either frequency or length of feeds.

(5) Ensure that all mothers, regardless of marital status, age, income, ethnic background or other socio-economic consideration, receive emotional support and skilled assistance to establish and maintain lactation. Such help should be given within 24 hours of delivery and be available throughout the course of lactation.

(6) Ensure that mothers receive appropriate information about the physiology of lactation, especially that:
- colostrum is beneficial
- only small quantities of breastmilk (colostrum) are produced and needed in the first few days after delivery
- more suckling makes more milk
- early supplements decrease milk production

(7) Seek to eliminate any matters of giving newborn babies prelacteal feeds of formula, animal milks, glucose water, water, honey or any fluid other than human milk.

(8) Encourage breastfeeding among mothers whose employment necessitates separation from their babies and inform these mothers of the advantages of leaving expressed breastmilk to be fed during their absence.

(9) Seek to eliminate the use of any complementary or supplementary foods for infants, until they indicate readiness after four to six months of age.

(10) Seek to eliminate the use of feeding bottles, teats (artificial nipples) and pacifiers (dummies) for breastfeeding infants and children in the hospital setting. Ensure that all staff and parents are informed of the possibility of cup, spoon or finger feeding of babies who can suck and swallow.

(11) Seek to ensure that low birth weight infants are nourished by their mothers' own breastmilk, that the mothers have unrestricted access to their babies, and that mothers are instructed in patterns of hand/breast expression to establish full lactation when separated from their babies.

(12) Discourage the unnecessary use of equipment related to breastfeeding and teach the advantages and methods of hand expression of breastmilk.

(13) Seek to ensure the continuation or re-establishment of lactation during or after illness or injury in either the mother or the baby. Further, encourage and enable mothers to stay in the hospital with their ill or injured babies, and babies to stay with their ill or injured mothers.

(14) Inform mothers of the advantages of exclusive breastfeeding beyond six months of age and throughout the second year, and continue to offer all needed assistance and support for lactation during this extended time.

UNDER ALL ORDINARY CIRCUMSTANCES, I shall NOT:

(15) Accept free samples of supplies of formula, other baby foods, feeding bottles, teats (artificial nipples) and special covered cups.

(16) Give free samples or supplies of formula, other baby foods, feeding bottles, teats (artificial nipples) and special covered cups.

(17) Prescribe or recommend any brand of infant formula or other baby food.

(18) Instruct mothers in the methods of artificial feeding, except in the use of a non-toxic nursing supplementer or other temporary method intended to lead to the establishment or re-establishment of breastfeeding.

(19) Accept, display or distribute any promotional or educational material or free gifts from any company which manufactures or distributes any foods targeted for children up to two years of age.

(20) Accept any salary, commission or personal funding from any company manufacturing food for children up to two years of age, including funding for purposes such as travel, research or equipment.

(21) Assist with the production or display of promotional or educational materials for any company manufacturing food for children up to two years of age.

I do so declare and affirm.

date _____ signature _____

print name _____

address _____

country _____

ILCA Member # _____

Please send a signed photocopy to ILCA - LACTATION CONSULTANT'S DECLARATION, c/o Debora Hill, RN, CLE, PNP, 1800 Pass-A-Grille Way, Apt. #3, St. Petersburg Beach, FL, 33706. Thank you.

Appendix G (b)

DOCTOR'S DECLARATION FOR BREASTFEEDING

DOCTORS' DECLARATION FOR BREASTFEEDING

Despite the advantages of breast feeding, the practice has declined with serious consequences for infant health.

Doctors have allowed the manfacturers of infant foods to influence the way in which they work and think; thus doctors have themselves unintentionally contributed to the decline of breast feeding.

A group of concerned paediatricians and physicians meeting at a conference in Thailand in October 1986 have drawn up a 20 point declaration to guide the conduct and practice of any medical practitioner who wishes to promote and protect breast feeding.

We invite paediatricians and other concerned doctors to endorse this declaration. Under all ordinary circumstances, a medical practitioner who endorses the declaration shall:

(1) Ensure that mothers in their care are informed about the unique qualities of human milk; and about the risks to their infant's health of using any substitute. This information should be provided both before and after a baby is born.

(2) Encourage and enable mothers to hold and suckle their babies immediately after birth, within at most two hours of delivery.

(3) Ensure that babies stay with their mothers in the postpartum ward day and night from the time of delivery.

(4) Encourage and enable mothers to feed their babies on demand with no restriction on either frequency or duration of feeds.

(5) Ensure that mothers receive emotional support and skilled assistance to establish lactation; especially help getting the baby to take enough of the breast into his or her mouth. This support and assistance should be given within 24 hours of delivery. Mothers should have access to further assistance to maintain lactation whenever they request it.

(6) Ensure that mothers receive appropriate information about the physiology of lactation, especially:
- —that colostrum is beneficial;
- —that only small quantities of milk are produced and needed for the first few days after delivery;
- —that more sucking makes more milk;
- —that early supplements depress milk production.

(7) Not allow newborn babies to receive any prelacteal feeds of formula, animal milk, glucose water, water, honey or of any food substance other than human milk.

(8) Discourage the use of any complementary or supplementary feeds for infants under the age of four months and, when possible, discourage them for infants under the age of six months.

(9) Not permit the use of feeding bottles or teats in any hospital ward; nor the use of pacifiers.

