

**Infant Health and Feeding Practices
in El Progreso and Puerto Cortés, Honduras:
*Baseline Survey 1995 to Evaluate Community-Based
Breastfeeding Promotion Activities***

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ACRONYMS

ARI	Acute respiratory infection
CESAMO	<i>Centro de Salud Con Medico</i> - health center with physician
CESAR	<i>Centro de Salud Rural</i> - rural health clinic
LAM	Lactational Amenorrhea Method
LLL/H	<i>La Liga de la Lactancia Materna de Honduras</i>
MCH	Maternal and Child Health
MOH	Ministry of Health in Honduras
PROALMA	<i>Proyecto de Apoyo de la Lactancia Materna</i>
UPS	<i>Unidad productora de servicio</i> - service producing unit
WHO	World Health Organization



EXECUTIVE SUMMARY

The Ministry of Health (MOH) and La Liga de la Lactancia Materna of Honduras (LLL/H) have initiated the integration of breastfeeding promotion and support into maternal and child health services. This combined strategy includes training of health institution staff (from hospitals and health centers) with linkages to a network of volunteer community-based breastfeeding counselors. An evaluation to assess the impact of this combined strategy was designed to compare breastfeeding practices in two areas in Health Region 3: one with the activities (El Progreso) and a control area (Puerto Cortés). These areas were chosen because of similarities in socio-demographic characteristics and health system infrastructure. This report discusses the baseline survey of infant feeding practices in both sites.

Interviews for the baseline survey were conducted in the spring of 1995 among 1523 mothers of infants aged 0 to 5.9 months. The random sample of mothers was selected from within the cities of El Progreso and Puerto Cortés and their surrounding areas.

Comparison of El Progreso and Puerto Cortés

Characteristics of the two areas were, in general, quite similar, except that El Progreso is slightly more urbanized than Puerto Cortés (58% compared to 44%). Households in Puerto Cortés were somewhat better off, with a higher percentage having indoor toilets, indoor faucets, and higher wealth based on a measure of ownership of material goods. Breastfeeding practices were similar in the two areas.

Socio-demographic Characteristics of the Sample

Twenty-three percent (23%) of mothers were aged nineteen or younger and only 7% were 36 years old or older. Seven percent reported never attending school and 75% had six or fewer years of education. On average there were three children under twelve years of age and four adults or children over twelve per household. Only 7% of the mothers were currently working outside the home.

Households in urban areas were more likely than those living in rural areas to have electricity, better water and sanitation, and more modern conveniences.

Breastfeeding Practices

Breastfeeding was the norm and only 4% of survey infants were never breastfed. The proportion of infants not currently breastfed increased from 3% at less than one month of age to 22% at 5-5.9 months. In the first month of life, only 32% of infants were exclusively breastfed and 34% were predominantly breastfed.¹ By the second month of life (30-59 days), only 21% of infants were exclusively breastfed and 22% were predominantly breastfed.

Water use is high, with about half of all breastfed infants receiving water in the first two months of life, increasing to over three-fourths by the fourth month of life.

The use of other liquids such as sugar water or herbal teas in addition to breastmilk is highest during the first three months of life and then juices are commonly given. During this time about one-third of breastfed infants receive these other liquids.

¹ An infant is exclusively breastfed if he/she receives only breastmilk. Predominant breastfeeding is defined as the consumption of breastmilk and non-milk liquids. Predominantly breastfed infants obtain nearly all of their nutrients from breastmilk but are at increased risk of illnesses over exclusively breastfed infants due to the contamination of non-breastmilk liquids that they are fed.



The use of cow's milk² increases rapidly in the first two months of life. In the first month, at least 29% of infants were fed milk but this rate nearly doubles to 46% in the second month. By the third month of life, two-thirds of infants receive cow's milk. Except during the first month of life, most infants who receive cow's milk also receive other liquids.

Fewer than 5% of infants less than two months of age and fewer than 15% of those 2 -2.9 months of age received solids. But by the age of 3-3.9 months, one-third of infants were fed solids, and by four months of age, half were fed solids.

Factors Associated With Breastfeeding

Socio-economic Status

In urban areas, breastfeeding practices did not differ significantly by mother's education level or the indicator of wealth. However, in rural areas, more highly educated women and those with more wealth had poorer breastfeeding practices. The proportion of exclusively breastfed infants was lower in urban areas (10%) than in rural areas (15%).

Health Care Services

Seventy-four percent (74%) of mothers received prenatal checkups and one-third of these mothers were advised to breastfeed during these checkups.

Rural infants were more likely to be born at home (56%) and to be delivered by a midwife (53%) than urban infants who were more likely to be born in a hospital (51%) and be delivered by a physician (61%). More than half of mothers breastfed within the first 30 minutes after delivery, and 80% breastfed in the first seven hours. Nearly all (90%) mothers who delivered in hospitals had rooming-in.

Less than 10% of infants were given water, sugar water, or milk in the first hours after birth, however 17% of infants were given glucose water (*suero*). Twice as many infants born in hospitals (21%) received *suero* as those born at home (12%). Use of *suero* was associated with lower rates of exclusive breastfeeding.

Nearly two-thirds of infants were given *chupon* even if they were born in a hospital. A *chupon* is a cloth dipped in liquid often given to infants to suck on, much like a pacifier. There was no association with wealth or mother's educational level with *chupon* use, however urban women were slightly less likely than rural mothers to give *chupon*. Exclusively breastfed infants were less likely than other infants to have received *chupon*.

Half of the women were advised to breastfeed during postpartum checkups by a doctor or nurse and one-third of mothers who took their infants to child health services were counseled about breastfeeding during any visit.

Reasons for Giving Liquids and Solids

Mothers reported feeding *water* to their infants in the first month of life primarily because infants were thirsty or hot (32%) or had hiccoughs or gas (28%). In the second month, being thirsty or hot (36%) was still important. Other reasons included babies needing it (17%), advice received (17%), or hiccoughs and gas (14%).

Mothers reported feeding *other liquids* such as sweetened water, teas, and juices to their infants in the first month because of insufficient milk (14%) or to keep the baby full (11%), in addition to the baby being thirsty or hot

² Cow's milk is the term used throughout this report to include any non-human milk given to infants, such as infant formula, powdered milk, or whole milk fed to infants..



(10%) and having hiccoughs/gas (9%). At 30-59 days of life, the major reasons to give other liquids were as a medicine (22%), to get the baby used to it (16%), and because the baby was thirsty or hot (13%). Mothers used the term *solo pecho* to describe their breastfeeding practices when they breastfed and gave other liquids but no cow's milk.

The major reasons for giving breastfed infants *cow's milk* was to keep the baby full (29%) or insufficient milk (11%). Mothers reported that they knew their infants received insufficient milk intake primarily because their babies cried after nursing (37%) or because they did not feel the milk release (31%).

Other Factors

Of all infants who had ever received *water*, 41% had received it in a bottle, 22% in a cup, and 18% by spoon. *Liquids* such as sugar water, herbal teas, and juices were also primarily given by bottle. However about 10% of infants were fed water, teas, or juice from a cup or spoon. *Cow's milk* was nearly always fed from a bottle.

Of mothers who had returned to work, about half were not breastfeeding compared to only 10% of those who had not returned to work. Notably only 6% of the sample had returned to work. Ninety (90%) percent of exclusively breastfeeding mothers sleep with their infants compared to 79% of those breastfeeding and giving cow's milk and 47% of non-breastfeeding mothers.

Problems Reported by Mothers

About one-fourth of mothers who were exclusively or predominantly breastfeeding reported that they had ever had insufficient milk, while 44% of those who also gave milks or solids and 62% of those who were not breastfeeding reported this.

Mothers who had stopped breastfeeding were more likely to report having had flat nipples (31% compared to 10-15% for breastfeeding mothers). While cracked nipples (19%) and sore nipples (33%) were reported by a surprisingly high percentage of women, the rates of these problems did not differ by breastfeeding status.

However, mothers who reported ever having a problem with insufficient milk had a lower frequency of feeds on the preceding day (7.8 breastfeeds) compared to those who did not report this problem (8.9 breastfeeds).

Beliefs About Breastfeeding

Less than 1% of mothers reported that increasing the frequency of breastfeeding is a means to increase breastmilk output. Of exclusively breastfeeding mothers, 67% reported that infants needed water, compared to 89% of other breastfeeding mothers. About half of breastfeeding mothers (48%) thought it acceptable to introduce other milks in addition to breastmilk (42% of those exclusively breastfeeding compared to 52% of other breastfeeding women).

Nearly all (99%) mothers agreed that it is important to give infants solids to get them accustomed to other tastes. Sixty-two percent (62%) of breastfeeding mothers reported that giving solids can increase the risk of diarrhea.

Information on Breastfeeding

When mothers were asked whether there was someone from whom they could seek advice about infant feeding or if they had problems breastfeeding, 37% were unable to mention anyone. Of those who reported knowing someone, the most frequently mentioned person was the respondent's mother (36%), followed by a doctor (16%), mother-in-law (13%), other relative (12%), and friend (10%). Only 2% mentioned a counselor and only 1% mentioned a midwife.



When asked with whom they conversed the most about infant feeding, mothers reported their mothers most frequently (27%). While some reported their friends and neighbors (14%) or their mother-in-law (13%), many (19%) reported that they talked to no one about it.

Three-fourths (75%) of mothers own a functioning radio and 58% own a working television. About one-third of mothers (39%) had heard an ad on radio about breastfeeding and 41% reported hearing one on the television.

Morbidity

The proportion of all infants ill in the last two weeks was 65% for acute respiratory infection (ARI) and 29% for diarrhea. Infants in poorer families were reported to be sick more often than those in richer families. Diarrhea, but not ARI, was higher among rural households than urban households. By the age of three months, nearly all (90%) infants had been taken to health services to be vaccinated, but only one-third had ever had been taken for a well child visit or to have their growth checked and only one-half had ever been taken to health services due to illness.

Breastfeeding and Fertility

One third of the respondents had heard that breastfeeding helps prevent pregnancy, but of these, only 29% believed it. Women who were exclusively breastfeeding were much more likely than predominantly breastfeeding women to be amenorrheic (93% vs. 81%). Women who gave milks or solids in addition to breastmilk were less likely to be amenorrheic (53%). Of amenorrheic women, only 11% used contraception compared to 37% of those whose menses had already resumed.

The relatively low use of contraception in this population is not surprising given that only 10% of women who attended postpartum check-ups were counseled about birth spacing during their check-ups. Only one-third of women had had a postpartum check-up.

Profile of Breastfeeding Mothers

By summarizing the information obtained in this survey, we can describe the characteristics of mothers associated with exclusive breastfeeding, breastfeeding and giving cow's milk, and not breastfeeding.



Profiles of mothers by breastfeeding patterns			
Factor	Type of breastfeeding		
	Exclusively breastfeeding	Breastfeeding and giving cow's milk	Not breastfeeding
Why feeds this way	--	Gives milk to keep baby full Gives water because baby is thirsty/hot or needs it. Give liquids to "get the baby used to it"	Stopped breastfeeding because baby did not want the breast and because of insufficient milk
When changed	--	Added water and other liquids in first month, milk in second month	Stopped breastfeeding in first two months
Intra-partum practices	--	Infant given <i>suero</i>	Infant given <i>suero</i>
Sleeping pattern	Sleeps with infant	Sleeps with infant	Does not sleep with infant
Chupon use	Less <i>chupon</i> use	Used <i>chupon</i>	Used <i>chupon</i>
Problems breastfeeding	Few problems	Insufficient milk	-Insufficient Milk -Flat nipples
Demand/scheduled feeding	Feeds on demand	May feed by schedule	--
Breastfeeds per day (24 hours)	Ten times	Eight times	--
Working patterns (outside the house)	Least likely to usually work (1/3 usually work)	More likely to work (1/2 usually work)	Most likely to usually work (2/3 usually work)
Has returned to work	Least likely to have returned to work	More likely to have returned to work (1/2 of those usually working have returned)	Most likely to have returned to work (3/4 of those usually working have returned to work)
Pregnancy risk (at 4-5 months postpartum)	83% amenorrheic	62% amenorrheic	8% amenorrheic
Proportion of women using contraception	9%	21%	39%



Recommendations for breastfeeding promotion:

- ❶ Emphasize counseling during pregnancy and the first two months postpartum.
- ❷ Address concerns for keeping the baby full and insufficient milk in order to prevent use of cow's milk.
- ❸ Discourage the use of waters, teas, and juice.
- ❹ Include older women in support groups and as counselors.
- ❺ Assess the reasons why some mothers sleep with their infants and others do not.
- ❻ Review the use of the term "*solo pecho*" when referring to exclusive breastfeeding in the communications plan.
- ❼ *Chupon* use should be discouraged.
- ❽ Referrals to health services should be given by counselors for illness and birth spacing.
- ❾ Counseling of mothers on infant feeding and birth spacing should take place during pre-natal, ante-partum, postpartum, and child health services.
- ❿ Use of *suerro* (glucose water) for newborns should be stopped, both by staff of health services and by midwives in the community.
- ⓫ Radio and television could be used to deliver communication messages to the community.



CHAPTER 1. INTRODUCTION

The Ministry of Health in Honduras (MOH) and La Liga de la Lactancia Materna de Honduras (LLL/H) signed a formal agreement in 1992 to jointly carry out a major program to integrate breastfeeding into maternal and child health (MCH) activities. Funding for this program was provided by the U.S. Agency for International Development (USAID), the World Bank, and the United Nation's Children's Fund (UNICEF). Wellstart International's Expanded Promotion of Breastfeeding (EPB) Program provided technical assistance to the effort.

One of the principal components of this program included the expansion of training in breastfeeding to staff working at local health centers (CESAMOS - *Centros de Salud Con Medico*) and rural health posts (CESARS- *Centros de Salud Rurales*) in addition to hospital staff. Another corollary activity was the training and support of volunteer breastfeeding counselors (*consejeras de lactancia materna*) to develop a community-based support network linked with health institutions.³

One of the first sites for this combined effort was in Region 3, (*Region Sanitaria 3*) located in northwest Honduras (see Figure 1). The LLL/H central office and one of the two national breastfeeding training centers (located at the MOH Hospital Catarino Rivas) are both in the city of San Pedro Sula in Region 3.

To evaluate the impact of these activities, several surveys of infant feeding practices were planned. This report discusses the baseline survey, which was also designed to aid the development of communication strategies to support breastfeeding. The baseline survey was conducted in the spring of 1995, prior to the development of the in-service training curriculum and the training of health professionals and volunteers in the selected areas.

There are nine health regions in Honduras. Region 3 contains eight health areas (Table 1). This survey was conducted in a specially selected sample of two health areas in Region 3, the metropolitan and surrounding areas of El Progreso (Health Area 2) and Puerto Cortés (Health Area 3).

These two sites were selected because of presumed similarity in demographic and socioeconomic characteristics, health infrastructure, and penetration and access to communication channels. The intervention was planned to take place in the El Progreso area following the collection of the baseline data.

A follow-on survey in the spring of 1996, one year following the baseline, was to be conducted once health professional training had taken place in El Progreso but not in Puerto Cortés. The differences seen in the two areas would then be able to illustrate the impact of health professional training alone on breastfeeding practices in the community.⁴

³ Additional activities within this agreement included: a) development of policies and practices supportive of breastfeeding; b) integration of breastfeeding into health professional pre-service and in-service training curricula; c) development of a documentation center and the institutionalization of information dissemination on breastfeeding; d) a sustainable monitoring and evaluation system; and, e) a communication strategy to support breastfeeding.

⁴ The 1996 survey has not been planned due to funding limitations.

Figure 1. Map of Honduras





Table 1. UPS and health areas by region in Honduras, 1993*				
Region	Number of areas	Number of UPS		Total
		No. of CESARS	No. of CESAMOS	
Metropolitan	2	15	15	30
1	4	79	24	103
2	5	93	19	112
3	8	86	48	134
4	5	99	21	120
5	4	89	30	119
6	5	67	26	93
7	5	62	16	78
8	2	19	2	21
Total	40	609	201	810

* From Mid-term Evaluation Health Sector II Project (No. 522-0216). Health Technical Services Project. Pragma. 1995 (draft). Reference: Departamento de Estadístico: Boletín de Estadística e Información de Salud. Estadísticas de Atención Ambulatoria, 1993. Tegucigalpa, 1994. Revised May 1996 based on discussions with MOH.

Subsequently (about another year later, in spring of 1997) both health professional training and community peer counselors ("the combined intervention") would have been in place in El Progreso, and only health professional training would have taken place in Puerto Cortés. The comparison of the two surveys would allow an assessment of the combined impact of health professional and peer counselor support for breastfeeding in contrast to health professional training alone.

To ensure that activities had in fact been in place in a sufficient number of sites prior to the conduct of the second follow-up survey, a sentinel site monitoring system was planned to collect information on contact with peer counselors and on infant feeding practices from women in the community. This would enable program managers to learn about the reach of their activities and to determine where more effort was needed. It would also inform the evaluators when sufficient reach had been attained to expect changes in feeding practices. This sentinel monitoring system was designed to ask a few questions of ten women in ten communities every four to six months. However, because of the budget limitations, this sentinel site monitoring system will probably not be conducted. Instead, the information will need to be obtained from the program's ongoing monitoring system. This means that, for evaluation purposes, the monitoring system will need to be working well.



This report presents the results of the baseline survey in these two health areas.⁵ Chapter 2 describes the sampling design and the data collection efforts. Chapter 3 gives the socio-demographic characteristics of the mothers and infants included in the survey and compares the two health areas. Chapter 4 provides results on infant feeding practices on the day preceding the survey and discusses these results in comparison to ever-use of other liquids or foods in the child's diet.

Chapter 5 describes factors associated with varying breastfeeding practices, including problems mothers reported in breastfeeding, health care practices, and advice received. Demographic background, such as the mother's education, wealth, rural/urban residence and work status are also examined in relation to breastfeeding practices.

Chapter 6 addresses contacts with potential information channels, whether they provide information about breastfeeding and the relationship between feeding practice, contacts, and advice. Among the channels discussed are health system personnel, family, friends, and neighbors, and mass media.

Chapter 7 illustrates patterns of morbidity in this population of infants and their relationship with breastfeeding practices. Chapter 8 reports on child spacing in relation to breastfeeding practices.

Chapter 9 discusses implications of the study results for the design of interventions and for future evaluations. Appendix 1 gives additional tables and Appendix 2 includes the questionnaire.

⁵A preliminary "Report on the Honduras Breastfeeding Baseline Survey" was prepared by R. Hornick, S. Sayeed, and Y. Platon, October 1995. The sample size used in that draft report was 1545 compared to 1523 in this paper because of the use of reported ages in the draft and actual ages in this report. The draft report classified only the communities in the UPSs of El Progreso and Puerto Cortés as urban, while in this report, each community was categorized individually as to whether it was urban or rural. In the previous report the number of times that infants were breastfed on the preceding day were coded as 0 when mothers responded that they did not know the frequency of feeding while in this report, they were coded as missing. There were 172 unknown values for daytime feeds and 46 for nighttime feeds.



CHAPTER 2. SAMPLING DESIGN AND DATA COLLECTION

The design and data collection efforts are described in detail to provide the information needed to adequately sample households for comparative purposes in future surveys. Readers interested primarily in the results on infant feeding may wish to skip this chapter.

Comparison groups for sample size determination included infants born in hospitals and infants born at home, with half of the sample estimated to be born in each site.⁶ The sample size was based on detecting a difference of 10% in rates of exclusive breastfeeding between the two areas of El Progreso and Puerto Cortés at the follow-up survey, assuming a baseline prevalence of 40%. A sample size of 280 mothers with infants under six months of age was estimated to be needed for each group: El Progreso mothers with hospital births, El Progreso mothers with home births, Puerto Cortés mothers with hospital births, and Puerto Cortés mothers with home births.

Sample Selection

The sampling procedure was designed to obtain a representative sample of approximately 800 women with infants less than six months of age within each health area of El Progreso and Puerto Cortés. Sampling was based on a three-stage cluster procedure. The MOH provided the population information required to select the sample at each stage. Population sizes were available for public health units (*unidades productora de servicio*-UPS). There are two types of UPSs, either urban health centers (CESAMOs) or rural health posts (CESARs). The CESAMOs are usually staffed by at least one physician, nurses, and auxiliary nurses and the CESARs by an auxiliary nurse.

In the **first stage** of the sampling, a list of the expected number of children under the age of six months was made for the catchment areas surrounding each UPS. In 1995, there were seventeen UPSs in El Progreso and fifteen in Puerto Cortés. UPSs and their catchment areas that did not meet the population criteria of at least 60 children less than six months old were paired to provide sufficient numbers. In El Progreso two UPS were paired as one primary sampling unit, and in Puerto Cortés four UPS were paired into two primary sampling units.

In El Progreso, the UPS of San Isidro was excluded because the majority of its catchment area was inaccessible. As a result, 6% of the population was excluded from the sampling frame. Out of the original seventeen UPSs, fourteen sampling units (either one UPS or two UPSs combined as one unit) were included in the sampling frame and ten were selected.

Two UPSs (La Pita and Jalisco) and some communities of the Puerto Cortés health area were eliminated because they were inaccessible, resulting in an estimated 9% of the population being excluded. An additional UPS (Toyo in the El Progreso health area) was also eliminated from the sampling universe. From the remaining ten UPSs, all were selected as the primary sampling units.

At the **second stage** in the sampling, a list of the communities served by the UPSs was prepared and the estimated numbers of infants less than six months living in each community were recorded. A systematic sample of these communities was then selected. A large community (such as a town or city) would be included in the sample more than once, and thus would contribute several secondary sampling units. Initially, 80 sampling units were systematically sampled from each area. However, communities were excluded from the sample if they were inaccessible by car or further than a 30-minute walk from the nearest accessible road.

At the **third stage**, ten mothers with infants less than age six months were randomly chosen from each secondary sampling unit. A randomly selected starting point was determined from existing housing maps provided by the

⁶ The proportion of births observed in the survey was 55% in health facilities and 45% in the home (38% in the woman's home and 7% in the midwife's home).