(10) Ensure that mothers delivered by caesarean section receive the same lactation management and all necessary assistance from the time they regain consciousness from the anaesthetic.

(11) Ensure that mothers learn how to express their breast milk, and when this may be useful.

(12) Ensure that LBW babies are fed exclusively on EBM by means other than bottles, until they are able to suck directly from the breast; and ensure that mothers have unrestricted access to their babies.

(13) Support the continuation or re-establishment of lactation during or after illness in mother or baby; and try to make it possible for mothers to stay in hospital with their sick babies, and babies to stay in hospital with their sick mothers.

(14) Not accept free samples of formula, bottles or teats directly or indirectly from industry.

(15) Not give free samples of formula, bottles or teats to a mother.

(16) Not prescribe or recommend infant formula.

(17) Not instruct mothers in the technicalities of artificial feeding.

(18) Not accept or display any promotional material of free gifts from any infant food company.

(19) Not accept personal funding from an infant food company for purposes such as travel, research or equipment.

(20) Not give assistance to any infant food company with the production of promotional material.

SIGNED:

(1) Dr. PRASONG TUCHINDA Bangkok, Thailand.
(2) Dr. FELICITY SAVAGE KING London, U.K.
(3) Dr. G.P. MATHUR Uttar Pradesh, India.
(4) Dr. JAYAM Tamilnadu, India.
(5) Dr. PAUL FRANS MATULESSY Jakarta, Indonesia.
(6) Dr. CHING—HWA CHIU Taipei, Taiwan.
(7) Dr. JUAN A. PEREZ Queson City, Philippines.
(8) Dr. SYED RIZWANUDDIN AHMAD Karachi, Pakistan.

Ini Indian Medical Association News
February 1987

Many more doctors have signed this Declaration since it was first adopted. Please photocopy and send signed copies to

Dr. G.P. Mathur
Professor of Paediatrics
Department of Paediatrics
B.R.D. Medical College
Gorakpur 273013
India

PESHAWAR DECLARATION

PESHAWAR DECLARATION

PAEDIATRICIANS OF PAKISTAN TO PROTECT BREASTFEEDING

Aware that bottle-feeding in Pakistan is increasing rapidly and may soon reach the rural areas;

Conscious that bottle-feeding is a major cause of infant diarrhoea and infant mortality;

Recognizing that any kind of promotion of infant milks and feeding bottles severely undermines support for breastfeeding;

Aware that exclusive breastfeeding for the first six months offers unmatched protective and nutritional advantages to the infant;

Therefore, we the undersigned paediatricians, fully subscribe to the following declaration of ethics and urge obstetricians, gynaecologists and general practitioners of Pakistan to do likewise;

As concerned doctors, under all normal circumstances, we undertake to:

(1) Ensure that mothers in their care are informed about the unique qualities of human milk; and about the risks to their infants' health of using any substitute. This information should be provided both before and after a baby is born.

(2) Encourage and enable mothers to hold and suckle their babies immediately after birth, within at most two hours of delivery.

(3) Ensure that babies stay with their mothers in the postpartum ward day and night from the time of delivery.

(4) Encourage and enable mothers to feed their babies on demand with no restriction on either frequency or duration of feeds.

(5) Ensure that mothers receive emotional support and skilled assistance to establish lactation; especially help getting the baby to take enough of the breast into his or her mouth. This support and assistance should be given within 24 hours of delivery. Mothers should have access to further assistance to maintain lactation whenever they request it.

(6) Ensure that mothers receive appropriate information about the physiology of lactation, especially:

- that colostrum is beneficial;
- that only small quantities of milk are produced and needed for the first few days after delivery;
- that more sucking makes more milk;
- that early supplements depress milk production.

(7) Not allow newborn babies to receive any prelacteal foods of formula, animal milk, glucose water, water, honey or of any food substance other than human milk.

(8) Discourage the use of any complementary or supplementary feeds for infants under the age of four months and, when possible, discourage them for infants under the age of six months.

(9) Not permit the use of feeding bottles or teats in any hospital ward; nor the use of pacifiers.

(10) Ensure that mothers who deliver by caesarean section receive the same lactation management and all necessary assistance from the time they regain consciousness from the anesthetic.

(11) Ensure that mothers learn how to express their breast milk, and when this may be useful.

(12) Ensure that low-birth-weight babies are fed exclusively on expressed breastmilk (EBM) by means other than bottles, until they are able to suck directly from the breast; and ensure that mothers have unrestricted access to their babies.

(13) Support the continuation or re-establishment of lactation during or after illness in mother or baby; and try to make it possible for mothers to stay in hospital with their sick babies, and babies to stay in hospital with their sick mothers.

(14) Not accept free samples of formula, bottles or teats directly or indirectly from industry.

(15) Not give free samples of formula, bottles or teats to a mother.

(16) Not prescribe or recommend infant formula.

(17) Not instruct mothers in the technicalities of artificial feeding, except under compelling circumstances.

(18) Not accept or display any promotional material of free gifts from any infant food company.

(19) Not accept personal funding, from an infant food company for purposes such as travel, research or equipment.

(20) Not give assistance to any infant food company with the production of promotional material.

The Peshawar Declaration is a recommendation adopted by the 9th Biennial International Paediatric Conference on March 23, 1988.