MOH and Municipalities, or, where no maps existed, from diagrams of the communities (*croquis*) drawn by supervisors. Interviewers were instructed to census each household in their assigned areas until they found at least ten mothers of infants less than six months old. However, in some areas, more than ten mothers were included because of several teams working in the disperse sections of the area at the same time. In other sites, less than ten mothers were located even when adjacent locations were included, because of overestimates of the proportion of families with infants in these sites.

Table 2 gives the UPSs included in the survey, the number of expected secondary sampling units, and the number of children included within each selected primary sampling unit (UPS). As shown, in most of the UPSs, the number of children included was quite similar to that expected.

In the Puerto Cortés area, insufficient numbers of children were located in some UPSs (Omoa, Cuyamel, and Tegucigalpa), while in others more than ten children were included per UPS (Puente Alto and Baracoa). Since all were rural areas within Puerto Cortés, we believe that this did not affect the validity of the sample. In three communities in El Progreso, substantially more children than expected were included (Nueva Esperanza, Cowlee and Caisano, and Guayamitas), all primarily in rural areas. Few communities had less than expected. Thus El Progreso reached the expected number of children (802), while there were only 721 included from Puerto Cortés. The map in Figure 2 shows many of the communities included in the survey.

Sample Size Calculations

The needed sample size was based on an expected rate of exclusive breastfeeding for infants less than six months of age of about 40%. The 1991 Family Health Survey found the rate of exclusive breastfeeding for infants less than four months of age to be 24% for urban areas other than San Pedro Sula and Tegucigalpa, and 43% for rural areas (Table 3). Separate analyses conducted by EPB⁷ for Region 3 found that the rate was 38%.

The rate of exclusive breastfeeding in the current survey for infants less than four months of age was only 18% (14% in urban areas and 22% in rural areas) rather than the expected rate of 38%. A sample of 292 is needed with an initial rate of 20% to observe an increase to 30% and 248 to observe an increase from 15% to 25% with a 95% confidence interval. As shown in Table 4, even with the lower rate of exclusive breastfeeding found, there were sufficient numbers of infants in each group to observe a difference of at least 10%.

⁷ Hubert Allen, Analyses of the Honduran Family Health Surveys: Comparison of Breastfeeding Rates. Dec. 1993. Wellstart International's Expanded Promotion of Breastfeeding (EPB) Program.



UPS	No. of sub-sampling units initially selected	Expected no. of children	No. of children actually included
El Progreso Total	80	800	802
El Progreso	36	360	335
Urraco	4	40	44
Cowlee & Casiano	4	40	52
Guayamitas	4	40	49
La Mina	4	40	38
Morazan	8	80	83
Nueva Esperanza	4	40	57
El Negrito	4	40	32
Agua Blanca Sur	4	40	35
Santa Rita	8	80	77
Puerto Cortés Total	80	800	721
El Paraiso & Bajamar	4	40	37
Puerto Cortés	36	360	350
Baracoa	4	40	57
Puente Alto	4	40	64
Caoba & Pantano	4	40	47
Kele-Kele	4	40	33
Omoa	8	80	52
Cuyamel	8	80	19
Cuyamelito	4	40	36
Tegucigalpa	4	40	26
Total	160	1600	1523

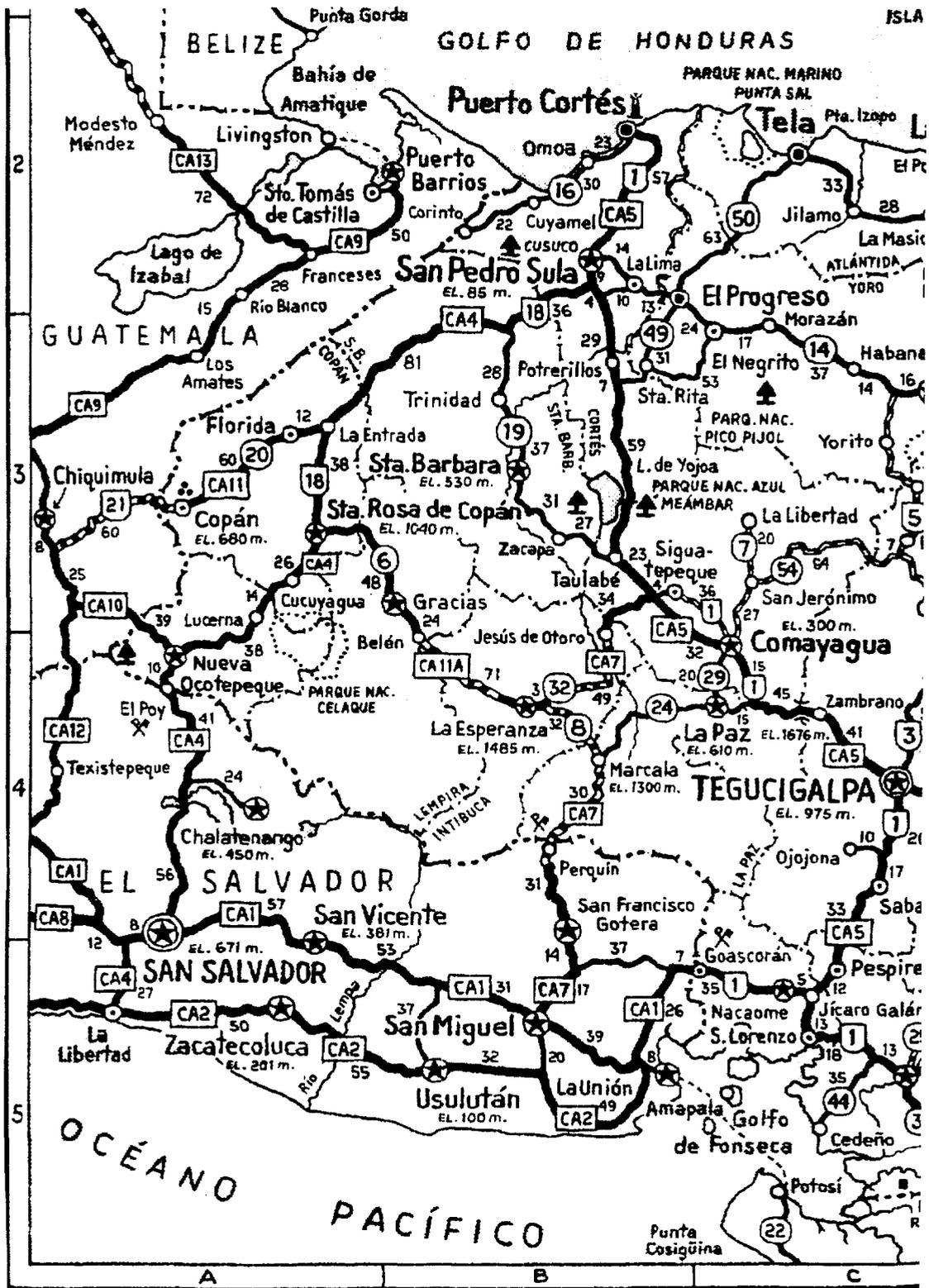


Location	1987 (N)	1991 (N)
Tegucigalpa/San Pedro Sula	14.7% (102)	27.6% (76)
Other urban	16.3% (80)	23.6% (72)
Rural	36.8% (419)	42.9% (282)
Total	30.3% (601)	37.0% (430)

Sample of interest	Expected sample size needed to observe a change in exclusive breastfeeding from 15% to 25%	Final sample size with information on site of birth
El Progreso/hospital births	292	415
El Progreso/home births	292	385
Puerto Cortés/hospital births	292	418
Puerto Cortés/home births	292	302



Figure 2. Map of Region 3





Explanation for Lower than Expected Rate of Exclusive Breastfeeding

There are several reasons why the rates of exclusive breastfeeding in the health areas of El Progreso and Puerto Cortés differed substantially from the rest of Region 3. Region 3 includes San Pedro Sula where there had been numerous breastfeeding promotion interventions by both PROALMA (Proyecto de Apoyo de Lactancia Materna) in the 1980s and LLL/H in the 1990s. The areas closer to San Pedro Sula had been affected by these efforts. However the hospitals in El Progreso and Puerto Cortés had received only a small amount of earlier training by PROALMA and LLL/H had never worked there.

The selection of the two urban areas and their surrounding communities was not random. Since only two of the eight health areas in Region 3 were chosen, and these areas include the second and third largest cities in the region, they are much more urban than Region 3 as a whole. El Progreso is the third largest city in the country. The rates for these two cities are thus likely to be among the lowest for the “other urban areas” group reported in the Family Health Survey. This could help explain why the “other urban” rate for the country as a whole was 24% compared to the rate in this study of 14%.

The lower rate of exclusive breastfeeding in rural areas observed in this survey compared to that observed in the Family Health Survey is probably because the rural areas surrounding these two cities are less isolated than other rural areas in Region 3. The more isolated rural areas tend to have higher rates of exclusive breastfeeding practices than rural areas closer to urban centers. The exclusion of the inaccessible areas (6% of the population in El Progreso and 9% in Puerto Cortés) may also have caused the rural rates to be lower than the Family Health Survey, which did not eliminate distant rural areas from its sample.

Data Collection

During six weeks in January and February 1995, the questionnaire was pretested among 30 women with infants less than six months of age at two CESAMOs, one each in the health areas of El Progreso and Puerto Cortés. Four focus groups were held (two in each area) to define and validate questions. Based on these pre-tests, the questionnaire was revised and a final pre-test was held by interviewing fifteen women recruited from communities in these areas. Approvals from the MOH were obtained for the field work and collection of the data and meetings were held with the health teams in the region and the two health areas to inform them about the survey and coordinate field work.

A local research firm (CIME) was contracted to conduct the field work. Maps were collected from the MOH and the municipalities. Training of eighteen interviewers included three days of theoretical training and three days of field training, and twelve interviewers were subsequently selected. The interviewing process took place from the last week of February through mid-May of 1995 (ten six-day weeks). Two teams, each containing three interviewers and two supervisors (one each per team from CIME and LLL/H), worked together.

According to the 1990 census data for the area, an average of ten houses was estimated to be sufficient to find one infant in the specified age range. In practice, an average of 17 houses were visited in Puerto Cortés and 15.5 in El Progreso to find an infant less than six months old. To locate the needed number of infants in the city of Puerto Cortés, 100% of the households were visited. Only one infant was found in every 25.3 households. Over 25,000 households were contacted during the survey.

Since fewer than six percent of households contained an infant less than six months of age, to increase the efficiency of locating households with infants, in many areas interviewers conducted a census first to locate target households. Mothers were later interviewed during a scheduled visit. In other areas, censuses were completed at the same time as the interviews. At times, several interviewers would cover a widely dispersed area where there had not been a previous census taken. On average, 27 interviews were conducted each day.



After accounting for canceled interview appointments, refusals, and interviewer errors (n=32), the final sample consisted of 1545 mothers based on mothers' reported ages of their infants. This is less than a one percent non-response rate. Once ages were calculated by subtracting dates of birth from dates of interview, the sample was reduced to 1523 mothers of infants less than six months of age.⁸

Data Processing and Analyses

Supervisors reviewed each questionnaire in the field to ensure completeness. Data were entered using EPI-INFO (Center for Disease Control, Atlanta, GA) and analyses conducted with the SPSS statistical package (SPSS, Inc., Chicago, IL). Cleaning of the data included assuring accurate infant ages by reviewing birth dates and dates of interviews recorded on the questionnaires. Most women who reported age in days did so only up until the second month. The remaining tended to report ages in weeks or months and their answers were coded in days.

Calculated Ages v. Reported Ages

Calculated ages [(using the SPSS routine of $CTIME.days$ (interview date - birthdate))] were then compared to the mothers' reports of the infants' ages. When discrepancies of more than 45 days were found, the data were compared to assure accuracy of birth dates and dates of interview.⁹

Table 5 shows the comparison of the calculated ages based on date of interview and date of birth, compared to the reported ages given by the mothers. The number of children misclassified by using reported ages rather than calculated ages was 268 (18%). Of these, 241 (90%) were reported to be older than their calculated ages and 27 (10%) were reported to be younger than their calculated ages. Women were more likely to round up their infant's ages to the next completed month when their children were in the second half of the age group (15-29 days) than in the first (1-14 days).

In contrast to these findings of overestimating reported ages, when calculations of means of reported and calculated ages were done, mean reported ages of infants were *surprisingly younger* than the calculated mean ages. This is because of the heaping seen in the reported ages. Since the reported ages were recoded into age groups of < 29 days, 30-59 days, 60-89 days, 90-119 days, 120-149 days, and 150-179 days, the means were weighted to the lower heaped numbers (30 for ages 30-59; 60 for ages 60-89, etc.) within each age group.

The implications for future surveys are that calculated ages are preferable when the issue studied (such as infant feeding) is closely correlated with the infant's age. Using reported ages in Honduras is apt to slightly overestimate the ages of the children. If reported ages are used, means for those ages should not be calculated due to the heaping of ages.

Definitions Used to Define Infant Feeding Practices

The World Health Organization (WHO) suggests that "current" infant feeding practices be measured based on the consumption of breastmilk, liquids, and foods consumed on the day preceding a survey (referred to as a 24-hour recall). This recommendation is due to ease of measurement and interpretation in large-scale studies.

⁸ The total cost of the field work for both CIME and LLL/H was about \$50,000. This does not include the cost of vehicles that were lent from the MOH in Area 2 to the survey teams, or the time of the MOH health staff who helped with the survey, or the costs for staff of the University of Pennsylvania or EPB.

⁹ The interview dates for the UPS and the community as a whole were compared to the individual case's interview date and, if they varied greatly, the interview date for closest case in the UPS was used. When the date of interview was blank, the date for the closest case in the UPS was also used.



Other ways to assess breastfeeding practices include asking whether the child has “ever received” other liquids or foods during some specified interval. This interval may include “since the child’s birth” or “during the last week or month.” A third way of measuring infant feeding is by asking whether the infant usually consumed liquids or foods during a specified interval.

There are different issues associated with these definitions. Data on infant feeding during the preceding day is less open to recall error. It is more standardized than a question on “ever” consumption, which could include infants having been consistently fed other liquids or foods or instead only having been fed them once. Because of this, comparisons between two surveys are more reliable with a 24-hour recall.

For example, in the Honduras Family Health Surveys of 1987 and 1991 conflicting results were seen when a 24-hour recall was used compared to “ever” use.¹⁰ Exclusive breastfeeding was higher in the 1991 survey based on the 24-hour recall of feeding practices, while the proportion exclusively breastfeeding, using the definition of “ever” feeding other liquids, decreased.

However, the 24-hour definition overestimates the proportion who are exclusively breastfed, since the direction of the bias is in only one direction.¹¹ In addition, infants who were “ever” fed other liquids are at a greater risk of infection than those who were always exclusively breastfed. This would not be captured by only asking current practices.

In this survey, mothers were first asked whether the “child had ever been given” a specific liquid or food, and then asked whether “yesterday, day and night, was (the child) given” the liquid or food (Appendix 2 gives the questionnaire used). The specific liquids and foods asked about included: water, powdered milk or formula, cow’s milk, water with sugar or honey, tea, coffee, juice, soup, other liquids, fruit, tortillas or bread, soup, rice and beans, vegetables, or other foods. The consumption of these foods was first recoded into the sixteen possible combinations, and then refined into eight different patterns: 1) exclusively breastfed; 2) breastfed with water; 3) breastfed with non-milk liquids; 4) breastfed with cow’s milk only; 5) breastfed with cow’s milk and liquids; 6) breastfed with solids, cow’s milk, and non-milk liquids; 7) breastfed with solids and cow’s milk (with or without liquids); and, 8) not breastfed.

For most of the analyses in this report, these categories were further combined into four groups: exclusively breastfed (#1), predominantly breastfed (#2-3), other breastfeeding (#4-7), and not breastfed (#8).

Both “current” and “ever” definitions have been used and often compared. However, primarily when we report on infant feeding, we refer to the practices on the day preceding the survey.

¹⁰ Hubert Allen. Analyses of the Honduran Family Health Surveys, 1987 and 1991, conducted for EPB, December, 1993.

¹¹ If a mother reports giving other liquids yesterday, she by definition has also “ever” given liquids, but if a mother did not feed other liquids on the preceding day, she may or may not have ever given other liquids.



Calcul. ages	Reported age < 1 mo.	Reported age 1 mo.	Reported age 2 mo.	Reported age 3 mo.	Reported age 4 mo.	Reported age 5 mo	All (n)	Mean
<1 mo.	97%	13%	1%	1%		-	239	16.3
1 mo.	3%	86%	26%	1%			269	45.4
2 mo.		-	73%	15%	1%		235	74.7
3 mo.			-	78%	21%	1%	249	105.2
4 mo.				5%	77%	12%	151	134.0
5 mo.	1%			1%	2%	86%	280	164.6
All	100%	99%	100%	101%	101%	99%		
n	212	224	267	242	262	316 (total= 1523)	n= 1522 **	
Mean	19.2	42.5	66.7	98.6	124.2	150.4		

* Throughout this report, as in this table, columns may not sum to 100% due to rounding.

**Calculated age was not available for one infant.



CHAPTER 3. CHARACTERISTICS OF THE SAMPLE

This chapter describes the socio-demographic characteristics of the sample, and compares the two areas of El Progreso and Puerto Cortés to illustrate whether the communities were as similar as assumed during the study design phase. It also discusses differences in socio-demographic characteristics of urban compared to rural households.

Comparison of the Health Areas of El Progreso and Puerto Cortés

The sample was nearly evenly divided between the two areas with 53% living in El Progreso and neighboring areas and 47% living in Puerto Cortés and neighboring areas. Table 6 summarizes the socio-demographic characteristics for the two areas. Fifty-one (51%) percent of the total sample was categorized as urban with the El Progreso area being more urbanized than the Puerto Cortés (58% compared to 44%, $p < 0.01$).

The ages of mothers ranged from twelve to 50 years. The average age was 25 years and was similar in the two areas. Twenty-three percent (23%) of mothers were aged nineteen or younger and only 7% were 36 years old or older. On average, mothers had completed five years of education. Seven percent (7%) reported never attending school, and 75% had six or fewer years of education. Eight percent had completed twelve or more years.

Most women reported being married (24%) or living with a companion (56%), while 19% were single. Only 1% were separated, divorced, or widowed. In one-fourth of the sample, the child's father did not live in the same home. In both areas there were similar proportions (about 90%) of married or women in relationships "*unida/acompanada*" living with their "spouses" (Table A-1 in the appendix). However single women in Puerto Cortés were twice as likely to be living with the child's father than those in El Progreso (25% vs. 12%). This difference was not associated with variations in breastfeeding practices.

Only 7% of the entire sample were currently working outside the home. More mothers in Puerto Cortés (35%) reported usually working than in El Progreso (29%). The proportion who worked outside the house (16%), or who had already returned to work (7%) was similar in both areas (Table 7). Of women who had already returned to work ($n=99$), those in Puerto Cortés were more likely than women in El Progreso to work in factories or in trade/commerce. The proportion planning to return to work in the next two months also did not differ (33%).

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Characteristic	El Progreso	Puerto Cortés	Total	p value
Population distribution	53%	47%	100% (n=1523)	<0.01
% Urban	58%	44%	51% (n=1523)	<0.01
Mother's age			(n=1521)	n.s.*
< 19 yrs.	22%	24%	23%	
20-29	55%	55%	55%	
30-39	20%	19%	20%	
40+	3%	2%	2%	
% Ever attended school	92%	94%	93% (n=1522)	n.s.
Education level			(n=1415)	n.s.
Some elementary	46%	40%	43%	
Graduated elem.	35%	40%	38%	
Some high school	10%	11%	11%	
Grad. high school	8%	9%	9%	
Marital status			(n=1520)	n.s.
% single	18%	20%	19%	
% married	25%	23%	24%	
% with companion	55%	57%	56%	
% widow, sep/div.	1%	0%	1%	

*n.s. = not significant.

Working pattern	El Progreso	Puerto Cortés	Total	p value
Mothers usually working	29%	35%	32% (n=1522)	<0.05
Works out of house	14%	18%	16% (n=1522)	n.s.
Returned to work	6%	8%	7% (n=1522)	n.s.
Where works			(n=99)	<0.05
Factories	27%	39%	33%	
Trade/commerce	9%	22%	16%	
Teacher	16%	11%	13%	
Other	48%	28%	38%	
% Planning to work in 2 mo.	31%	35%	33% (n=1130)	n.s.

Table 8 shows that the average number of people living in the household was 6.7, with 3.5 adults or children over twelve and 3.2 children under age twelve. These figures were similar for both El Progreso and Puerto Cortés.

	El Progreso	Puerto Cortés	Total	p value
Total people	6.9	6.6	6.7	n.s.
Total adults	3.6	3.4	3.5	n.s.
Children	3.3	3.2	3.2	n.s.

The proportion of households with electricity was similar for the two areas (68%), however the households in Puerto Cortés seem to be slightly better off, with a higher percentage having indoor toilets, indoor faucets, working bicycles, cassette players, and televisions (Table 9). Households in Puerto Cortés were also more likely to have wood floors, but this is probably related to this port city being prone to flooding so that many houses have been built on stilts (*pilonas*) to prevent damage by floods.

A combined wealth indicator was developed from ownership of a car or motorcycle or refrigerator as an indication of "high" socioeconomic status, ownership of a bicycle (and none of the above goods) was defined as "medium," and no ownership of any of these as "low." This classification divided the population roughly in thirds. This indicator also illustrated that households in Puerto Cortés had higher levels of wealth than El Progreso.



Characteristic	El Progreso	Puerto Cortés	Total	p value
% with electricity	67%	68%	68% (n=1522)	n.s
Type of floor			(n=1518)	<0.001
Earth	27%	17%	22%	
Wood	3%	22%	12%	
Cement/brick	70%	61%	66%	
Water supply			(n=1522)	
Faucet inside house	29%	41%	35%	<0.001
Faucet on premises	57%	37%	48%	
Well	5%	9%	7%	
Other	9%	13%	10%	
Sanitation			(n=1523)	<0.01
% with toilet	31%	55%	43%	
Water latrine	30%	15%	23%	
Pit latrine	24%	16%	20%	
Other	14%	14%	14%	
% w/working refrigerator	28%	32%	30% (n=1519)	n.s.
% w/working bicycle	57%	65%	61% (n=1519)	<0.001
% w/working radio	73%	77%	75% (n=1518)	n.s.
% w/working cassette player	64%	71%	67% (n=1522)	<0.01
% w/working television	55%	61%	58%	<0.01
% w/working car	10%	11%	10% (n=1501)	n.s.
Combined wealth indicator			(n=1523)	<0.05
High	32%	36%	33%	
Medium	33%	35%	34%	
Low	36%	30%	33%	

Characteristic	El Progreso	Puerto Cortés	Total	p value
% girls	50%	46%	48% (n=1522)	n.s.
Age distribution			(n=1523)	n.s.
<1 mo.	16%	16%	16%	
1 mo.	17%	19%	18%	
2 mo.	17%	14%	15%	
3 mo.	15%	18%	16%	
4 mo.	17%	16%	17%	
5 mo.	19%	18%	18%	
Where born			(n=1520)	<0.001
MOH hospital	38%	44%	41%	
Private hospital	11%	13%	12%	
Soc. sec. hospital	2%	1%	2%	
At home	42%	34%	38%	
At midwife's home	6%	8%	7%	
Other	1%	1%	1%	
Attended delivery			(n=1520)	<0.001
Physician	46%	47%	47%	
Nurse	6%	14%	10%	
Midwife	41%	35%	38%	
Other	7%	4%	5%	
% caesarian deliveries	7%	7%	7%	n.s.

Table 10 gives the characteristics of the infants in the survey by area. There were similar proportions of boys and girls in both sites (52% boys and 48% girls). Three sets of twins were located by the survey with only one twin from each set included. The age distribution of infants included in the survey was similar in the two areas with nearly equal percentages found among all six age groups. More infants in Puerto Cortés were born in hospitals than in El Progreso and they were more likely to be delivered by a nurse, while the mothers in El Progreso were more likely to be delivered by a midwife, however both groups were equally likely to be delivered by physicians. The caesarian delivery rate was similar for both groups (7%).

Although, as discussed above, there are some characteristics of mothers and infants that differ by area, there are no significant differences in breastfeeding practices (Table A-2 in the appendix). This is an important finding as it supports the validity of the baseline data to provide information on infant feeding practices to be compared to future surveys.



Urban/Rural Comparisons

Table 11 shows socioeconomic characteristics of the sample by urban/rural residence. The definition of urban/rural is that used by the MOH to classify areas in which they work. Mothers' ages were similar in urban and rural areas. Urban mothers were more likely to be single than rural mothers. The proportion of mothers usually working was similar, but twice as many urban mothers usually worked outside their homes as rural mothers.

Households in urban areas were more likely than those living in rural areas to have electricity, better water and sanitation and more modern conveniences. The combined indicator of wealth also illustrated that urban households were better off than rural households (Table 12). While the number of adults in the household was similar for urban and rural areas, there were more children in rural than in urban households (3.6 v. 2.9), reflecting higher fertility rates in rural areas.

Rural infants were more likely to be born at home and to be delivered by a midwife than urban infants who were more likely to be born in a hospital and delivered by a physician (Table 13).

Table 11. Socioeconomic characteristics by urban/rural residence				
Characteristic	Urban	Rural	Total	p value
Population distribution	51%	49%	100% (n=1520)	
Mothers' age distribution			(n=1521)	n.s.
< 19 yrs.	21%	25%	23%	
20-29	57%	53%	55%	
30-39	20%	20%	20%	
40+	2%	2%	2%	
% Ever attended school	97%	89%	93% (n=1522)	<0.001
Education level			(n=1415)	<0.001
Some elementary	32%	55%	43%	
Graduated elem.	39%	36%	38%	
Some high school	15%	6%	11%	
Grad. high school	14%	3%	9%	
Marital status			(n=1520)	<0.01
Single	22%	16%	19%	
Married	26%	22%	24%	
With companion	51%	61%	56%	
Widow, sep/div.	1%	1%	1%	
Mothers usually working	32%	32%	32% (n=1522)	n.s.
Works out of house	65%	32%	49% (n=482)	<0.001
% returned to work	44%	38%	42% (n=236)	n.s.
% Planning to work in 2 mo.	38%	28%	33% (n=1130)	<0.001
Mean number of children	2.9	3.6	3.2 (n=1523)	<0.001



Table 12. Household characteristics of families by urban/rural residence				
Characteristic	Urban	Rural	Total	p value
% with electricity	90%	44%	68% (n=1522)	<0.001
Type of floor			(n=1518)	<0.001
Earth	8%	37%	22%	
Wood	18%	5%	12%	
Cement/brick	64%	58%	66%	
Water supply			(n=1522)	
Faucet inside house	45%	24%	35%	<0.001
Faucet on premises	49%	47%	48%	
Well	1%	13%	7%	
Other	5%	16%	10%	
Sanitation			(n=1523)	<0.01
% with toilet	57%	27%	43%	
Water latrine	17%	29%	23%	
Pit latrine	22%	18%	20%	
Open air	3%	25%	14%	
Other	1%	0%	1%	
% w/working refrigerator	45%	16%	30% (n=1519)	<0.001
% w/working bicycle	65%	56%	61% (n=1519)	<0.001
% w/working radio	83%	66%	75% (n=1518)	<0.001
% w/working cassette player	75%	59%	67% (n=1522)	<0.01
% w/working television	74%	41%	58%	<0.01
% w/working car	15%	6%	10% (n=1501)	<0.001
Combined wealth indicator			1523	<0.001
High	47%	19%	33%	
Medium	27%	40%	34%	
Low	26%	41%	33%	



Characteristic	Urban	Rural	Total	p value
Where born			(n=1520)	<0.001
MOH hospital	51%	30%	41%	
Private hospital	17%	7%	12%	
Soc. sec. hospital	2%	1%	2%	
At home	21%	56%	38%	
At midwife's home	8%	6%	7%	
Other	1%	1%	1%	
Attended delivery			(n=1520)	<0.001
Physician	61%	31%	47%	
Nurse	12%	8%	10%	
Midwife	24%	53%	38%	
Other (no one/ relative/friend)	2%	8%	5%	



CHAPTER 4. BREASTFEEDING PRACTICES

Breastfeeding Status

Only 4% of survey infants were never breastfed and 13% were not currently breastfed. The proportion of infants not breastfed increased from 3% in the first month of life to nearly one-fourth (22%) of infants at five months of age (Table 14).

Breastfeeding practice	%	n
Never breastfed	4%	1522
Not currently breastfed (0-5 mo.)	13%	1518
< 1 mo.	3%	239
1 mo.	9%	269
2 mo.	11%	235
3 mo.	14%	249
4 mo.	17%	251
5 mo.	22%	280

Reasons for Stopping Breastfeeding

The most common reasons given by mothers for having stopped breastfeeding was because the baby did not want to breastfeed (30%) or because of insufficient milk (23%). Ten percent (10%) stopped because they went back to work and 16% because the mother had been ill.

Of the group of women who discontinued breastfeeding, eighty-one percent (81%) with infants less than six months of age had stopped within 60 days postpartum and of those with infants less than four months of age 95% reported stopping breastfeeding within 60 days postpartum.

Women who stopped breastfeeding were also much more likely than other women to have started giving milks in the first two weeks postpartum. Of non-breastfeeding mothers, 58% started giving milk in the first two weeks compared to 39% for breastfeeding women. Early use of milk is thus a risk factor for termination of breastfeeding.

Current Breastfeeding Practices

An exclusively breastfed infant consumes only breastmilk and a predominantly breastfed infant consumes breastmilk and other liquids such as water or herbal teas. Predominantly breastfed infants obtain nearly all their nutrient intake from breastmilk. However, compared to exclusively breastfed infants, they have an increased risk of illnesses such as diarrhea. In addition, bottle feeding can negatively affect the way infants swallow and lead to ear aches and respiratory infections.

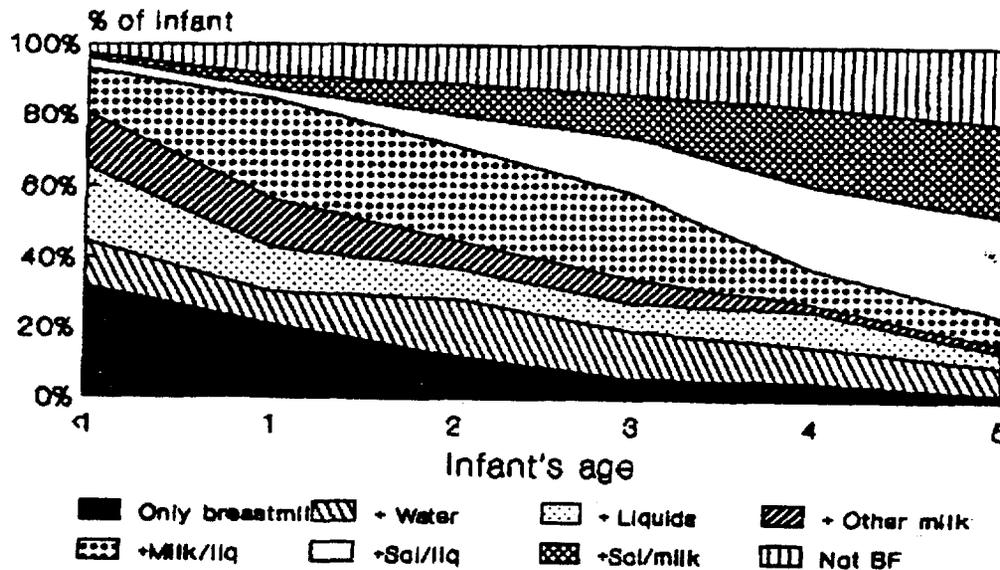
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Infants who receive cow's milk in addition to breastmilk face even greater health risks than predominantly breastfed infants. Processed milks lack many of the protective factors of human milk or any fresh milk and there is always a greater risk of contamination. In addition, breastfed infants consuming cow's milk often receive less breastmilk than exclusively or predominantly breastfed infants. This results in less intake of anti-infective properties and often nutrients since the cow's milk may be diluted and several nutrients (such as iron, calcium, and vitamin A) are not as well absorbed.

The majority of infants in this study are not in compliance with the MOH recommendation of exclusive breastfeeding for six months. Rather than 100%, only 13% of infants in the survey were exclusively breastfed on the day preceding the survey.

Figure 3 and Table 15 show how breastfeeding practices change with the infant's age. Eight categories of infant feeding are shown including no breastfeeding and seven patterns of breastfeeding: exclusive breastfeeding, water only, liquids (with or without water), cow's milk¹² alone, cow's milk and liquids, solids with cow's milk, and solids without cow's milk.

Figure 3. Breastfeeding practices among infants ages < 6 months



During the first month after birth, 32% of infants were exclusively breastfed and 34% were predominantly breastfed. Of the predominantly breastfed infants, one-third received water in addition to breastmilk and two-thirds received other liquids such as sugar water or herbal teas.

Between one and two months of age, only 21% of infants were exclusively breastfed and 22% were predominantly breastfed. Between two and three months of age, the proportion of infants exclusively breastfed was reduced in half to 12% and 25% were predominantly breastfed.

¹² In this report, unless otherwise noted, the term cow's milk is used to include non-human milks such as powdered milk, infant formula, or liquid cow's milk.

Table 15. Breastfeeding practices on day preceding the survey

Age of infant	Excl. breast-fed	Breast-milk - water	Breast-milk + other liquids	Breast-milk + cow's milk	Breast-milk, cow's milk + liquids	Breast-milk + solids +- liquids	Breast-milk + cow's milk + solids +- liquids	Not breast-fed	n
<1 mo	32%	13%	21%	15%	13%	3%	1%	3%	239
1 mo.	21%	9%	13%	14%	28%	3%	4%	9%	266
2 mo.	12%	16%	9%	8%	26%	9%	9%	11%	235
3 mo.	6%	13%	8%	7%	24%	16%	12%	14%	249
4 mo.	5%	10%	10%	2%	10%	23%	22%	17%	250
5 mo.	2%	8%	4%	2%	8%	29%	26%	22%	279
0-5.9 mo.	13%	11%	11%	8%	18%	14%	13%	13%	1518

The major findings shown in this figure and Table 15 are the following:

- ▶ Few infants are exclusively breastfed beyond the first two months of life.
- ▶ Water use is high, with about half of all breastfed infants receiving water in the first two months of life increasing to over three-fourths by the fourth month of life.
- ▶ The use of other liquids such as sugar water or herbal teas alone in addition to breastmilk is highest during the first two months of life. During this time, about one-third of all breastfed infants receive these other liquids.
- ▶ The use of cow's milk increases rapidly in the first two months of life. In the first month, over 30% of infants were fed milk but this rate nearly doubles to over half in the second month.
- ▶ Except during the first month of life, most infants who receive cow's milk also receive other liquids.
- ▶ By four months of age, about half of all breastfed infants but only one-fourth of non-breastfed infants receive solids.

These findings suggest that feeding of water, other liquids, and cow's milk to infants must be prevented early within the first two months of life.



Use of the Term “Solo Pecho” by Mothers

While the rate of exclusive breastfeeding among breastfeeding infants in the survey was only 15%, when asked whether they gave their infants “only breastmilk (*solo pecho*),”¹³ 49% of breastfeeding mothers responded that they did. Of mothers who were exclusively breastfeeding, 85% said they gave *solo pecho*; 86% of mothers who were predominantly breastfeeding reported *solo pecho*; and, 79% of mothers who gave only solids or liquids (and no milk) reported *solo pecho*.

However only six percent (6%) of mothers who gave milk alone or with liquids reported *solo pecho*, and 7% of those giving milk and solids reported *solo pecho*. Thus mothers use the term *solo pecho* to mean that cow’s milk was not given to the infant. This is important to keep in mind when designing messages to promote breastfeeding. Promoting *solo pecho* will not be useful in preventing the addition of water or other non-milk liquids to the infant’s diet.

WHO Indicators

In addition to examining practices for each month of life, many programs report data according to the WHO indicators for infants 0-3.9 months of life (Table 16).

Indicator (age 0-119 days)	Urban	Rural	Total (n)
Any type of breastfeeding	90%	91%	91% (989)
Exclusive breastfeeding	14%	22%	18%
Predominant breastfeeding (breastmilk plus water/non-milk liquids)	19%	31%	25%

Current Consumption of Other /Liquids

During the first few months of life, liquids frequently given to infants include water, sugar water, and herbal teas. As age increases, consumption of juice and soups increase and use of sugar water and teas decrease. Coffee is not commonly consumed by young infants.

In the first three months of life, predominantly breastfed infants are more likely to receive sugar waters and teas than infants consuming cow’s milk or those not breastfed (Table A-3 in the appendix). These findings suggest that some breastfeeding women give milk to complement the breastmilk while others give sugar water and tea.

Four (4%) percent (n=7) of the non-breastfed infants did not receive any cow’s milk on the day preceding the survey. This is a concern because non-breastfed infants need to receive the high quality protein that milk provides. Mothers of six of the seven had only elementary education and all were in the lower two wealth groups. Only two who did not receive any cow’s milk were ill. Breastfed infants are seldom at risk of not receiving adequate nutrients because breastmilk is always available.

¹³ In Spanish, the question was “Le dá a (Nombre) sólo pecho?”



Types of Milks Consumed

There were no differences in the types of milk consumed by breastfed or non-breastfed infants. Of infants fed milk on the preceding day, 55% were given fresh or powdered milk and 45% were fed infant formula (Table A-4). Ceteco was the most commonly given powdered milk and Enfamil the most frequently given infant formula. Use of infant formula was strongly correlated with socioeconomic status. Of mothers in the highest wealth category, 67% gave formula compared to only 35% of those of medium wealth and 25% of those with low wealth ($p<0.001$). Urban mothers were nearly twice as likely as rural mothers to give formula (55% compared to 32% $p<0.001$).

Current Consumption of Solids

Only a few infants (up to 5%) less than two months of age and fewer than 15% of those aged 2-2.9 months received solids on the preceding day. By the age of 3-3.9 months, one-third of infants were fed solids, and by 4-4.9 months of age, half were fed solids on the day preceding the survey.

Table A-5 in the appendix shows that the most frequently given solids included rice and beans and the solid components in soup.¹⁴ Because of the small sample sizes below age three months, only infants 3-5.9 months of age are shown in the table. The proportion of breastfed infants who were fed solids is similar regardless of whether or not they also were fed cow's milk. However both types of breastfed infants were more likely than non-breastfed infants to receive solid foods. This suggests that mothers of non-breastfed infants rely on breastmilk substitutes to satisfy the infants' hunger, while breastfeeding mothers rely more on solids.

"Ever" Use of Other Liquids or Solids

Table 17 compares the types of breastfeeding practices when categorized by "current" or "ever" practices. While 33% of infants aged less than one month were exclusively breastfed by "current" consumption, only half of these infants had always been exclusively breastfed. The proportion exclusively breastfed using the "ever" definition is only 17%. As infant's age increases, rates of "ever" exclusive breastfeeding are even lower, since there is more time in which infants can have "ever" been given other foods.

Table A-6 in the appendix combines ages to compare "current" and "ever" consumption of solids. Only 12% of the currently exclusively breastfed infants had ever been given solids, while one-third of infants who were fed water or other liquids had been given solids.

Table A-7 in the appendix shows that most infants aged less than one month who were exclusively breastfed on the preceding day but who had "ever" been fed other substances, were given liquids rather than cow's milk. But by age two months, most who had been given other substances, had also been given cow's milk. Beyond this age, the numbers of infants currently exclusively or predominantly breastfed are few.

Seventy-eight (78%) percent of mothers who ever gave water and eighty-six percent (86%) of mothers who ever gave milk reported giving them by 60 days postpartum.

¹⁴ The proportion giving solids in soup differs somewhat from the proportions reported drinking soup as a liquid. Women were more likely to report soup as a solid food rather than a liquid, thus there were more women who reported giving the solids in soup than reported giving soup as a liquid. Therefore in communication messages, soup will need to be addressed separately from liquids.



Table 17. Comparison of "current" and "ever" consumption of liquids/foods among breastfed infants

Age of infant	Only breastmilk		Breastmilk + water		Breastmilk + liquids		Breastmilk + milk		Breastmilk + milk + liquids		Breastmilk + solid milk	
	Curr.	Ever	Curr.	Ever	Curr.	Ever	Curr.	Ever	Curr.	Ever	Curr.	Ever
<1 mo. (n=231)	33%	19%	13%	8%	21%	32%	15%	7%	14%	28%	4%	6%
1 mo. (n=243)	23%	7%	10%	4%	14%	18%	16%	6%	31%	42%	7%	23%
2 mo. (n=209)	14%	1%	18%	6%	11%	18%	9%	1%	29%	33%	20%	42%
3 mo. (n=214)	7%	1%	15%	4%	10%	5%	8%	0%	28%	26%	32%	64%
4 mo. (n=208)	6%	1%	12%	4%	12%	5%	3%	0%	13%	8%	54%	81%
5 mo. (n=217)	2%	1%	10%	1%	6%	1%	2%	1%	10%	5%	70%	92%
0-5.9 mo. (n=1322)	15%	5%	13%	4%	12%	14%	9%	3%	21%	24%	31%	50%

Reasons for Giving Other Liquids/Solids

Reasons reported by mothers for giving water, other liquids, milk, and solids to their infants often varied by whether the infant was currently breastfed and by the infant's age. However because the sample sizes became too small, the next two tables examine these separately. Table 18 compares mothers' reasons for giving liquids or solids by whether or not they were currently breastfeeding. Table A-8 in the appendix combines the reasons given for adding other foods into fewer total categories and compares these reasons by infant's age.

Reasons for Giving Water

Water was given to infants primarily because the baby was reported to be thirsty or hot (27% for breastfed and 36% for non-breastfed infants) or because the baby needed it (27% and 20%). Nearly one-fifth of women (18% and 16%, respectively) reported being advised by a relative, friend, or health worker to give water. Water was also commonly given because the baby had hiccoughs or gas (8% and 11%, respectively).

During the first month, water was given to reduce hiccoughs or gas by 28% of mothers. By the next month, this proportion was reduced in half. The proportion of mothers who reported giving water because the baby was thirsty or hot remained at about 35%-40% throughout the first half of infancy.

Reasons for Giving Other Liquids

The major reason for giving other liquids was to get the baby used to them (31% for breastfed infants and 24% for non-breastfed infants). These were also given to keep the baby full (9% and 11%), or because the baby was hot or thirsty (12% and 10%) or needed it (13% and 11%). Other liquids were also reported to be given as medicine (8% and 9%).



An unusual finding is that the proportion of mothers who report giving other liquids to get the baby used to them increases with the infant's age from 6% at less than one month to 36% at five months. More research is needed to understand what this belief signifies.

Reasons for Giving Milk

Twenty-four percent (24%) of non-breastfed infants were reported to have been given cow's milk because they refused the breast compared to only 1% of breastfed infants. The most common reason (29%) for giving cow's milk to breastfed infants was to "keep the baby full." Insufficient milk was mentioned by 26% of mothers of non-breastfed and 17% of breastfed infants. Nearly half of the infants who received other milks were given them because of these reasons.

The proportion of mothers that reported giving milk due to insufficient milk is highest in the first month of life (28%), but remained between 15-20% during the next months. The proportion that gave milk to keep the infant full was 22% in the first month of life and increased to about 30% for the next few months.

Table 18. Mothers' reasons for feeding infants different liquids and solids by breastfeeding status

Reason	Water		Other Liquids		Milk		Solids	
	Not Bfed	Bfed	Not Bfed	Bfed	Not Bfed	Bfed	Not Bfed	Bfed
Baby thirsty/hot	27%	36%	12%	17%	0%	0%	0%	0%
Babies need it	27%	20%	15%	11%	0%	1%	1%	9%
Had hiccoughs/gas	8%	11%	2%	3%	0%	0%	0%	0%
Advice/ recommendation	18%	16%	17%	11%	5%	7%	9%	8%
Baby restless/cried	0%	2%	1%	2%	3%	6%	2%	2%
To keep baby full	0%	1%	9%	11%	12%	29%	18%	22%
Insuff. milk	0%	0%	0%	4%	26%	17%	1%	0%
Get baby used to it	10%	7%	31%	24%	4%	11%	52%	48%
Mother busy	0%	0%	0%	2%	2%	8%	0%	1%
Mother returned to work	0%	0%	0%	0%	6%	7%	0%	0%
As medicine	2%	3%	8%	9%	0%	0%	0%	1%
Baby ill	1%	0%	4%	4%	4%	1%	0%	0%
Baby didn't want breast	0%	0%	0%	0%	24%	1%	0%	0%
Baby wanted food	--	--	--	--	--	--	3%	4%
Other	7%	4%	5%	9%	14%	11%	4%	4%
Total %	100	100	102	100	101	99	100	99
n	183	1052	174	1094	197	812	73	652



Reasons for Giving Solids

Solid foods were most commonly given to “get the baby used to them” (52% and 48%) and to keep the baby full (18% and 22%). Reasons given did not differ by infants’ age.

Use of Bottles

Of all infants who had ever received water, 41% had received it in a bottle, 22% in a cup, and 18% by spoon. Only 1% had ever been given water or other liquids by a dropper. Other liquids were primarily given by bottle except for soups (Table A-9). However about 10% of infants were fed water, teas, or juice from a cup or spoon. Milk was nearly always fed from a bottle.

Solids were either given by spoon or by using fingers. The high rate of feeding fruits (73%) or vegetables (32%) by hand illustrates the importance of messages regarding hand washing prior to feeding children such foods.

The use of cups for sugar water, tea, and juice increased and the use of spoons decreased as infants became older. However, at least three-fourths of infants were still being fed with bottles for these liquids by six months of age (Table 19).

Water use was strikingly different, since water was given by spoon to a high proportion of infants (38%) during the first month of life. This declined to 12% by the age five months, when nearly half of infants received their water in cups. By age three months, half of infants were being fed water with a cup.



Table 19. Percent of all infants fed with different utensils by infant's age						
Age	< 1mo.	1 mo.	2 mo.	3 mo.	4 mo.	5 mo.
Water (n)*	136	190	200	223	245	266
Bottle	57%	61%	49%	54%	44%	38%
Cup	6%	8%	14%	25%	41%	50%
Spoon/other	38%	31%	37%	22%	15%	12%
Sugar water (n)*	115	156	160	163	177	191
Bottle	77%	83%	86%	88%	83%	79%
Cup	4%	5%	6%	9%	12%	14%
Spoon/other	19%	12%	9%	3%	6%	7%
Tea (n) *	63	107	106	114	116	145
Bottle	75%	74%	78%	83%	81%	73%
Cup	3%	6%	8%	7%	7%	17%
Spoon/other	22%	21%	14%	10%	12%	10%
Juice (n)*	18	76	112	140	159	222
Bottle	83%	88%	92%	94%	86%	82%
Cup	6%	3%	2%	4%	12%	16%
Spoon/other	11%	9%	6%	1%	3%	3%

*Differences each type of liquid by age are significant at $p < 0.001$.



Implications for Communication Messages

- ▶ Nearly one-fourth of mothers have stopped breastfeeding by six months. Of these, however, most stop during the first two months postpartum. Understanding the reasons why women stop at this time is necessary before messages can be developed that will address constraints to breastfeeding.
- ▶ Mothers use the term *solo pecho* to mean that cow's milk was not given to the infant. This is important to keep in mind when designing messages to promote breastfeeding. Promoting *solo pecho* will not be useful in preventing the addition of water or other non-milk liquids to the infant's diet.
- ▶ Feeding of water and other liquids and cow's milk to infants must be prevented early, within the first two months of life.
- ▶ In the first month of life, messages should address the belief that water can cure hiccoughs or gas or that it is needed because the baby is thirsty or hot.
- ▶ Messages need to address the concerns mothers have about producing enough milk for their infants. It will be necessary to learn why mothers believe they have insufficient milk and why they report that cow's milk was needed to "keep the baby full." We need to learn what the cues are that infer to mothers that their babies are not full.
- ▶ Different ways should be tried to convince mothers that their milk supply is sufficient to "keep their babies full." Such trials could include counseling about milk sufficiency being related to the number of feedings, number of wet or soiled diapers, or in conjunction with growth monitoring to show that the babies are receiving sufficient breastmilk.
- ▶ Since about half of infants drink water from cups, it may be possible to convince mothers to feed infants milk from cups rather than bottles. This may help prevent the negative affect bottles appear to have on breastfeeding frequency.



CHAPTER 5. FACTORS ASSOCIATED WITH BREASTFEEDING PRACTICES

To promote improvements in breastfeeding practices, it is useful to examine factors associated with different patterns. This chapter discusses the relationship of socioeconomic characteristics, health care practices, mothers' beliefs, and problems they report with breastfeeding.

Socioeconomic Characteristics

The relationship of socioeconomic characteristics with breastfeeding is shown in Tables 20-21. Exclusive breastfeeding was lower in urban areas than in rural areas (10% compared to 15%). A higher percentage of urban compared to rural women had stopped breastfeeding (15% compared to 11%). While statistically significant, these differences were not particularly striking, suggesting that in this area, urban/rural residence is not a major factor affecting breastfeeding rates in this area.

An interesting finding is that in urban areas, breastfeeding practices did not differ significantly by mother's education level or the indicator of wealth. However, in rural areas, more highly educated women and those with more wealth had poorer breastfeeding practices. This suggests that factors affecting breastfeeding in urban areas appear to affect all mothers similarly, while in rural areas, socioeconomic factors play a greater role.

Mothers' age was not significantly related to breast-feeding practices. However, the small proportion of mothers more than 40 years old were more likely to be breastfeeding exclusively than younger mothers.

Women's working patterns were associated with reductions in the prevalence of current breastfeeding but not with the type of breastfeeding being practiced. Of mothers who had returned to work, about half were not breastfeeding compared to only 10% of those who had not returned to work. However, only 6% of the sample had returned to work.

Prenatal, Delivery, and Postpartum Practices

Prenatal Care

Seventy-four percent (74%) of mothers received prenatal checkups. Forty-two percent (42%) of these took place in a MOH health clinic with a physician (CESAMO), 34% in a private hospital or clinic, 12% in a rural MOH clinic (CESAR), 8% in a MOH hospital, and 3% in a Social Security hospital.

Of women who received prenatal care, 28% had less than four checkups, and half (53%) had at least five checkups. Thirty-seven (37%) percent of the women were advised to breastfeed during these prenatal checkups by a doctor or nurse. Twelve percent (12%) of mothers were taught how to express milk during a prenatal visit and 38% had their nipples examined.

Use of prenatal care was unrelated to breastfeeding practices (Table A-10).



Table 20. Socio-demographic characteristics of mothers by breastfeeding practices							
Characteristic	Excl breastfed	Predom. breastfed	Breastfed with milk or solids	Not breast- fed	Total %,	n	p value
Urban/rural						1522	<0.001
Urban	10%	16%	59%	15%	100		
Rural	15%	28%	46%	11%	100		
Mothers age distribution						1516	n.s.
< 19 yrs.	13%	23%	53%	11%	100	351	
20-29	12%	22%	54%	13%	101	835	
30-39	14%	23%	51%	13%	101	297	
40+	30%	9%	39%	21%	99	33	
Mothers usually working						1517	<0.01
Yes	12%	21%	50%	17%	100	480	
No	13%	23%	53%	11%	100	1037	
Where mother works						479	<0.001
Outside of house	7%	12%	57%	24%	100	235	
Inside the house	16%	29%	44%	11%	100	244	
Has returned to work						234	<0.001
Yes	3%	2%	52%	43%	100	98	
No	10%	19%	60%	10%	99	136	

Table 21. Socioeconomic characteristics of mothers by breastfeeding practices

Characteristic	Excl. breastfed	Predom. breastfed	Breastfed with milk or solids	Not-currently breastfed	Total %	n	p value
Education level							
Urban						777	n.s.
No educ.	15%	22%	41%	22%	100		
Some elementary	11%	14%	60%	16%	101		
Graduated elem.	11%	17%	59%	13%	100		
High school	8%	17%	61%	16%	102		
Rural						739	<0.01
No educ.	25%	38%	30%	6%	99		
Some elementary	16%	28%	47%	9%	100		
Graduated elem.	13%	27%	46%	13%	99		
High school	7%	24%	53%	16%	100		
Combined wealth							
Urban					650	777	n.s.
High	10%	14%	60%	16%	100		
Medium	9%	17%	59%	15%	100		
Low	12%	17%	58%	13%	100		
Rural						741	<0.001
High	11%	27%	41%	21%	100		
Medium	14%	32%	47%	7%	100		
Low	19%	25%	46%	10%	100		



Delivery Practices

Table 22 shows the relationships of delivery practices and breastfeeding patterns. We controlled for urban/rural location since this affects the site of the birth and the type of professional attending the birth.

In urban areas breastfeeding practices were not significantly related to birth site. But in rural areas mothers who delivered their infants at home were more likely than mothers who delivered in hospitals to be exclusively breastfeeding. Similar patterns were seen by the staff who attended the delivery since doctors and nurses were more likely to work in hospitals or health centers, and midwives to deliver infants at home. However when infants were born in midwife's homes, exclusive breastfeeding rates were about one-third of that observed when they were born at the mothers' own homes (8% compared to 16%). The rate for infants born in midwife's homes were similar to that of infants born in private hospitals or clinics of 7%.

More than 50% of mothers breastfed within the first 30 minutes after delivery, and 80% breastfed in the first seven hours. The timing of first breastfeed was unrelated to the breastfeeding practices (Table A-10 in the appendix). The major reason given by mothers for not breastfeeding sooner after delivery was that the milk did not "come in" (29%), the hospital staff did not bring the baby to the mother (15%), the baby was sleeping (23%), because the baby did not want the breast (8%), and other reasons (25%).

Ninety percent (90%) of mothers who delivered in a hospital had rooming-in. Less than 10% of infants were given water (4%) or sugar water (9%) or cow's milk (6%) in the first hours after birth, however 17% of infants were given glucose water-*suero*¹⁵(Table A-11 in the appendix). Those infants born in the hospital who were caesarean births were more likely than vaginal births to have been given *suero* (45% vs. 18%). Those who were pre- or post-term were also more likely to receive it compared to infants of normal gestation (38% vs. 20%).

Use of *suero* was highly correlated with breastfeeding practices. Infants given *suero* were twice as likely as those not given it to not be breastfed and nearly three times as likely to not be exclusively breastfed (Table 23). This pattern was seen for both hospital and home births, but twice as many infants born in hospitals (21%) received *suero* as those born at home (12%).

Nearly all mothers (89%) reported having fed colostrum to their infants. Only 27% of mothers were advised to breastfeed immediately postpartum. About one third (31%) were helped to breastfeed, 33% by a mother or other relative, 24% by a nurse, 20% by a midwife, and 15% by a physician. A surprising finding was that those who were helped to breastfeed in the hospital were less likely than those not helped to be currently breastfeeding. This may be because mothers who have difficulties breastfeeding are more likely than those who did not have difficulties to be given help by health care workers.

Twenty-four (24%) percent of mothers were taught how to express milk. Women who were taught how to express milk, whether they delivered in the hospital or home, were also less likely than those not taught to express to be currently breastfeeding (Table 24). Since mothers were not asked who had taught them how to express milk, we do not have any more information about why this may have occurred. However, having been taught to express breastmilk was unrelated to working patterns since mothers who usually worked or who had returned to work were not more likely than those who did not usually work or who had not returned to work to be taught how to express their milk.

¹⁵ *Suero* (glucose water) differs from sugar water in that *suero* is a bottled product produced for use in intravenous solutions. However it is also given by mouth to newborns. Sugar water is water to which sucrose (table sugar) has been added.



Table 22. Relationship of delivery site/attending staff and urban/rural residence by breastfeeding practices							
Delivery practices	Excl. breast-fed	Predom. breast-fed	Breastfed with milk or solids	Not-breast-fed	Total %	n	p value
Site of delivery							
Urban						775	n.s.
Delivered at hospital or health center	11%	15%	57%	16%	99%	549	.
Delivered at home	8%	17%	64%	11%	100%	226	
Rural						680	<0.001
Delivered at hospital or health center	11%	24%	48%	18%	101%	280	
Delivered at home	18%	31%	44%	7%	100%	460	
Staff attending delivery							
Urban						775	n.s.
Birth attended by MD or nurse	12%	15%	57%	16%	100%	571	
Birth attended by midwife/other	6%	17%	65%	12%	100%	204	
Rural						740	<0.001
Birth attended by MD or nurse	11%	24%	47%	18%	100%	286	
Birth attended by midwife/other	18%	31%	45%	7%	101%	454	



Table 23. Relationship of use of <i>suero</i> with breastfeeding practices							
Proportion of infants given <i>suero</i>	Excl. breastfed	Predom. breastfed	Breastfed with milk or solids	Not breast-fed	Total %	n	p value
All						1472	<0.001
Given <i>suero</i>	5%	13%	58%	25%	101%	248	
Not given <i>suero</i>	14%	24%	52%	10%	100%	1224	
Delivered in a hospital						789	<0.001
Given <i>suero</i>	5%	12%	56%	28%	101%	167	
Not given <i>suero</i>	13%	20%	54%	14%	101%	622	
Delivered at home						681	<0.001
Given <i>suero</i>	5%	14%	63%	19%	101%	81	
Not given <i>suero</i>	16%	29%	49%	6%	100%	600	

Table 24. Relationship of delivery site and help given to breastfeeding practices							
Help on breastfeeding during ante-natal period	Excl. breast-fed	Predom. breastfed	Breastfed with milk or solids	Not breast-fed	Total %	n	p value
Helped to breastfeed							
Delivered in hospital						828	<0.01
Helped to breastfed	9%	17%	51%	22%	99%	281	
Not helped	12%	19%	56%	14%	101%	547	
Delivered at home						686	n.s.
Helped to breastfed	13%	22%	55%	10%	100%	196	
Not helped	15%	28%	49%	8%	100%	490	
Taught how to express milk							
Delivered in hospital						820	<0.01
Taught to express	6%	18%	52%	24%	100%	212	
Not taught	13%	18%	54%	14%	99%	608	
Delivered at home						683	<0.01
Taught to express	9%	25%	52%	14%	100%	149	
Not taught	16%	27%	51%	6%	100%	534	

Use of Chupon

A *chupon* is a cloth filled with herbs that have been boiled in water often given to infants to suck on to clear the baby's stomach and calm the baby, much like a pacifier. Even though it is boiled, there is always a risk of infection from giving the *chupon*. It is given during the first few days following birth, but seldom given after the first month.

Sixty-three (63%) percent of all infants had been given a *chupon*. While 21% of infants ages <30 days of age were given *chupon* on the preceding day, less than 4% of older infants were given one on the preceding day.

The use of *chupon* was somewhat higher among infants born at home (68%) rather than in a hospital (60%, $p < 0.001$), but the rates were high in both.

The duration of time that infants were given a *chupon* was generally less than one week. Fifty-six (56%) were given a *chupon* for three days or less, and 76% were given them for seven days or less. Over 90% were given them for less than two weeks.



Nearly two-thirds of infants were given *chupon* even if they were born in a hospital. There was no association with wealth or mother's educational level with *chupon* use, however urban women were slightly less likely to give *chupon*. Exclusively breastfed infants were less likely to have received *chupon* than other infants (50% vs. 69% for predominantly breastfed infants, 64% for other breastfed infants, and 67% for those not breastfed ($p < 0.001$)).

Postpartum Services

Only 36% of women had postpartum checkups. Most took place at a clinic or health center (80%) and only 20% occurred in a hospital. Half of the visits were conducted within the first ten days postpartum, and 94% within the first 40 days. Half of the women were advised to breastfeed during these postpartum checkups by a doctor or nurse. Only 5% were taught how to express milk during these visits.

Use of postpartum services was negatively associated with breastfeeding practices (Table A-10). This relationship existed for women from the lower two socio-economic groups but not for those in the highest wealth group.

Problems Reported by Mothers

Mothers were asked whether they had ever experienced certain breastfeeding problems. The issue of insufficient milk was addressed in the preceding chapter as a reason given by mothers for introducing milk and other liquids to the infant's diet. In this chapter, insufficient milk is discussed as one of the problems mothers reported having.

Of all women in the study, only 37% reported that they had never experienced any problems with breastfeeding. Thirty-one percent had had only one problem, and 33% had two or more problems. Of women with no problems, 10% were not breastfeeding, while of those with two or more problems, 18% were not breastfeeding.

Out of the six problems (Table 25) asked about, the most frequently mentioned were insufficient milk, sore nipples, and flat nipples. The first two problems differed by the type of breastfeeding practiced by mothers. About one-fourth of mothers who were exclusively or predominantly breastfeeding reported that they had ever had insufficient milk, while 44% of those who also gave milks or solids, and 62% of those who were not breastfeeding reported this. This suggests that the problem of insufficient milk or its perception is related to introducing milks and to stopping breastfeeding.

Mothers who had stopped breastfeeding were more likely than breastfeeding mothers to report having had flat nipples (31% compared to 10-15% for breastfeeding mothers). While cracked nipples (19%) and sore nipples (33%), were reported by a surprisingly high percentage of women, the rates of these problems did not differ by breastfeeding status.

Problems	Excl. breastfed	Predom. breastfed	Breastfed with milk or solids	Not-breast-fed	n	p value
Flat nipples	10%	13%	15%	31%	1445	<0.001
Cracked nipples	18%	20%	18%	23%		n.s.
Sore nipples	29%	31%	35%	36%		n.s.
Engorged breasts	10%	10%	9%	13%		n.s.
Breast infection	4%	5%	4%	9%		n.s.
Insufficient milk	22%	25%	44%	62%		<0.001
n	193	332	797	171	1493	
Reasons given for insufficient milk						<0.01
Baby cried after nursing	35%	49%	49%	28%		
Breasts were small/empty	10%	9%	14%	4%		
Mother realized it (<i>me doy cuenta</i>)	25%	3%	12%	13%		
Didn't feel milk released	28%	37%	26%	42%		
Other	3%	12%	8%	13%		
n	40	81	346	106	573	

Reasons given for believing they had insufficient milk also varied by breastfeeding practices. A higher percentage (42%) of mothers who had stopped breastfeeding were more likely to report that they did not feel the milk release than exclusively breastfeeding mothers (28%).

Out of the mothers who reported problems, those who had stopped breastfeeding were more likely than those still breastfeeding to have sought advice (Table 26). There was no significant difference in breastfeeding practices, however, by the person from whom the advice was sought.

Frequency of Breastfeeding

Because of importance of frequent breastfeeding to prevent problems, we examined the association of breastfeeding practices and frequency of breast-feeding in Table 27.



	Excl. breastfed	Predom. breastfed	Breastfed with milk or solids	Not-currently breastfed	n	p value
% who sought advice	22%	32%	36%	41%	1032	<0.05
Advice sought from						n.s.
MD	48%	44%	39%	57%	157	
Mother	24%	24%	25%	23%	87	
Other relative, neighbor	28%	32%	37%	20%	116	
Total %	100	100	101	100	360	

Frequency of breastfeeding	Excl. breastfed	Predom. breastfed	Breastfed with milk or solids	n	p value
Mean # of total feeds					
<1 mo.	10.7	10.0	9.1		
1 mo.	10.3	10.2	7.7		
2 mo.	9.9	9.9	7.4		
3 mo.	9.2	9.2	7.5		
4 mo.	9.4	9.6	7.3		
5 mo.	10.0	9.4	7.6		
0-5.9 mo.	10.2	9.8	7.6		<0.001
n	155	275	697	1127	
Mean # of daytime feeds	6.5	6.6	4.9	1149	<0.001
Means # of nighttime feeds	3.4	3.1	2.7	1262	<0.001

Exclusively breastfed infants breastfed more frequently both during the day and night than other infants. When infants' age is controlled, there are few differences seen between exclusively and predominantly breastfeeding mothers. However both groups continue to show higher breastfeeding frequencies than those fed cow's milk.



A lower breastfeeding frequency may lead to less milk output causing mothers to introduce cow's milk. It also could be that mothers who introduce milk for other reasons subsequently breastfeed less often.

However, mothers who reported ever having a problem with insufficient milk had a lower frequency of feeds than those who did not report this problem (Table 28). This suggests that encouraging mothers to breastfeed more frequently and maybe for a longer time at each feed could help reduce problems of insufficient milk.

The other problem related to frequency of feeding was "the baby not wanting to breastfeed," with mothers reporting breastfeeding 7.1 times per day compared to 9.0 for mothers not having this problem.

Problem	Mean # of total breastfeeds (With problem)	Mean # of total breastfeeds (Without the problem)	Total	n	p value
Insufficient milk	7.8	8.9	8.5	1123	<0.001
Baby did not want breast	7.1	9.0	8.9	723	<0.01

Infant's Sleeping Patterns

Nearly all mothers sleep with their infants in the first month of life (87%) and this decreased to 74% of infants five months of age. The proportion of women sleeping with their infants was consistently higher for exclusively breastfeeding women even when age of the infant was controlled (Table A-12 in the appendix). Ninety (90%) percent of exclusively breastfeeding mothers sleep with their infants compared to 79% of those who gave cow's milk and 47% of non-breastfeeding mothers.

Frequency of feeding at night is apt to be affected by whether mothers sleep with their infants, and this was shown to be true in this survey. Infants who sleep with their mothers breastfed more during the night (3.0 times vs. 2.3 times), but not during the day, than those that did not sleep with their mothers. This led to the mean number of total feeds being higher among infants who sleep with their mothers even when infants' age was controlled (Table 29).



	Sleeps with mother	Does not sleep with mother	All	n	p value
Mean # of total breastfeeds	8.7	7.6	8.5	1127	<0.001
<1 mo.	10.0	9.0	9.9	185	
1 mo.	8.7	8.6	8.7	204	
2 mo.	8.5	7.7	8.4	183	
3 mo.	8.3	7.1	8.1	195	
4 mo.	8.1	7.1	7.9	174	
5 mo.	8.2	6.7	7.9	186	

Demand Verses Scheduled Feeds

Most mothers fed their infants on demand. Only 13% fed on a schedule, and this was unrelated to the infant's age. Infants who were fed on demand had a higher frequency of both day and night time feeds than infants fed on schedules (day=5.8 v. 4.1, and night=3.0 v. 2.3). Overall, demand-fed infants breastfed about two times more per day than infants fed on a schedule (Table A-13 in the appendix).

Infants fed on demand were more likely to be exclusively breastfed than those fed on a schedule (Table 30).

Type of breastfeeding	Breastfed on a schedule	Breastfed on demand	All	n	p value
Exclusively breastfed	9%	16%	15%	193	<0.001
Predominantly breastfed	15%	27%	25%	330	
Breastfed with milks or solids	76%	58%	60%	796	
All	100	101	100	1319	

Mothers Beliefs in Relation to Practices

This section presents mothers' beliefs about the introduction of other milks, liquids, and solids, and how these ideas matched their own behavior. These analyses are based on asking mothers their opinions as to whether infants need water or milk in addition to breastmilk, how to improve breastmilk output, and what advantages mothers receive from exclusively breastfeeding and from giving other milks to their infant. Mothers were asked to indicate whether advantages they mentioned were or were not important to them.

*Beliefs about Increasing Breastmilk Output*

Nearly all breastfeeding mothers (94%) reported that it was possible to improve breastmilk output. The principal ways to do so were by the mother drinking more liquids (77%) and eating more or better (19%). Less than 1% reported increasing the frequency of breastfeeding as a way to increase output. Breastfeeding practices were not associated with mothers' beliefs about how to increase milk output.

Beliefs about Demand Versus Scheduled Feeding

While we previously reported that 13% of mothers normally fed on a schedule, when asked whether infants *should be* fed on demand or on a schedule, surprisingly more than twice that number (31%) reported that infants should be fed on a schedule.

Beliefs about Water Use

Of the total sample of women, 87% agreed with the statement that infants need water during the first six months of life (Table 31). Of exclusively breastfeeding mothers, 67% reported that infants needed water compared to 89% of other breastfeeding mothers ($p < 0.001$). Reinforcing the belief that water is not necessary may help to increase the proportion of women who exclusively breastfeed.

Beliefs about water use were not related to urban/rural residence.

Belief	Percent of mothers agreeing with the belief				n	p
	Exclus. BF	Predom. BF	BF with other milks/solids	Not Bfed.		
Babies need water in addition to breastmilk in first six months	67%	88%	89%	93%	1415	<.001
Use of other milks can increase rates of diarrhea among infants	87%	88%	80%	76%	1417	<.01
Babies need other milks in addition to breastmilk	42%	41%	52%	51%	1418	<.01
Babies need to try solids to get them accustomed to other tastes	97%	99%	99%	98%	1486	n.s.
Use of solids increases the risk of diarrhea	66%	66%	60%	56%	1333	n.s.

Beliefs about Benefits of Exclusive Breastfeeding

Nearly all (97%) women reported that exclusive breastfeeding permits mothers to share more with their babies and all reported that sharing was important.

Eighty-seven (87%) percent of mothers who were exclusively breastfeeding agreed that adding other milks increases the risk that infants will get sick compared to 80% of breastfeeding mothers who also gave cow's milk



and 76% of non-breastfeeding mothers. Even though this is statistically significant ($p < 0.05$), a high proportion of mothers understand this relationship but still give other milks (Table 31).

Beliefs about Use of Other Milks

Adding Other Milks

About half of breastfeeding mothers (48%) thought it acceptable to introduce other milks in addition to breastmilk. This belief was correlated with their breastfeeding practices: 42% of those exclusively breastfeeding reported that it was acceptable to introduce other milks compared to 52% of those who were giving milk to their infants in addition to breastmilk (Table 31).

Of the mothers who reported that babies should be given other milks, more than half (56%) reported that milks should be given before six months of age. Of those, 69% fed their infants other milks compared to 60% for those who said other milks should be delayed until after six months ($p < 0.05$). This small difference suggests that merely informing mothers of the need to delay the introduction of milk probably will not be sufficient to get them to do so.

Beliefs about the Benefits of Other Milks

Of all breastfeeding mothers, 84% agreed that feeding other milks to infants gives mothers more time for chores, 80% believed that having more time is important, and 71% agreed to both statements. While this belief was not related to their breastfeeding practices, rural mothers were more likely than urban mothers to report that having time for chores was important.

Nearly all breastfeeding mothers (90%) reported that giving other milks would be helpful in allowing them to begin to work, 76% said that beginning to work was important, and 73% agreed to both statements. These results were not related to breastfeeding practices nor to urban or rural location.

Beliefs about Adding Solids

Nearly all (99%) mothers agreed that it is important to give infants solids to get them accustomed to other tastes. Sixty-two (62%) of breastfeeding mothers reported that giving solids can increase the risk of diarrhea but this belief was not related to whether or not they were exclusively breastfeeding or not.

However mothers who did not give solids were slightly more likely than those who gave solids to believe that they caused diarrhea (65% compared to 55%).

Most (83%) breastfeeding mothers reported that solids help infants gain weight quickly, but only 57% reported that it was important to gain weight quickly. Mothers who thought solids help infants gain weight were not more likely than those who did not hold this belief to feed their infants solids. These beliefs were not related to urban/rural residence.



Implications for Communication Messages

- ▶ Messages to increase the frequency of breastfeeding might help increase the proportion of exclusively breastfed infants. It will not address the use of waters and other liquids.
- ▶ Encouraging mothers to sleep with their infants may help increase the frequency of breastfeeding .
- ▶ Encouraging mothers to feed on demand could address the lower rates of optimal breastfeeding among scheduled feeders, but less than 15% of mothers feed by schedule.
- ▶ Preventing the feeding of *suerro* (glucose water) to infants in the hospital can help improve later breastfeeding patterns among 20% of hospital births.
- ▶ Health care workers need help with lactation management so that they can support mothers who exhibit problems breastfeeding.
- ▶ A majority of breastfeeding mothers know that giving other milks can increase illness in their children, but of those, half give milk anyway. Thus informing women of this fact will probably not have a major impact on breastfeeding practices.
- ▶ Few mothers report that increasing the frequency of breastfeeding can increase milk output. This message should be promoted since there is a close correlation between increased frequency of breastfeeding and exclusive rates of breastfeeding.
- ▶ Reinforcing the belief that additional water is not necessary for breastfed infants may help to increase the proportion of women who exclusively breastfeed since over 75% of mothers believe that giving water is important even if they are exclusively breastfeeding.



CHAPTER 6. INFORMATION CHANNELS ON INFANT FEEDING

Understanding how mothers obtain information about breastfeeding can help in planning communication programs to improve breastfeeding practices. This chapter summarizes some of the ways that mothers in the survey population currently obtain such information.

Seeking Advice

When asked whether there was someone from whom they could seek advice about infant feeding or if they had problems breastfeeding, 37% of mothers were unable to mention anyone. Of those who reported knowing someone, the person mentioned most often was the respondent's mother (36%), followed by their doctor (16%), mother-in-law (13%), other relative (12%), and friend (10%). Only 2% mentioned a counselor, and only 1% mentioned a midwife. This illustrates the importance of focusing efforts in the community and not just to health providers, since mothers are most likely to seek advice from within the community.

There was no difference in the breastfeeding practices by whether or not mothers were able to mention someone from whom they could seek advice.

Only 3% of women had ever received a home visit in which breastfeeding was discussed [primarily either by a friend or relative (45%), nurse (35%), or doctor (8%)] and only 3% had ever been invited to a meeting on breastfeeding.

Non-formal Channels

When asked with whom they conversed the most about infant feeding, mothers reported their mothers most frequently (27%). While some reported their friends and neighbors (14%) or their mother-in-law (13%), many (19%) reported that they talked to no one about it.

Mass Media

A high proportion of women reported ownership and exposure to radio and television. Three-fourths (75%) of mothers own a functioning radio and 58% own a working television (Table 32). Most mothers who own a radio or television use it daily (77% listen to radio and 88% watch television seven days a week). Of all mothers, 39% had heard an ad on radio about breastfeeding and 41% reported hearing one on the television.

Of those who reported exposure to radio ads, 53% recalled at least one specific message. Of those who reported television ads, 66% recalled at least one message. However, neither exposure to nor recall of radio or television messages about breastfeeding were related to exclusive breastfeeding.

Although women who owned a working radio or television were most likely to have media exposure, a small proportion of women without access in their homes also reported exposure. Twenty percent (20%) of those not owning a radio (n=333) said they listened to it, while 17% of those not owning a television (n=613) said they watched it. These women may have listened or watched in others' homes. Alternatively, some may also have had exposure in their own home at an earlier time since a small proportion did own radios and televisions that did not presently work (3% and 2%, respectively).

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Ownership of radio or television	
Functioning radio	75%
Functioning television	58%
One or the other	82%
Both	51%
Mother listens to or watches	
Radio	70%
Television	62%
One or the other	84%
Both	47%
Has ever heard an ad on breastfeeding	
Radio	39%
Television	41%
One or the other	59%
Both	19%

Implications for Communications Messages

- ▶ Mothers of young infants were most likely to frequently discuss infant feeding with their own mothers, other friends, and relatives. Convincing older women in the community that exclusive breastfeeding should be practiced may be a means to encourage changes in breastfeeding among younger mothers.
- ▶ Radio reaches a high proportion of women and may be a means to reinforce messages at a community level.
- ▶ Midwives were seldom contacted for advice on infant feeding. At this time, developing an active role for them in improving infant feeding may not be appropriate. However, they play an important role in encouraging use of colostrum and early initiation of breastfeeding and discouraging the use of *suero*, *chupon*, sugar water, and other breastmilk substitutes.



CHAPTER 7. MORBIDITY

Prevalence of Illnesses

On the day preceding the survey, 21% of all infants had been ill. The most frequent illnesses were acute respiratory illness (ARI¹⁶) (56%), fever (19%), and diarrhea (14%). The proportion of infants ill with ARI on the *preceding day* was 12% but the proportion ill with diarrhea was only 3% (Table 33). The proportion of sick infants increased from 12% for infants ages less than one month to 26% for infants five months of age. Colic was reported in 15% of infants on the preceding day, but it was not related to whether the infant was breastfed or not, nor to the infant's age.

The proportion of all infants ill *in the last two weeks* was 65% for ARI and 29% for diarrhea. Table 34 shows that older infants have a higher prevalence of illness in the last two weeks than younger infants: 20% of infants less than one month of age had diarrhea compared to 37% for infants five months of age, and 44% were ill with ARI compared to 78%. The proportion of children who had both ARI and diarrhea during the last two weeks was 21%.

Treatment of Illness

Only 2% of mothers of infants sick with ARI or diarrhea in the last two weeks reported stopping breastfeeding because of the illness. Eighty (80%) of infants sick with ARI during the last two weeks and 58% of those with diarrhea had been given some form of treatment by their mothers. Mothers were more likely to treat older infants than younger infants, both for diarrhea and ARI (Table 35).

Table 36 shows that the treatments given to infants for ARI were most commonly syrups (51%), pills (27%), and medicinal plants and tea (11%). Other treatments (11%) included nasal drops (3%), rubs (2%), injections (1%), and oils/fats (1%).

Among infants ill with diarrhea, 13% had been given Litrosol (oral rehydration packet solution). More commonly given were pills (25%) or syrups (38%). Medicinal plants and tea were given to 10% of sick infants. Other treatments given included laxatives (2%), injections (2%), and rubs (1%). Litrosol was given more and medicinal plants were given less to infants ages two or more months than younger infants.

Illness	% ill in last 24 hours	% ill in last 2 weeks
ARI	12%	65%
Diarrhea	3%	29%
Fever	4%	.*
Other	3%	.*
Not ill	79%	27%**
n	1519	1522

* Only ARI and diarrhea were included among the illnesses reported during the last two weeks.

** Not ill with either diarrhea or ARI in the last two weeks.

¹⁶ ARI is defined in this report as cough or cold for the last two weeks and cough, cold, or sore throat for the last 24 hours.



Age	% ill with ARI	% ill who were treated for ARI	% ill with diarrhea	% ill who were treated for diarrhea	n
< 1 mo.	44%	59%	20%	42%	239
1 mo.	59%	74%	25%	43%	269
2 mo.	59%	76%	27%	59%	235
3 mo.	70%	89%	32%	64%	249
4 mo.	77%	83%	33%	63%	251
5 mo.	78%	88%	37%	65%	279
All	65%	80%	29%	58%	1522
p	<0.001	<0.001	<0.001	<0.01	

Treatment	Age < 2 months	Age 2-3 months	Age 4-5 months	All
Syrups	35%	28%	23%	28%
Pills	29%	51%	62%	51%
Medicinal plants/tea	18%	11%	7%	11%
Other	16%	10%	8%	11%
Total %	98	100	100	101 (p<0.001)
n	179	261	351	791

Treatment	Age < 2 months	Age 2-3 months	Age 4-5 months	All
Litrosol	6%	15%	14%	13%
Syrups	45%	34%	38%	38%
Pills	8%	27%	30%	25%
Medicinal plants/tea	20%	10%	5%	10%
Other	20%	14%	14%	15%
Total %	99	100	101	101 p <0.05
n	49	88	118	255



Relationship of Illness with Socioeconomic Status

The reported prevalence of illness was highly correlated with socioeconomic status, measured by mother's education or wealth. Infants in poorer families were reported to be sick more often than those in richer families. Diarrhea but not ARI was higher among rural households than urban households (Table 37).

Improved water and sanitation was also associated with fewer reports of illness in infants (Table 38). However when socioeconomic status was controlled, water and sanitation were no longer associated with the prevalence of illness.

Relationship of Illness with Feeding Practices

Because rates of illness increase as infants become older and socioeconomic status is associated with both illness rates and breastfeeding, it is important to control for age and socioeconomic status when examining the association of feeding practices with illness. However the sample sizes become quite small so that this association can not be examined for illnesses during the preceding day.

Table 39 shows that there is no statistically significant relationship between current breastfeeding status and the prevalence of ARI or diarrhea during the last two weeks when wealth was controlled, except one case (children 4-5 months of age at medium wealth). When so many statistical tests are run as in Table 39, it is not surprising that one comparison group is significant as this is likely to occur by chance. The small sample sizes for many of the cells included in this table observed once both age and wealth are controlled make it difficult to be confident of statistical relationships.

Similarly, there was also no statistically significant relationship when mother's education and infant's age were controlled, nor when examining the relationship of *ever use* of other liquids, cow's milk, or solids with illness rates.

Numerous longitudinal surveys have shown that exclusive breastfeeding protects against diarrhea and ARI among young infants compared to predominantly breastfed infants, those receiving breastmilk and cow's milk or those not breastfed.¹⁷ Such studies have been able to more carefully define an episode of ARI and diarrhea and to include periods of illness greater than a single two week period during the year.¹⁸ It is thus not surprising that this cross-sectional survey did not show statistically significant relationships between feeding patterns and illness levels. However given that the direction of the relationship for diarrhea and infant feeding was in the opposite direction from that expected, one can speculate as to why this pattern may have occurred. Infants who receive other milks or solids have thicker and drier stools because the constituents in breastmilk are more easily absorbed than those in cow's milk and solid foods. Stools of infants receiving these other foods contain these unabsorbed constituents and thus are thicker. Mothers of exclusively breastfed infants might be more likely to report that their infants have diarrhea, especially if the questionnaire did not specify a definition for diarrhea (such as more than four liquid stools per day). Further research in the field is needed to determine mother's beliefs about diarrhea and their perceptions as to when children have diarrhea. This will be important especially for programs addressing diarrhea disease illnesses in young infants.

¹⁷ M. Beaudry-Darisme et al. *Journal of Pediatrics* 1995; 126(2): 191-197.



Table 37. Relationship of illness in the last two weeks with socioeconomic status				
Socioeconomic status	% ill with ARI	n	% ill with diarrhea	n
Wealth		p<0.001		p<0.001
High	62%	508	27%	508
Medium	64%	510	33%	512
Low	69%	503	40%	502
Mother's education		p<0.001		p<0.001
Grad high school	55%	121	14%	121
Some high school	54%	149	23%	149
Grad. elementary	64%	535	26%	534
Some elementary	71%	608	36%	610
None	62%	106	35%	106
Residence		n.s.		p<0.001
Urban	65%	779	25%	779
Rural	65%	742	33%	743

Table 38. Percent of infants ill in the last two weeks by water/sanitation				
	% ill with ARI	n	% ill with diarrhea	n
Water supply		p<0.01		p<0.01
Faucet in house	59%	527	23%	528
Faucet on premises	67%	727	32%	727
Well	68%	99	30%	99
Other	72%	167	36%	167
Sanitation		p<0.05		p<0.001
Toilet	61%	647	24%	648
Hydraulic latrine	68%	351	31%	51
Pit latrine	67%	308	30%	308
Open air	71%	215	40%	215

Table 39. Percent of infants ill in last two weeks by infant's age, breastfeeding practices and wealth						
ARI	ARI			Diarrhea		
	High Wealth	Medium Wealth	Low Wealth	High Wealth	Medium Wealth	Low Wealth
0-1 mo.	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Exclusively breastfed	56% (36)	49% (41)	52% (54)	22% (36)	29% (42)	22% (54)
Predominantly breastfed	36% (36)	52% (52)	50% (48)	14% (36)	25% (52)	31% (48)
Breastfed w/milk/solids	55% (86)	48% (62)	60% (58)	14% (86)	24% (62)	22% (58)
Not breastfed	53% (15)	NA (9)	NA (7)	27% (15)	NA (9)	NA (7)
n	173	164	167	173	165	167
2-3 mo.						
Exclusively breastfed	64% (11)	60% (15)	82% (17)	36% (11)	33% (15)	41% (17)
Predominantly breastfed	54% (35)	59% (46)	66% (32)	23% (35)	30% (46)	53% (32)
Breastfed w/milk/solids	68% (91)	63% (95)	74% (80)	22% (91)	21% (96)	45% (80)
Not breastfed	52% (31)	65% (17)	69% (13)	19% (31)	24% (17)	23% (13)
n	168	173	142	168	174	142
4-5 mo.						
Exclusively breastfed	NA (4)	NA (5)	NA (9)	NA (4)	NA (5)	NA (9)
Predominantly breastfed	65% (20)	81% (32)	68% (31)	55% (20)	47%* (32)	48% (31)
Breastfed w/milk/solids	74% (101)	79% (107)	83% (116)	27% (101)	38%* (107)	35% (115)
Not breastfed	71% (42)	82% (27)	71% (35)	31% (42)	19%* (27)	34% (35)
n	167	171	191	167	171*	190

NA=n<10, *Cross-tabs comparing percentages sick or well within each age group, breastfeeding category, and each level of wealth p<0.05; all others n.s.



Preventive Child Health Services

By the fifth month of life, nearly all infants had been taken to health services to be vaccinated (Table 40), but only one-third (30%) had ever had been taken for a well child visit or to have their growth checked. Less than half (40%) had ever been taken to health services due to illness. Older children were generally more likely to have been taken than younger children. Only 30% of mothers had ever been counseled during any of these visits about breastfeeding.

Age of infant	% ever vaccinated	% who ever took infant for a well child visit	% who ever sought treatment for infant's illness
<1 mo.	23%	17%	14%
1 mo.	34%	29%	29%
2 mo.	73%	38%	35%
3 mo.	90%	44%	46%
4 mo.	91%	42%	53%
5 mo.	95%	33%	59%
All	68%	34%	40%
n	1521	1521	1520
p value	<0.001	<0.001	<0.001

Use of child health services was negatively associated with breastfeeding practices (Table A-14) even after controlling for wealth.

Tables A-15 and A-16 summarize use of women's and children's health services, and breastfeeding practices within each UPS. While the study design does not allow statistically valid results for differences in practices by UPS, these tables can give a rough illustration of practices in each UPS.



CHAPTER 8. BREASTFEEDING AND FAMILY PLANNING

Only two breastfeeding mothers (0.2%) were pregnant (out of 1282 women), but 2% of the not breastfeeding mothers were pregnant (2%). This again shows the importance of breastfeeding in preventing pregnancy due to its impact on extending the duration of postpartum amenorrhea and associated reduced probability of ovulation.

Amenorrhea and Breastfeeding

Table 41 shows the role breastfeeding has in delaying the onset of menses during the postpartum period by comparing the proportion of women who are amenorrheic by their current breastfeeding status. By the fifth month, 93% of non-breastfeeding women had resumed menses compared to only 39% of those breastfeeding.

This pattern remained even when women on the pill were excluded from the analyses.¹⁹ Older women had higher rates of amenorrhea than younger women (Table 42).

The type of breastfeeding was highly correlated to whether menses had resumed (Table 43). Women who were currently exclusively breastfeeding were much more likely than predominantly breastfeeding women to be amenorrheic (93% vs. 81%). Women who gave milks or solids in addition to breastmilk were less likely to be amenorrheic (53%). Ever use of other liquids in addition to breastmilk shows an even greater effect. Out of 70 women who reported that they had given only breastmilk to their infants, only three (4%) had resumed menses. One of these women was only in the first postpartum month, where vaginal postpartum bleeding can not be distinguished from a menses. Thus in this population, as in others, exclusive breastfeeding is a strong deterrent to being capable of conceiving in the first six months postpartum.

One third (34%) of the respondents had heard that breastfeeding helps prevent pregnancy, but of these, only 29% believed it. Of those who had heard of its effect, 60% reported that what had to be done was "to breastfeed," and 32% reported that "exclusive breastfeeding was necessary." Only 3% reported that menses "could not have resumed."

Duration postpartum	Breastfeeding	Not breastfeeding	p value
<1 mo.	94% ..	100% ..	n s
1 mo.	84%	78%	n.s.
2 mo.	77%	46%	<0.001
3 mo.	68%	12%	<0.001
4 mo.	66%	9%	<0.001
5 mo.	61%	7%	<0.001
All	76%	26%	<0.001
n	1323	193	<0.001

¹⁹ Women could have initiated pill use prior to resumption of menses, although this is not the normal routine promoted by health services. Pill use would cause menses to resume in amenorrheic women.



Mother's age	Percent amenorrheic	n
<20 yrs.	70%	311
20-24	73%	417
25-29	76%	310
30-34	83%	180
35-39	88%	77
40+	81%	26
	p<0 .01	1321

Duration postpartum	Exclusively breastfeeding	Predom. breastfeeding	Breastfeeding w/milk or solids	Not breastfeeding	p value
Current breastfeeding practice					
0-1 mo.	92%	90%	86%	84%	n.s.
2-3 mo.	88%	80%	67%	27%	<0.001
4-5 mo.	83%	68%	62%	8%	<0.001
All	91%	81%	53%	26%	<0.001
n	193	330	796	193	
Ever use of other liquids/solids and breastfeeding					
0-1 mo.	97%	93%	85%	84%	<0.05
2-3 mo.	NA	91%	69%	27%	<0.001
4-5 mo.	NA	67%	64%	8%	<0.001
All	96%	90%	71%	26%	<0.001
n	70	239	1014	193	

NA (Data not given because n < 10).



Nearly twice as many wealthy women as poorer women (46% v. 25%) had heard about breastfeeding's impact on pregnancy and three times as many highly educated women as those with no education had heard of this effect (59% v. 19%). Urban women were also more likely than rural women to know of its impact (40% v. 28%).

Breastfeeding practices were unrelated to women's knowledge of or belief in the fertility reducing impact of breastfeeding.

Use of Contraceptives

Out of all the survey women, only 19% used contraception. By the fifth month postpartum, 53% of non-breastfeeding women but only 26% of breastfeeding women were using contraception (Table 44). This in part may be due to women waiting until they have resumed menses to start using family planning. Of amenorrheic women, only 11% used contraception compared to 37% of those whose menses had already resumed.

The use of contraception was highly correlated to socioeconomic status: one-fourth (24%) of wealthier women used contraception compared to 14% of poorer women. Urban women were more likely than rural women to practice family planning and women with higher education were much more likely than those with less education to be users. Teens were less apt than older women, except for those over age 40, to use contraception.

Once socioeconomic status and postpartum duration were controlled, there was no relationship between the type of breastfeeding (exclusive, predominant, or other) and use of contraception.

Table 45 lists the types of contraceptives used by the 19% of women who practiced family planning. Oral contraceptives and tubal ligation were the most common methods. Only one woman reported using breastfeeding for its contraceptive effect and only one partner had a vasectomy.



Table 44. Characteristics of women using contraception			
Characteristic	% Using contraception	n	p
Breastfeeding status			<0.001
Breastfeeding	17%	1313	
Not breastfeeding	39%	191	
Amenorrhic status			<0.001
Amenorrhic	11%	1040	
Not amenorrhic	37%	460	
Wealth			<0.001
High	24%	501	
Medium	20%	507	
Low	14%	496	
Residence			<0.001
Urban	23%	770	
Rural	15%	734	
Educational level			<0.001
Grad. high school	39%	118	
Some high school	21%	145	
Grad. elementary	19%	531	
Some elementary	17%	605	
None	14%	104	
Age			<0.001
<20 yrs.	14%	348	
20-29	20%	829	
30-39	25%	295	
40+	7%	30	

Table 45. Types of contraception used according to socio-demographic status						
Socioeconomic status	Pills	Intra-uterine device (IUD)	Tubal ligation	Condom	Other	n
Breastfeeding status						p<0.001
Breastfeeding	27%	22%	35%	8%	8%	204
Not breastfeeding	62%	5%	18%	8%	7%	74
Amenorrhic status						p<0.01
Amenorrhic	17%	14%	50%	9%	10%	108
Not amenorrhic	49%	20%	17%	8%	7%	169
Wealth						n.s.
High	31%	19%	29%	11%	10%	115
Medium	39%	16%	30%	10%	5%	94
Low	41%	16%	33%	1%	9%	69
Residence						p<0.05
Urban	31%	22%	30%	8%	9%	170
Rural	45%	9%	31%	9%	6%	108
Educational level						p<0.01
Grad. high school	29%	16%	18%	27%	11%	45
Some high school	33%	27%	23%	7%	10%	30
Grad. elementary	35%	18%	31%	6%	11%	95
Some elementary	43%	16%	34%	3%	4%	35
None	33%	8%	58%	-	-	12
Age						p<0.001
<20 yrs.	62%	27%	-	7%	4%	45
20-29	39%	17%	26%	9%	9%	161
30-39	13%	13%	59%	9%	7%	70
40+	NA	-	NA	-	-	2

NA = n < 10.



Breastfeeding women were more likely than non-breastfeeding women to use tubal ligation and intra-uterine devices (IUDs), while non-breastfeeding women were more likely to use oral contraceptives. Amenorrheic women were also more likely to have been sterilized and menstruating women were more likely to use oral contraceptives.

For women with no education, 58% were sterilized compared to 18% of those with education beyond high school. Younger women were more apt than older women to use pills. Urban women used IUDs more and rural women used pills more. There was no relationship between wealth and types of contraceptives used. There was also no relationship between postpartum duration and type of contraception used once tubal ligations were excluded from the analyses. In the first two months of life, of the women reporting method use, more women (42%) used tubal ligation than in other months (34% at 2-3 months and 24% at 4-5 months). We assume that this may be due to the timing that they are performed (often either immediately following delivery or at six weeks postpartum). As postpartum duration increased, women have more opportunity to use other forms of contraception.

The relatively low use of contraception in this population is not surprising given that only 10% of women who attended postpartum check-ups were counseled about birth spacing during their check-ups.



CHAPTER 9. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This survey provides the baseline information needed to evaluate future breastfeeding promotion efforts in this site. The two areas of El Progreso and Puerto Cortés are quite similar in terms of initial breastfeeding rates. Comparing these rates and factors associated with them after the intervention has been implemented will provide a means to assess program impacts.

Table 46 summarizes the characteristics of women with different breastfeeding patterns. These profiles illustrate the factors that can be addressed by program interventions.

Factors Associated with Not Breastfeeding

More women in this study had stopped breastfeeding by six months postpartum (22%) than those in the rest of Honduras (12%).²⁰ The first two months postpartum is when the majority of women in the study stopped breastfeeding. If such women could be helped to continue breastfeeding for at least the first 60 days, they will likely continue breastfeeding for a longer duration.

The most common reason for stopping was that the baby did not want the breast (33%) and more non-breastfeeding women (31%) reported that flat nipples was a problem for them than breastfeeding women (13%). However out of the total sample, only 3% reported not breastfeeding due to the baby not wanting the breast. Focusing program efforts to address such “lactation management” problems is probably not an efficient use of limited resources.

The other major reason given for not breastfeeding was because of insufficient milk (21%). Mothers may have introduced other liquids because they perceived that infants were not getting sufficient milk. The introduction of other liquids would lead to a reduced frequency of suckling and an associated decrease in milk output. Because as discussed below, insufficient milk is also a common reason for introducing cow’s milk to breastfed infants, addressing the issue of insufficient milk is paramount to both increasing the proportion of women who are breastfeeding in the first six months and the proportion fully breastfeeding.

Encouraging mothers to increase their frequency of feeding and their duration may help reduce the frequency of insufficient milk. Mothers who exclusively breastfeed have a higher frequency of feeding than those giving other milks. However it will be necessary to address whether mothers who report insufficient milk believe it is *feasible* for them to breastfeed more frequently than they currently do, given their other responsibilities within the household and also to address the development of strategies that may help them to carry out these responsibilities, since they are perceived as important.

Factors Associated with Feeding Cow's Milk to Infants

The first two months is also the time when most mothers who gave their infants cow’s milk started to do so. At the age 0-29 days of life, 33% of breastfed infants had been fed cow’s milk on the day preceding the study and 41% had ever had cow’s milk. By 30-59 days of life, half had been fed cow’s milk on the day preceding the study and 77% had ever received cow’s milk. It is thus essential to help women delay the introduction of cow’s milk in the first two months.

²⁰ Family Health Survey, 1991. p. 197.



	Exclusively breastfeeding mother	Breastfeeding and giving cow's milk	Not breastfeeding
Why feeds this way	--	-Gives milk to keep baby full -Gives water because baby is thirsty/hot or needs it. -Give liquids to "get the baby used to it"	-Stopped breastfeeding because baby did not want the breast; -and because of insufficient milk
When changed	--	Added water and other liquids in first month, milk in second mo.	Stopped breastfeeding in first two months
Intra-partum practices	--	Infant given <i>suero</i>	Infant given <i>suero</i>
Sleeping pattern	Sleeps with infant	Sleeps with infant	Does not sleep with infant
Chupon Use	Less <i>Chupon</i> use	Used <i>Chupon</i>	Used <i>Chupon</i>
Problems breastfeeding	Few problems	Insufficient milk	-Insufficient Milk -Flat nipples
Demand/scheduled feeding	Feeds on demand	May feed by schedule	--
Working patterns	Least likely to usually work (1/3 usually work)	More likely to work (1/2 usually work)	Most likely to usually work (2/3 usually work)
Has returned to work	Least likely to have returned to work	More likely to have returned to work (1/2 of those usually working have returned)	Most likely to have returned to work (3/4 of those usually working have returned to work)
Average number of breastfeeds per day (24 hours)	Ten	Eight	--
Pregnancy Risk (at 4-5 months postpartum)	83% amenorrheic	62% amenorrheic	8% amenorrheic
Proportion of women using contraception	9%	21%	39%

The major reasons for giving breastfed infants cow's milk was to keep the baby full (29%) or insufficient milk (11%). The issue of why mothers think that their babies *are not full* needs to be explored. Is it because they can not or do not want to breastfeed at certain times and thus need to feed other milks in place of breastmilk to fill



them up? Or is it that when they breastfeed they perceive that their infants are not full? The implications for interventions will be quite different depending on the reasons.

Why mothers' perceive that their infants receive insufficient quantities of breastmilk also needs to be addressed. The primary reasons given for why mothers believed they had insufficient milk included that their babies cried after nursing (37%) and that they did not feel the milk release (31%). When babies cry after nursing they are likely to still be hungry or want to suck. Mothers of such infants need to be encouraged to breastfeed more frequently to increase their milk supply and not to give other liquids to their infants since that can interfere with the needed suckling. Such encouragement will need to be based on determining whether mothers believe *it is feasible* to breastfeed more frequently, and if not, what they need to be able to do so (e.g., more help with household chores, help with child care, etc.).

Teaching mothers that they can produce sufficient milk even though they do not feel the milk release is another important message. After the first month of life, often there is little sensation of milk release, especially if the mother is breastfeeding frequently. Advice can be given to look for other more appropriate signals for adequate milk supply (such as number of wet diapers or in conjunction with growth monitoring to show that the babies are receiving sufficient breastmilk).

Factors Associated with Feeding Infants Waters, Tea, and Juices

The high proportion of infants fed liquids in addition to breastmilk in the first two months is problematic both for the increased risk of infection and for the impact on reducing frequency of suckling and thus reduced breastmilk output. At the age 0-29 days of life, 38% of breastfed infants had been fed water, 25% sweetened water, and 7% tea on the day preceding the study and 74% had *ever* been fed any of these. By 30-59 days of life, 51% of all breastfed infants had been fed water, 23% sweetened water, 7% tea, and 11% juice on the day preceding the study and 87% had *ever* received any of these.

Mothers reported feeding water to their infants in the first month of life primarily because infants were thirsty or hot (32%) or had hiccoughs or gas (28%). In the second month, being thirsty or hot (36%) was still important. Other reasons included babies needing it (17%), advice received (17%), or hiccoughs and gas (14%). Since these reasons differ somewhat from the reasons given for other liquids (discussed below), it may be necessary to develop messages specific to preventing use of water. Messages to be tested could suggest increasing frequency of breastfeeding for thirsty babies, mothers can drink water if they are thirsty, but babies should not have water. It is important to stress *not have water* instead of receive only breastmilk (*solo pecho*) because *solo pecho* means not giving cow's milk, but one can still be giving *solo pecho* and give water.

Mothers reported feeding other liquids such as sweetened water, teas, and juices to their infants in the first month because of insufficient milk (14%) or to keep the baby full (11%), in addition to the baby being thirsty or hot (10%) and having hiccoughs/gas (9%). At 30-59 days of life, the major reasons to give other liquids were as a medicine (22%), to get the baby used to it (16%), and because the baby was thirsty or hot (13%).

Insufficient milk may have decreased as a reason as the child aged because mothers may have given their infants milk instead of other liquids by the second month of life because of their concerns for insufficient milk. Mothers may first try to give liquids to keep the baby from being hungry and when this does not work, they may shift to cow's milk. Thus focusing efforts on preventing use of other liquids may also be a means to prevent the addition of cow's milk. Encouraging mothers to breastfeed more frequently rather than feeding liquids is an important message, but understanding the constraints mothers have to this will again be essential before such messages can be promoted.

It will also be necessary to explore the belief that babies need to get used to other liquids. Why do mothers report this as important? Does the use of liquids allow mothers to be separated from their infants and have others care for them? What will mothers need to be convinced that infants do not need to get used to other liquids?

The use of other liquids as a medicine also needs to be understood. What purpose are they serving and how can this be met through means other than giving liquids to the infant?

Factors Associated with Community-based Activities

Mothers of young infants were most likely to frequently discuss infant feeding with their own mothers, other friends, and relatives. Including older women in the community in support groups or training them to be breastfeeding counselors may be a successful strategy for improving breastfeeding practices. Few mothers had been contacted about breastfeeding by a community worker. The MOH and LLL/H intervention that is training community level volunteers will, if successful, increase dramatically the amount of trained community support that mothers receive.

Since infants who sleep with their mothers have better infant feeding practices than those who sleep separately, encouraging mothers to sleep with infants may be useful. Counselors can be taught to point out the advantages of this pattern for convenience in feeding infants by mothers being able to breastfeed without getting out of bed. However they should also discuss the importance of the husband or partner being involved in this and other breastfeeding decisions so that partners will encourage breastfeeding.

Counselors will need to be taught to use a different term than *solo pecho* when talking to mothers, since this only addresses the use of other milks. They need to emphasize that waters and other liquids **not** be given to infants.

Nearly two-thirds of infants were given *chupon* even if they were born in a hospital. There was no association with wealth or mother's educational level with *chupon* use, however urban women were slightly less likely to give *chupon*. Exclusively breastfeeding mothers gave *chupon* less than other mothers. Counselors need to discourage this practice because it may inhibit optimal breastfeeding and because of its likely impact on putting infants at risk of infection. Reasons why mothers give *chupon* will need to be explored to determine appropriate messages.

The high rates of ARI and diarrhea among young infants and the low usage of health services is a concern. Counselors need to work closely with health services and refer sick infants for treatment. An effective referral and counter-referral system will need to be developed. The low rates of contraceptive use among amenorrheic women suggest the need to refer such women for family planning services. Additionally, few women understand the components needed for successful use of the lactation amenorrhea method²¹ (LAM) and most do not believe in its effectiveness. Since other studies have shown that LAM can increase rates of exclusive breastfeeding because mothers see a direct benefit for themselves, informing women about LAM may help improve optimal breastfeeding rates. Counseling women during antenatal contacts and reinforcing them during the perinatal and neonatal period will be important for LAM as well as for general breastfeeding messages.

Factors Associated with Health Services

Use of pre-natal care was not related to breastfeeding practices while use of postpartum or child health services was negatively associated with breastfeeding practices. While in urban areas, delivery site or attendee was not related to breastfeeding, in rural areas mothers who delivered at hospitals were more likely than those who delivered at home to not be breastfeeding or to have introduced milk. More training of health workers in how to counsel mothers on breastfeeding would probably be beneficial.

One-third of mothers who attended prenatal visits, half of those who attended postpartum visits and one-third of those attending child health services were advised to breastfeed. Increasing this proportion should be a goal and counseling about the need for frequent effective suckling should be the focus of the advice.

²¹ Less than six months postpartum, amenorrheic, and exclusively breastfeeding.



Only one-third of non-amenorrheic women were using contraception, but only 10% of mothers had been counseled about birth spacing during a postpartum visit. Mothers need to be counseled about the importance of child spacing for their own and their infant's health and referred to family planning services.

Suero (glucose water) is at times given at birth, both in hospitals (21%) and in the community (11%). This practice should be restricted because it is associated with a reduction in breastfeeding. Nearly one-third of non-breastfeeding mothers of infants born in the hospital had been given *suero* compared to 7% of exclusively breastfeeding mothers. For infants born at home, 28% of non-breastfeeding mothers had been given *suero* compared to 4% of those exclusively breastfeeding.

Recommendations

The information on factors related to variations in breastfeeding can be used to develop program strategies to improve breastfeeding practices. The following recommendations will need to be tested in the field. They include general program recommendations, recommendations focused on community-based activities and recommendations for health services.

General Program Recommendations

- ❶ Emphasize counseling during pregnancy and during the first two months postpartum.
- ❷ Address concerns for keeping the baby full and for insufficient milk in order to prevent use of cow's milk.
- ❸ Discourage the use of waters, teas, and juice.

Recommendations for Community-based Activities

- ❹ Include older women in support groups and as counselors.
- ❺ Assess reasons why some mothers sleep with their infants and others do not.
- ❻ Review the use of the term "*solo pecho*" when talking about exclusively breastfeeding in the communications plan.
- ❼ *Chupon* use should be discouraged.
- ❽ Referrals to health services should be given to mothers by counselors for illness treatment, preventive child health services, and birth spacing.

Recommendations for Health Services

- ❾ Counseling of mothers on infant feeding and birth spacing should be take place during prenatal, antepartum, postpartum, child health services.
- ❿ Use of *suero* (glucose water) for newborns should be avoided by staff in health services and by midwives in the community.
- ⓫ Radio and television could be used to deliver communication messages to the community.



Recommendations for Future Evaluations

Sample Selection

Because this baseline sample was not a random sample of Region 3, the follow-up survey should be conducted within the same two health areas. The original design called for returning to the same communities to conduct the follow-up survey. The advantages to revisiting the same communities is that one is able to control for the urban/rural nature of the area, and to exclude the same remote villages. A subsequently taken random sample could end up with a different composition of isolated areas or the inclusion of a different proportion of urban areas. For example, in this sample, all infants in Puerto Cortés were selected, but another sample might not include all of them.

The field work for the baseline was quite extensive because over 25,000 households had to be visited to locate the 1523 infants. A system for streamlining this process should be discussed with the local investigators and maps of the communities secured in a safe place until the follow-up survey is conducted.

Location of Eligible Households

A system needs to be developed to assess children's ages in the field so that all children under age six months are included. This could include developing a list for each day of interview that includes the dates of births eligible for that day rather than relying on mother's reports for the age of her youngest child.

Questionnaire to Be Used

The questionnaire used in this study could be revised and shortened somewhat in the follow-up survey. The date of interview needs to be coded on all forms. Most mothers only gave one response to questions although there were spaces to code up to three responses (e.g., on source of advice) and thus eliminating the multiple responses would enable the administration of the questionnaire to be less complicated. A code was available for whether mothers hesitated on giving information on their beliefs, but few ever hesitated, so this observation will not be needed. The skip pattern for questions about insufficient milk needs to be corrected. Since mothers are unable to distinguish between powdered milk and infant formula, these questions should be combined.

Timing of the Follow-up Survey

The most important decision for the follow-up survey is when it should take place. This needs to be determined by whether the community based peer counseling activities are functioning in a substantial proportion of the communities in El Progreso. If only a few counselors are still active or if the supervision system is not well in place, conducting a follow-up survey will have little use. Thus some means to assess the reach of the program should be conducted prior to implementing the large follow-up survey. This can be done through the sentinel monitoring system as described in Chapter 2 or perhaps through some other means such as through information collected from the monitoring system used by LLL/H.

Because of the seasonality of childhood illness such as ARI and diarrhea, it will be useful to conduct the survey in the same season if possible.



APPENDIX 1: ADDITIONAL TABLES



Marital status	El Progreso	Puerto Cortés	Total	p value
Married	90% (n=203)	94% (n=165)	92% (n=368)	ns
Companion	91% (n=440)	88% (n=405)	89% (n=845)	ns
Single	12% (n=147)	25% (n=146)	18% (n=293)	<0.01
All	75% (n=801)*	76% (n=719)*	76% (n=1520)*	ns

* "n"s do not equal the total of the three listed categories because the "All" category includes widowed, divorced, or separated women.

	El Progreso	Puerto Cortés	Total	p value
Infants < six months			(n=1518)	n.s.
Never breastfed	3%	5%	4%	
Not currently breastfed	12%	14%	13%	
Exclusively breastfed	13%	12%	13%	
Bfed with water/teas	21%	23%	22%	
Bfed with milk/solids/other	54%	51%	53%	
WHO indicators (< four months)			(n=989)	n.s.
Any breastfeeding	92%	89%	91%	
Exclusively breastfed	19%	16%	18%	
Predominantly breastfed	25%	26%	25%	
Fully breastfed	44%	42%	43%	

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Age of Infant	Breastfed					Non-breast-fed
	Breast-milk + other liquids	Breast-milk + other liquids + solids	Breast-milk, + cow's milk + liquids	Breast-milk, cow's milk + solids	All breastfed infants **	All non-breast-fed infants
<30 days (0 mo.)	(n=49)	(n=6)	(n=32)	(n=3)	(n=230)	(n=8)
Water	59%	*	78%	*	38%	-
Sweet. water	77%	*	59%	*	25%	-
Tea	27%	*	9%	*	7%	-
Juice	6%	*	9%	*	3%	-
Soup	0%	*	0%	*	2%	-
Coffee	0%	*	0%	*	0%	-
Other	10%	*	3%	*	3%	-
Cow's milk	-	-	100%	-	31%	-
30-59 days (1 mo.)	(n=34)	(n=8)	(n=74)	(n=10)	(n=246)	(n=23)
Water	62%	*	89%	*	51%	61%
Sweet. water	71%	*	37%	*	23%	25%
Tea	15%	*	14%	*	7%	0%
Juice	35%	*	16%	*	11%	17%
Soup	6%	*	0%	*	5%	4%
Coffee	0%	*	0%	*	0%	0%
Other	3%	*	6%	*	3%	0%
Cow's milk	-	-	100%		50%	



Table A-3. Percent of infants receiving other liquids on the preceding day						
Breastfed						Non-breast-fed
Age of Infant	Breast-milk + other liquids	Breast-milk + other liquids + solids	Breast-milk, + cow's milk + liquids	Breast-milk, cow's milk + solids	All breastfed infants **	All non-breast-fed infants
60-89 days (2 mo.)	(n=22)	(n=20)	(n=61)	(n=22)	(n=209)	(n=26)
Water	64%	75%	92%	82%	67%	77%
Sweet. water	55%	*	25%	27%	17%	35%
Tea	27%	*	8%	18%	9%	19%
Juice	32%	*	21%	46%	17%	23%
Soup	0%	*	2%	55%	9%	15%
Coffee	0%	*	2%	18%	2%	0%
Other	18%	*	5%	18%	7%	12%
Cow's milk	-	-	100%	100%	50%	96%
90-119 days (3 mo.)	(n=21)	(n=39)	(n=60)	(n=30)	(n=214)	(n=35)
Water	86%	74%	90%	83%	74%	80%
Sweet. water	57%	28%	25%	33%	17%	29%
Tea	5%	10%	7%	7%	5%	11%
Juice	33%	36%	23%	30%	21%	34%
Soup	14%	41%	0%	47%	15%	17%
Coffee	0%	3%	0%	0%	1%	0%
Other	10%	5%	7%	10%	5%	17%
Cow's milk	-	-	100%	100%	50%	100%



Table A-3. Percent of infants receiving other liquids on the preceding day						
Age of Infant	Breastfed					Non-breastfed
	Breast-milk + other liquids	Breast-milk + other liquids + solids	Breast-milk, + cow's milk + liquids	Breast-milk, cow's milk + solids	All breast-fed infants **	All non-breast-fed infants
120-149 days (4 mo.)	(n=25)	(n=58)	(n=26)	(n=55)	(n=208)	(n=43)
Water	84%	85%	96%	87%	81%	86%
Sweet. water	36%	24%	19%	29%	21%	19%
Tea	16%	12%	4%	9%	8%	7%
Juice	28%	26%	15%	24%	19%	26%
Soup	8%	36%	0%	51%	25%	14%
Coffee	0%	5%	8%	11%	6%	7%
Other	16%	16%	4%	9%	9%	16%
Cow's milk	-	-	100%	100%	42%	100%
150-179 days (5 mo.)	(n=12)	(n=80)	(n=22)	(n=72)	(n=218)	(n=62)
Water	*	90%	9%	83%	85%	86%
Sweet. water	*	13%	5%	13%	11%	21%
Tea	*	4%	0%	7%	4%	8%
Juice	*	33%	23%	33%	28%	44%
Soup	*	33%	0%	33%	24%	42%
Coffee	*	11%		11%	8%	7%
Other	*	15%	18%	15%	13%	16%
Cow's milk	-	-	100%	100%	46%	93%

** Includes infants exclusively breastfed and breastfed infants fed only fed water or cow's milk.; When sample sizes are twenty or less, data are not reported. This table shows that it is not appropriate to compare all breastfed infants to non-breastfed infants, because this obscures the differences associated with the different breastfeeding patterns. Also this table shows that because of changing patterns by age, the data need to be disaggregated by the child's age in order to develop appropriate recommendations.



Table A-4. Types of milk fed to infants on the preceding day					
Fresh Cow's Milk		Powdered Cow's Milk		Infant Formula	
Name	n	Brand	n		
Fresh milk (generic)	61	Ceteco	199	Enfamil	150
Sula	14	Anchor	52	Nan 1	64
La Pradera	6	Milex	6	Nan 1	33
Leyde	4	Klim	1	Nan 2	3
La Pura	3	Nido	0	Nestogen	12
Noble	1			Similac	11
Dos Pinos	4			Isomil	6
				Prosoybee	5
				Nenetal	3
				Enfalac	2
Total (n=640)*	93		258		289
Percent (100%)	15%		40%		45%

* 11 infants were fed two different types of milk (3 were fed fresh milk and infant formula and 8 were fed fresh milk and powdered milk).



Table A-5. Percent of breastfed infants fed solids on the day preceding the survey

Infant's age	Breastfed Infants fed liquids and solids but no cow's milk	Breastfed Infants fed liquids, solids and cow's milk	Non-breastfed Infants
90-119 days (3 mo.)	(n=39)	(n=30)	(n=35)
Soup	53%	53%	20%
Fruit	21%	33%	9%
Bread/Tortillas	21%	10%	0%
Rice/Beans	34%	27%	9%
Vegetables	36%	27%	9%
Other	3%	10%	3%
120-149 days (4 mo.)	(n=58)	(n=55)	(n=43)
Soup	47%	53%	16%
Fruit	17%	35%	14%
Bread/Tortillas	28%	24%	7%
Rice/Beans	52%	42%	16%
Vegetables	31%	31%	14%
Other	9%	7%	7%
150-179 days (5 mo.)	(n=80)	(n=72)	(n=61)
Soup	38%	39%	39%
Fruit	35%	47%	28%
Bread/Tortillas	41%	37%	31%
Rice/Beans	66%	58%	46%
Vegetables	29%	40%	26%
Other	14%	13%	16%
All	(n=211)	(n=192)	(n=196)



Breastfeeding practices on preceding day	% ever giving solids	n
Only breastmilk	12%	193
Breastmilk + water	33%	169
Breastmilk + other liquids	36%	163
Breastmilk + milk	20%	119
Breastmilk, milk + liquids	35%	275
Breastmilk + solids (no milk)	100%	211
Breastmilk, milk + solids	100%	192
Total		1322



Age of infant	Current exclusively breastfed	Current predominantly breastfed	
		Breastmilk + water	Breastmilk + liquids
<1 mo.	(n=76)	(n=30)	(n= 49)
Ever exclusive	57%	0%	0%
Ever water only	5%	50%	0%
Ever liquids	29%	33%	84%
Ever milk, or solids ± liquids	9%	17%	16%
1 mo.	(n=56)	(n=23)	(n=34)
Ever exclusive	30%	0%	0%
Ever water only	9%	22%	0%
Ever liquids	30%	30%	59%
Ever milk., or solids ± liquids	31%	48%	41%
2 mo.	(n=29)	(n=37)	(n=22)
Ever exclusive	7%	0%	0%
Ever water only	21%	16%	0%
Ever liquids	41%	41%	55%
Ever milk., or solids ± liquids	31%	43%	45%
Total 0-2.9 mo.	38%	28%	70%



Table A-8. Reasons for giving breastfed infants other liquids/solids

Reason	Water	Other Liquids	Milk	Solids
< 1 mo. (n)	127	142	90	14
Baby thirsty/hot	32%	17%	-	
Babies need it	15%	8%	1%	
Had hiccoughs/gas	28%	9%	-	
Advice/recommendation	11%	9%	8%	
Get used to it	3%	6%	13%	
Restless/cried	2%	3%	10%	
Keep full	1%	11%	22%	
Insufficient milk	2%	14%	28%	
Mother busy	-	1%	1%	
Returned to work	2%	-	3%	
As medicine/baby ill	6%	21%	2%	
Other	1%	9%	11%	
1 mo.	163	194	145	55
Baby thirsty/hot	36%	13%	-	
Babies need it	17%	9%	1%	6%
Had hiccoughs/gas	14%	3%	-	-
Advice/recommendation	17%	13%	10%	13%
Get used to it	7%	16%	10%	55%
Restless	3%	2%	6%	2%
Keep full	1%	6%	32%	16%
Insufficient milk	1%	6%	19%	-
Mother busy	1%	2%	9%	-
Returned to work	-	-	4%	-
As medicine	3%	22%	1%	2%
Other	3%	9%	8%	8%


Table A-8. Reasons for giving breastfed infants other liquids/solids

Reason	Water	Other Liquids	Milk	Solids
2 mo. (n)	171	175	136	83
Baby thirsty/hot	32%	14%	-	-
Babies need it	19%	7%	2%	4%
Had hiccoughs/gas/medicine	11%	5%	-	-
Advice/recommendation	21%	13%	6%	6%
Get used to it	8%	21%	11%	59%
Restless/cried	1%	1%	5%	1%
Keep full	1%	8%	29%	15%
Insufficient milk	-	3%	15%	-
Mother busy	-	3%	10%	1%
Returned to work	-	1%	8%	-
As medicine/baby ill	4%	11%	3%	1%
Other	4%	13%	11%	13%
3 mo.	188	191	150	136
Baby thirsty/hot	38%	11%	-	-
Babies need it	22%	14%	1%	9%
Had hiccoughs/gas	10%	3%	-	-
Advice/recommendation	15%	11%	5%	8%
Get used to it	9%	27%	11%	51%
Restless	2%	3%	5%	2%
Keep full	1%	9%	33%	21%
Insufficient milk	1%	2%	18%	-
Mother busy	-	2%	11%	-
Returned to work	-	1%	4%	-
As medicine/baby ill	2%	13%	-	1%
Other	2%	6%	11%	9%



Table A-8. Reasons for giving breastfed infants other liquids/solids

Reason	Water	Other Liquids	Milk	Solids
4 mo. (n)	199	187	140	165
Baby thirsty/hot	41%	9%	-	1%
Babies need it	22%	13%	1%	7%
Had hiccoughs/gas	6%	-	-	-
Advice/recommendation	17%	10%	8%	10%
Get used to it	6%	34%	10%	48%
Restless/cried	2%	2%	5%	2%
Keep full	-	13%	30%	22%
Insufficient milk	-	1%	14%	-
Mother busy	-	1%	8%	-
Returned to work	-	-	10%	1%
As medicine/baby ill	2%	7%	-	1%
Other	7%	10%	15%	8%
5 mo.	204	205	151	199
Baby thirsty/hot	36%	6%	-	-
Babies need it	27%	14%	1%	15%
Had hiccoughs/gas	4%	1%	3%	-
Advice/recommendation	19%	8%	6%	7%
Get used to it	7%	36%	10%	42%
Restless	2%	1%	3%	1%
Keep full	1%	16%	25%	27%
Insufficient milk	-	2%	13%	-
Mother busy	-	2%	9%	2%
Returned to work	-	1%	10%	1%
As medicine/baby ill		6%	-	-
Other	4%	9%	18%	7%



Type of liquid	Water	Other Liquids				Milk	Solids			
		Sugar water	Tea	Juice	Soup		Fruit	Bread or tortilla	Rice beans	Veg.
n	1263	967	657	728	631	1016	412	271	385	452
% fed by bottles	49%	82%	77%	87%	7%	98%	3%	1%	2%	0%
% fed by cup	27%	9%	8%	9%	10%	1%	3%	3%	10%	8%
% feed by spoon	24%	7%	12%	4%	81%	1%	21%	25%	79%	60%
% fed by fingers	0%	1%	1%	0%	1%	0%	73%	70%	9%	32%
% fed by dropper	2%	1%	2%	--	--	--	--	--	--	--
Total %	102	100	100	100	99	100	100	99	100	100



Time following delivery when first nursed	Excl. Breastfed	Predom. breastfed	Breastfed with milk or solids	Not-currently breastfed	n	p value
% first nursed within					1483	n.s.
30 min. after birth	14%	23%	52%	11%	809	
30-60 min.	13%	18%	60%	9%	117	
1-7 hrs.	10%	22%	55%	12%	232	
> 7 hrs.	12%	21%	53%	15%	325	

Type of liquid	% Receiving liquids	n*
Water	4%	1376
Sugar water	9%	1430
Other milk	6%	1472
Suero (glucose water)	16%	1477
Litrosol	2%	1468
Colostrum	89%	1477
Of those born in a hospital	% Receiving suero	n
Vaginal births	18%	702
Caesarean	42%	90
Born on time	20%	740
Pre- or post-term birth	38%	42

* Sample sizes (n) differ due to unknown responses



Table A-12. Percent of mothers who sleep with their infants by breastfeeding practices and infant's age

Age of infant	Exclusive Breastfed	Predom. breastfed	Breastfed with milk or solids	Not-currently breastfed	All % (n)	p value
<1 mo.	93%	89%	86%	38%	87% (239)	<0.001
1 mo.	91%	90%	72%	61%	79% (265)	<0.001
2 mo.	83%	90%	81%	52%	80% (234)	<0.01
3 mo.	93%	80%	77%	40%	73% (249)	<0.001
4 mo.	92%	82%	83%	48%	77%(250)	<0.001
5 mo.	NA(n<10)	91%	80%	45%	74% (279)	<0.001
All	90%	87%	79%	47%	78% (1186)	<0.001

Table A-13. Mean frequency of total feeds by whether infants are fed on demand

	Fed on demand	Fed on a schedule	All	n	p value
Mean # of total breastfeeds	8.8	6.6	8.5	1127	<0.001
<1 mo.	10.2	8.6	9.9	185	
1 mo.	9.2	5.3	8.8	204	
2 mo.	8.7	7.0	8.4	183	
3 mo.	8.3	5.9	8.1	195	
4 mo.	8.3	6.2	7.9	174	
5 mo.	8.2	6.2	7.9	186	



Table A-14. Relationship of use of health services and breastfeeding practices						
Type of health service utilization	Exclusively Breastfed	Predominantly Breastfed	Breastfed with milk or solids	Not Breastfed	n	p
Prenatal Care						n.s.
Yes	12%	22%	53%	13%	1125	
No	14%	22%	51%	12%	390	
Postpartum Care						<0.001
Yes	8%	20%	56%	16%	550	
No	15%	23%	50%	11%	962	
Sick child visit						<0.001
Yes	7%	18%	57%	18%	599	
No	17%	24%	50%	10%	916	
Well-child visit						<0.001
Yes	8%	19%	58%	16%	512	
No	15%	24%	50%	11%	1004	
Took child for vaccination						<0.001
Yes	7%	20%	58%	15%	1035	
No	25%	26%	41%	8%	481	



U.P.S	% with prenatal care	% DELIVERING in hospital	% attended by midwife	% with postpartum care
EL PROGRESO				
El Progreso	72%	75%	26%	38%
Urraco	66%	23%	75%	21%
Cowlee & Casiano	65%	56%	42%	29%
Guayamitas	57%	33%	67%	16%
La Mina	47%	40%	61%	21%
Morazan	84%	27%	65%	35%
Nueva Esperanza	58%	9%	91%	16%
El Negrito	66%	28%	72%	34%
Agua Blanca Sur	60%	49%	51%	29%
Santa Rita	55%	57%	43%	23%
PUERTO CORTÉS				
El Paraiso & Bajamar	81%	30%	70%	35%
Puerto Cortés	84%	74%	22%	56%
Baracoa	77%	68%	33%	51%
Puente Alto	86%	52%	45%	31%
Caoba & Pantano	86%	34%	66%	15%
Kele-Kele	88%	36%	61%	21%
Omoa	73%	48%	52%	33%
Cuyamel	100%	37%	63%	50%
Cuyamelito	75%	17%	78%	14%
Tegucigalpa	89%	42%	54%	15%



Table A-16. Exclusive breastfeeding rates and use of child health services by UPS				
UPS	% exclusively breastfed	% with sick child visit	% with well-child visit	% vaccinated
EL PROGRESO				
El Progreso	12%	46%	39%	64%
Urraco	7%	41%	23%	80%
Cowlee & Casiano	14%	40%	21%	60%
Guayamitas	35%	39%	10%	43%
La Mina	11%	45%	13%	55%
Morazan	16%	26%	22%	60%
Nueva Esperanza	28%	11%	5%	28%
El Negrito	6%	31%	38%	72%
Agua Blanca Sur	3%	37%	26%	56%
Santa Rita	5%	35%	13%	58%
PUERTO CORTÉS				
El Paraiso & Bajamar	16%	46%	59%	86%
Puerto Cortés	10%	48%	48%	81%
Baracoa	14%	37%	40%	75%
Puente Alto	14%	33%	20%	67%
Caoba & Pantano	7%	28%	36%	85%
Kele-Kele	21%	27%	24%	67%
Omoa	15%	37%	54%	73%
Cuyamel	11%	58%	63%	95%
Cuyamelito	11%	44%	14%	56%
Tegucigalpa	15%	12%	19%	85%



APPENDIX 2: QUESTIONNAIRE

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INSTRUMENT OF THE MATERNAL LACTATION AND INTEGRAL CARE
OF THE MOTHER AND CHILD COMPONENT

Number of questionnaire: (ID)

Community Name: (Com)

Name of the UPS: (UPS)

Date of Interview:

Number of Interviewer: (Encue)

Time at which interview began:

Time at which interview ended:

Good afternoon (day). My name is _____. I am working for a project of the Ministry of Public Health. We are doing a study about babies' health. Is here a woman in the house that has a baby that is less than 6 months old?

(No): Thank you. (Go the next house and according to the instructions)

(Yes): Could I speak with the mother of the baby? Are you the mother of the baby? If it would not bother you, could I ask you some questions?

(Yes): Good afternoon (day). My name is _____. I am working for a project of the Ministry of Public Health. We are doing a study about babies' health. The results will be confidential and if there is a question that you do not want to answer you do not have to do so.

(If the mother is not there): Could I return at a convenient time to talk with the mother of the baby?

(Yes): (Make a Date): _____Time _____Day

(No): Thank You. (Go to the next house and according to instructions)

92

I. General Information: I would like to begin with some general questions about you, your baby and your home.

1. What is your baby's name?

_____ Name (nombre) name	Chosen twin (If babies are twins, refer to the field guide)
	1 older/ first born
	2 younger/second born (gemelo) twin
Child has not been given a name	7
Don't know/no response	8
Missing	9

2. Is it a boy or a girl? (sexo) sex

Girl	1
Boy	2
Don't know/doesn't remember	8
Wasn't asked	9

3. How old is CHILD'S NAME? (dias) days

_____ age	_____ (month/week/day)
Don't know/doesn't remember	888
Wasn't asked	999

4. When was CHILD'S NAME born? Could you tell me his/her date of birth? (fecha) date

_____ (day/month/year)	
Don't know/DR	88
Wasn't asked	99

(Refer to the table in the field guide to determine if you should continue with the interview or conclude it--if the child is older than 6 months, thank them and finish the interview)

5. How many people live in this house? How many are more than 12 years old? How many are younger than 12?

Total: _____	Adults _____	Children _____
(numpers)	(numadul)	(numnino)
Don't know/DR	88	
Wasn't asked	99	

6. How old are you? (edad) age

_____ years	
Don't know/DR	88
Wasn't asked	99

7. Are you? (read options) (marital)

Married	1
With a companion	2
Single	3
Widow	4
Separated	5
Divorced	6
Don't know/Doesn't remember	8

8. Is the father of CHILD'S NAME living in the house? (pacasa)

Yes	1
No	2
Don't know/DR	8
Wasn't asked	9

9. With whom does the baby sleep? (duerme) sleep

Alone	1
With Mother	2
With siblings	3
With another person	4
Combination of the above	5
Don't know/DR	8
Was not asked	9

II. Feeding

10. Now, I would like to ask some questions about the feeding of CHILD'S NAME. Have you ever breast-fed CHILD'S NAME? (pecho)

Yes	1
No	2 \ (If answer is "no" or "DK/DR",
Don't know/DR	8 / skip to question # 18)
Was not asked	9

11. Do you still breast-feed? (todavia)

Yes	1
No	2 \ (If answer is "no or "DK/DR",
Don't know/DR	8 / skip to question #13)
Was not asked	9

12. Do you give CHILD'S NAME only breast milk? (solo) only

Yes	1 \ (If answer is "Yes", "No" or
No	2 "DK/DR", skip to question
Don't know/DR	8 / # 15)
Was not asked	9

16. How many times did you breast-feed CHILD'S NAME from the time (s)he went to bed last night until (s)he got up today? (mamnoch)

_____ Number of times
Did not nurse 25
Don't know/DR 88
Was not asked (Missing) 99

() a few times/various times (Clarify): Could you tell me how many times you would say are a few times/various times? twice, 4 times, 6 times, 8 times or more?

_____ Number of times

17. Do you breast feed CHILD'S NAME each time that he/she wants, or do you follow a fixed schedule for feeding him/her? (horario) schedule

Schedule 1
Each time he/she wants 2
Mix 3
Other: 4

_____ Don't know/DR 8
Was not asked (Missing) 9

18. Now, I would like to talk of the other liquids and foods that some mothers give to their babies. I am going to mention a food or liquid. Could you tell me if CHILD'S NAME has ever taken this food?

A. Water:

We'll begin with water (I am speaking of water alone, without anything else)

(Must ask both questions, #A1 and #A2)

(aguaal) A1. Has CHILD'S NAME ever been given water? yes 1 no 2
A2. Yesterday, including the day and night, was CHILD'S NAME given water?(aguayer) yes 1 no 2

(If the answer is "no" to both responses, skip to question #A6)

A3. What was used to give it to him/her (in what was it given?) (aguacon)

Bottle 1 Cup 2
Spoon 3 Finger 4
Dropper 5
DK/DR 8
WNA (Missing) 9

96

A4. A what age did you begin to give water to CHILD'S NAME?
 _____ (age) _____ (months/weeks/days)
 (aguaeda)

Don't know/DR 888
 WNA (Missing) 999

A5. Why did you decide to give him/her water? (aguapor)

He/she was thirsty/was hot	1
All babies need it	2
He/she had gas/the hiccups	3
Was advised to	4
He/she was restless/cried a lot	5
To keep him/her full/hunger	6
Didn't have enough milk	7
So that he/she would get used to it	8
Because the mother was very busy	9
He/she had diarrhea	10
Returned to work	11
Recommended by a health worker	12
As medicine	13
The baby became ill	14
Other (Specify)	15
<hr/>	
Don't Know/Does not remember	88
Was not asked (Missing)	99

(Skip to Question # B1)

/

I A6. A what age are you thinking of giving CHILD'S NAME water?
 I _____ (age) _____ (months/weeks/days)
 I (aguadar)
 I
 I When the baby needs it 777
 I Don't Know/DR 888
 I Was not asked (Missing) 999
 I
 I (Continue with Question # B1)
 \

B. Other milks: (Need to ask all the questions, #B1-#B4)

B1. Have you ever given powered milk or formula to CHILD'S NAME? (formula)

Yes	1	Which brand? _____
No	2	(marca1)
Don't Know/DR	8	
WNA (Missing)	9	

B2. Yesterday, including the day and the night, has CHILD'S NAME been given powered milk or formula? (formaye)

Yes	1	Which brand?	_____
No	2		(marca2)
Don't Know/DR	8		
WNA (Missing)	9		

B3. Have you ever give cow's milk to CHILD'S NAME? (vaca)

Yes	1	Which brand?	_____
No	2		(marca3)
Don't Know/DR	8		
WNA (Missing)	9		

B4. Yesterday, including the day and the night, has CHILD'S NAME been given cow's milk? (vacaaye)

Yes	1	Which brand?	_____
No	2		(marca4)
Don't know/DR	8		
WNA (Missing)	9		

(If the answer is "no" to all the questions, B1-B4, skip to question # B8)

B5. What did you use to give it to him/her? (In what was it given?) (lechcon)

Bottle	1
Cup	2
Spoon	3
Finger	4
Dropper	5
Don't Know/DR	8
Was not asked	9

B6. A what age did you begin to give other milks to CHILD'S NAME? (lecheda)

_____ (age) _____ (months/weeks/days)

Don't Know/DR	888
Was not asked (Missing)	999

B7. Why did you decide to give him/her other milks, aside from mother's milk? (**lechpor**)

He/she was thirsty/was very hot	1
All babies need it	2
He/she had gas/the hiccups	3
Was advised so	4
He/she was restless/cried a lot	5
To keep him/her full/hunger	6
Did not have enough milk	7
So that he/she could get used to it	8
Because mother was very busy	9
He/she had diarrhea	10
Returned to work	11
Recommended by health worker	12
As medicine	13
The baby became ill	14
Other (Specify)	15
<hr/>	
Don't know/DR	88
Was not asked	99

(Skip to Question #C1)

/

I B8. A what age are you thinking of giving CHILD'S NAME other
I milks? (**lechdar**)
I
I _____ (age) _____ (months/weeks/days)
I
I When the baby needs it 777
I Don't Know/DR 888
I Was not asked 999
I
I (Continue with Question #C1)
\

C. Other Liquids (water with sugar, tea, coffee, juice):
(Need to ask all the questions in numbers C1 and C2)

C1. Have you ever given _____ to CHILD'S NAME?

Water w/ sugar or honey	Yes 1	No 2	DK/DR 8	WNA 9 (azucar)
Tea (te)	Yes 1	No 2	DK/DR 8	WNA 9
Coffee (cafe)	Yes 1	No 2	DK/DR 8	WNA 9
Juice (jucio)	Yes 1	No 2	DK/DR 8	WNA 9
Soup (sopa)	Yes 1	No 2	DK/DR 8	WNA 9
Other liquids (otroliq)	Yes 1	No 2	DK/DR 8	WNA 9

aal

- 99

C2. Yesterday, including the day and night, was _____ given to CHILD'S NAME?

Water w/ sugar/honey	Yes 1	No 2	DK/DR 8	WNA 9 (azucaye)
Tea (teaye)	Yes 1	No 2	DK/DR 8	WNA 9
Coffee (cafeaye)	Yes 1	No 2	DK/DR 8	WNA 9
Juice (jugoaye)	Yes 1	No 2	DK/DR 8	WNA 9
Soup (sopaaye)	Yes 1	No 2	DK/DR 8	WNA 9
Other liquids (liqaye)	Yes 1	No 2	DK/DR 8	WNA 9

(If the answer was "no" to all questions in C1 and C2, skip to Question # C6)

C3. What did you use to give him/her _____?

Water w/ sugar/honey: (azucon)	Bottle	1	Cup	2	Spoon	3
	Finger	4	Dropper	5	DK/DR	8
	WNA	9				

Tea: (tecon)	Bottle	1	Cup	2	Spoon	3
	Finger	4	Dropper	5	DK/DR	8
	WNA	9				

Coffee: (cafecon)	Bottle	1	Cup	2	Spoon	3
	Finger	4	Dropper	5	DK/DR	8
	WNA	9				

Juice: (jugocon)	Bottle	1	Cup	2	Spoon	3
	Finger	4	Dropper	5	DK/DR	8
	WNA	9				

Soup: (sopacon)	Bottle	1	Cup	2	Spoon	3
	Finger	4	Dropper	5	DK/DR	8
	WNA	9				

Other Liquids: (liqcon)	Bottle	1	Cup	2	Spoon	3
	Finger	4	Dropper	5	DK/DR	8
	WNA	9				

C4. At what age did you begin to give other liquids to CHILD'S NAME? (liqedad)

_____ (age) _____ (months/weeks/days)

Don't Know/DR 888
Was not asked (Missing) 999

C5. Why did you decide to give him/her other liquids?

	(liqpor)
He/she was thirsty/was very hot	1
All babies need it	2
He/she had gas/the hiccups	3
I was advised so	4
He/she was restless/cried a lot	5
To keep him/her full/hunger	6
Didn't have enough milk	7
So that he/she would get used to it	8
Because mother was very busy	9
He/she had diarrhea	10
Returned to Work	11
Recommended by health worker	12
As Medicine	13
The baby became sick	14
Other (Specify)	15
<hr/>	
Don't know/Does not remember	88
Was not asked	99

(Skip to question # D1)

/

I C6. A what age are you thinking of giving CHILD'S NAME other
I liquids? (liqdar)

I _____ (age) _____ (months/weeks/days)

I When the baby needs it 777
I Don't know/DR 888
I Was not asked (Missing) 999

I (Continue with Question # D1)

\

D. Solids--Fruit, Tortillas/Bread, Soup, Rice and beans, vegetables, other solid food: (Must ask all the question in numbers D1 and D2)

D1. Now, I would like to talk of foods, have you ever given _____ to CHILD'S NAME?

(fruta)	Fruit	Yes 1	No 2	DK/DR 8	WNA 9
(pantor)	Tortillas/Bread	Yes 1	No 2	DK/DR 8	WNA 9
(sopacom)	Soup	Yes 1	No 2	DK/DR 8	WNA 9
(arroz)	Rice/beans	Yes 1	No 2	DK/DR 8	WNA 9
(verdura)	Vegetables	Yes 1	No 2	DK/DR 8	WNA 9
(otracom)	Other Foods	Yes 1	No 2	DK/DR 8	WNA 9

aa2

D2. Yesterday, including the day and the night, was CHILD'S NAME given _____.

(frutaye)	Fruit	Yes 1	No 2	DK/DR 8	WNA 9
(panaye)	Tortillas/Bread	Yes 1	No 2	DK/DR 8	WNA 9
(sopacaye)	Soup	Yes 1	No 2	DK/DR 8	WNA 9
(arroaye)	Rice/beans	Yes 1	No 2	DK/DR 8	WNA 9
(veraye)	vegetables	Yes 1	No 2	DK/DR 8	WNA 9
(comaye)	Other Foods	Yes 1	No 2	DK/DR 8	WNA 9

(If the Answer is "no" for all questions in D1 and D2, skip to question # D6)

D3. What was used to give him/her _____? In what was _____ put?

	Fruit:	Bottle	1	Cup	2	Spoon	3
(frutcon)	Finger	4	Dropper	5	DK/DR	8	
		WNA	9				
	Tortilla/ Bread:	Bottle	1	Cup	2	Spoon	3
(pancon)	Finger	4	Dropper	5	DK/DR	8	
		WNA	9				
	Soup:	Bottle	1	Cup	2	Spoon	3
(sopcon)	Finger	4	Dropper	5	DK/DR	8	
		WNA	9				
	Rice/ Beans:	Bottle	1	Cup	2	Spoon	3
(arrocon)	Finger	4	Dropper	5	DK/DR	8	
		WNA	9				
(vercon)	Vege- tables:	Bottle	1	Cup	2	Spoon	3
		Finger	4	Dropper	5	DK/DR	8
		WNA	9				
	Other Foods:	Bottle	1	Cup	2	Spoon	3
(comcon)	Finger	4	Dropper	5	DK/DR	8	
		WNA	9				

D4. At what age did you begin to give food to CHILD'S NAME?
 _____ (age) _____ (months/weeks/days)
 (comedad)

Don't know/DR 888
 Was not asked 999

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D5. Why did you decide to give him/her foods? (compor)

He/she was thirsty/very hot	1
All babies need it	2
He/she had gas/the hiccups	3
Was advised so	4
He/she was restless/cried a lot	5
To keep him/her full/hunger	6
Didn't have enough milk	7
So that he/she would get used to it	8
Because mother was very busy	9
He/she had diarrhea	10
Returned to work	11
Recommended by neath worker	12
As medicine	13
The baby became sick	14
Other (Specify)	15
<hr/>	
Don't Know/Does not Remember	88

(Skip to Question #E1)

/

I D6. A what age are you thinking of beginning to give foods to
I CHILD'S NAME? (comdar)
I
I _____ (age) _____ (months/weeks/days)
I
I When the baby needs it 777
I Don't know/Does not remember 888
I Was not asked 999
I
I (Continue with to Question # E1)
\

E. Chupon (flavored chewing cloth):

E1. Has CHILD'S NAME ever been given chupon? (chupon)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
Don't Know/DR	8 / skip to question # 19)
Was Not Asked	9

E2. Yesterday, including the day and night, was chupon given to CHILD'S NAME? (chupaye)

Yes	1
No	2
Don't know/DR	8
Was not asked	9

E3. For how many days did was he/she given chupon? (**chupdia**)
 _____ days

Don't know/DR 88
 Was not asked 99

E4. How many times a day was he/she given chupon? (**chupvec**)
 _____ times a day

Don't know/DR 88
 Was not asked 99

19. I am going to read a list of problems that some women have when breast-feeding. Have you ever had any of these problems when nursing your baby? (Read options)

	Yes	No	DK/DR	WNA	
Did not have enough milk?	1	2	8	9	
Have you had this problem? (suflech)					
(If the answer is "yes", continue with question # 20)					
Milk not released?	1	2	8	9 \	
Have you had this problem? (bajaba)					
Baby didn't want the breast?	1	2	8	9	
Have you had this problem? (noqueria)					
Couldn't breast-feed because you were ill? (pechenf)	1	2	8	9	(Go to
Couldn't breast-feed because baby was ill? (bebeenf)	1	2	8	9	#21)
Any other thing? (Specify) _____ (otra)	1	2	8	9 /	
Had never breast-fed (Don't read) (nunca)			4		(Skip to Question # 24)

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/

I (Only for those that answered "Yes" to "Did not have enough
I milk?")

I

I 20. How did you know that you did not have enough milk?
I (porsuf1, porsuf2, porsuf3)
I Order

I The baby cried after he/she was nursed	1	_____
I The baby was restless	2	_____
I The baby wasn't gaining weight/growing	3	_____
I My breasts were very small, empty	4	_____
I I realized	5	_____
I The doctor told me	6	_____
I My husband/relatives have told me	7	_____
I My friends/neighbors have told me	8	_____
I I did not feel the milk released	9	_____
I The mother was sick	10	_____
I Other (Specify) _____	11	_____
I		
I Don't Know/Do not Remember	88	_____
I Was not asked	99	_____

\

21. There are other problems that can occur during breast-feeding, have you ever had: (Read options)

	Yes	No	DK/DR
Flat Nipples (plano)	1	2	8
Cracked Nipples (rajado)	1	2	8
Sore Nipples (dolor)	1	2	8
Engorged Breasts (congest)	1	2	8
Abscesses or infected breasts (maduro)	1	2	8

22. When you have had this (these) problem(s) have you asked advice of or consulted with anyone? (**probcon**)

Yes	1	
No	2	\ (If the answer is "No" or "DK/DR",
Don't know/DR	3	/ skip to question #24)-
Was not asked	4	

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23. From whom did you ask advice? (If the mother gives a name, clarify: Who is he/she?) (probqui1, probqui2, probqui3)

		Order
Spouse	1	_____
Doctor	2	_____
Nurse	3	_____
Midwife	4	_____
Mother	5	_____
Mother-in-law	6	_____
Other relative	7	_____
Friend/Neighbor	8	_____
Counselor	9	_____
Other (Specify)	10	_____
<hr/>		
Don't Know/DR	88	
Was not asked	99	

24. How many children do you have, aside from CHILD'S NAME? (hijos)

_____ (Number of Children) (Help assure that mother includes twin)

None 20 \ (If the answer is "none" or "DK/DR",
 Don't know/DR 88 / skip to question # 27)
 Was not asked 99

25. Did you breast-feed your youngest child before CHILD'S NAME? (hijpech)

Yes 1
 No 2 \ (If the answer is "no" or "DK/DR",
 Don't Know/DR 8 / skip to question #27)
 Was not asked 9

26. Until when did you breast-feed? (hasta)

_____ (age) _____ (months/weeks/days)

Don't Know/DR 888
 Was not asked 999

27. Now, I would like to ask some questions about the health of CHILD'S NAME? In general, how would you say the health of CHILD'S NAME is, would you say it is good, normal or bad? (salud)

Good 1
 So/So 2
 Bad 3
 DK/DR 8
 WNA(Missing) 9

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A. Was CHILD'S NAME born on the due date? (tiempo)

Yes 1
No 2
DK/DR 8
WNA (Missing) 9

B. Does he/she have difficulty gaining weight or growing? (peso)

Yes 1
No 2
DK/DR 8
WNA (Missing) 9

C. Does he/she suffer from colic? (colico)

Yes	1	With what do you soothe him/her? (calmaco)	
No	2	Medicine	1
DK/DR	8	Tea	2
WNA (Missing)	9	Stop breast-feeding	3
		Soothe/relieve gas	4
		Nothing	5
		WNA (Missing)	9

28. In the last two weeks, has your baby had diarrhea? (dia2wk)

Yes 1
No 2 \ (If the answer is "no" or "DK/DR",
DK/DR 8 / skip to question # 32)
WNA 9

29. Have you used something to treat the diarrhea? (diauso)

Yes 1
No 2 \ (If the answer is "no" or "DK/DR",
DK/DR 8 / skip to question # 31)
WNA 9

30. What did you use? (If the mother gives the name of a medicine or says "medicine", clarify: is it a pill, syrup, laxative (purgante) or injection?) (diamed1, diamed2, diamed3)

		Order
Litrosol	1	_____
Laxatives (Pugantes)	2	_____
Rub	3	_____
Pills	4	_____
Syrups	5	_____
Injections	6	_____
Medicinal Plants	7	_____
Gave more liquids	8	_____
Increased breastfeeding	9	_____
Tea	10	_____
Other (Specify)	11	_____
<hr/>		
Don't Know/DR	88	
WNA (Missing)	99	

31. Did you stop breast-feeding CHILD'S NAME because of this diarrhea? (diapech)

Yes	1
No	2
DK/DR	8
Do not Breast-feed	3
WNA (Missing)	9

32. In the last two weeks, has your baby had a cough or cold? (tos2wk)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question #36)
WNA	9

33. Did you use something to treat the cough or cold? (tosuso)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 35)
WNA	9

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34. What did you use? (If the mother gives the name of a medicine, or says "medicine", clarify:) Is it a pill, syrup, laxative (purgante) or injection? (tosmed1, tosmed2, tosmed3)

		Order
Litrosol	1	_____
Laxative (purgante)	2	_____
Rub	3	_____
Pills	4	_____
Syrups	5	_____
Injection	6	_____
Medicinal Plants	7	_____
Oils/fats	8	_____
Gave more liquids	9	_____
Increased lactation	10	_____
Tea	11	_____
Other (Specify)	12	_____
<hr/>		
Don't Know/DR	88	
Was not asked (Missing)	99	

35. Did you stop breast-feeding because of this cough or cold? (tospech)

Yes	1
No	2
Does Not Breasfeed	3
DK/DR	8
WNA	9

36. How was the health of CHILD'S NAME yesterday, was he/she healthy or ill? (salvaye)

Ill/bad	1	
Healthy/well	2	\ (If the answer is "healthy" or "DK/
DK/DR	8	/ DR", skip to question # 38)
WNA (Missing)	9	

37. What did he/she have? (tuvoaye1, tuvoaye2, tuvoaye3)

		Order
Diarrhea	1	_____
Cough, Cold	2	_____
Fever	3	_____
Sore throat	4	_____
Ear-ache	5	_____
Indigestion	6	_____
Other (Specify)	7	_____
<hr/>		
Don't Know/DR	8	_____
WNA (Missing)	9	_____

38. Now, I would like to talk with you about your opinion about the feeding and care of babies. Some people say that babies need water from their first months of life, others say that until they are six months old, they only need mother's milk. In your opinion, do babies need water in their first six months of life? (**neceagu**)

Yes, they need it	1
No, they don't need it	2
Depends on the baby	3
Don't know/DR	8
Was not asked (Missing)	9

39. Some people say that one should breast-feed babies each time they want. Others say that one should breast-feed at certain hours according to a fixed schedule. Do you think one should feed child each time they want or that one should follow a fixed schedule?

(**horcon**)

When the babies want	1
With a schedule	2
Depends on the baby	3
Don't Know/DR	8
Was not asked (Missing)	9

40. Do you think that a baby should have other milks, apart from Mother's milk? (**otralec**)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 42)
WNA	9

41. A what age do you think a baby should begin to have other milks, apart from Mother's milk? (**debelec**)

_____ (age) _____ (Months/weeks/days)

Depends on the baby	777
Don't know/DR	888
Was not asked (Missing)	999

42. A what age do you think that a baby should begin to take other liquids, apart from milk (such as, for example, juice, tea or coffee)? (**debeliq**)

_____ (age) _____ (Months/weeks/days)

Depends on the baby	777
Don't know/DR	888
Was not asked (Missing)	999

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43. A what age do you think that a baby should begin to eat foods?
 _____ (age) _____ (Months/weeks/days)
 (debecom)

Depends on the baby 777
 Don't know/DR 888
 Was not asked (Missing) 999

44. Is there something that a mother can do in order to increase the quantity of her milk? (aumentar)

Yes 1
 No 2 \ (If the Answer is "no" or "DK",
 DK/DR 8 / skip to question # 46)
 WNA 9

45. What can she do? (comoaum1, comoaum2, comoaum3)

		Order
Breast-feed more often	1	_____
Eat more/well	2	_____
Drink more liquids	3	_____
Rest	4	_____
Consult a Doctor/Nurse	5	_____
Consult a counselor	6	_____
Take vitamins	7	_____
Something else (specify)	8	_____
<hr/>		
Don't Know/Does not remember	88	_____
Was not asked	99	_____

46A. Giving other milks to your baby allows or would allow you to have more time to do other chores around the home? (tra1)

Yes 1
 No 2
 DK/DR 8
 (Through Observation:) (titub1)
 Hesitation 3
 WNA (Missing) 9

46B. Having more time to do other chores around the home is important or is not so important to you? (tra2)

It is very important 1
 It is not so important 2
 Don't know/DR 8
 (Through Observation:) (titub2)
 Hesitation 3
 Was not asked (Missing) 9



47A. Giving other milks to your baby allows or would allow you to have more time to begin to work? (tra3)

Yes	1	
No	2	
DK/DR	8	
(Through Observation:)		(titub3)
Hesitation	3	
WNA (Missing)	9	

47B. Beginning to work is important or is not so important for you? (tra4)

It is very important	1	
It is not so important	2	
Don't know/DR	8	
(Through Observation:)		(titub4)
Hesitation	3	
WNA (Missing)	9	

48. Giving other milks to your baby increases the risk that he/she will get sick? (tra5)

Yes	1	
No	2	
DK/DR	8	
(Through Observation:)		(titub5)
Hesitation	3	
WNA (Missing)	9	

49A. Giving your baby only breast milk, without any other milks, permits or would permit you to share more with your baby? (tra6)

Yes	1	
No	2	
DK/DR	8	
(Through Observation:)		(titub6)
Hesitation	3	
WNA (Missing)	9	

49B. Sharing more with you baby is important or is not so important to you? (tra7)

It is very important	1	
It is not so important	2	
DK/DR	8	
(Through Observation:)		(titub7)
Hesitation	3	
WNA (Missing)	9	

50A. Giving food to your baby helps him/her to get accustomed to other tastes? (tra8)

Yes	1	
No	2	
DK/DR	8	
(Through Observation:)		(titub8)
Hesitation	3	
WNA (Missing)	9	

50B. That he/she gets accustomed to other tastes is important or is not so important to you? (tra9)

It is very important	1	
It is not so important	2	
DK/DR	8	
(Through Observation:)		(titub9)
Hesitation	3	
WNA (Missing)	9	

51. Giving food to your baby increases the danger that he/she will get diarrhea? (tra10)

Yes	1	
No	2	
DK/DR	8	
(Through Observation:)		(titub10)
Hesitation	3	
WNA (Missing)	9	

52A. Giving food to your baby makes him/her gain weight very quickly? (tra11)

Yes	1	
No	2	
DK/DR	8	
(Through Observation:)		(titub11)
Hesitation	3	
WNA (Missing)	9	

53B. That your baby gains weight quickly is important or not so important to you? (tra12)

It is very important	1	
It not so important	2	
DK/DR	8	
(Through Observation:)		(titub12)
Hesitation	3	
Was not asked (Missing)	9	

54. Is there someone you can ask for advice over the feeding of babies or who can help you if you ever have problems nursing your baby? (consbeb)

Yes	1	
No	2	\ (If the answer is "no" or "DK/DR",
DK/DR	8	/ skip to question #56)
WNA	9	

55. Who is (are) that (those) person (people)? (If the mother gives a name: Who is he/she?) Who else? spontaneous:(quien11, quien12, quien13) prompted:(quien21, quien22, quien23)

		Spontaneous Order	Prompted Order
Spouse	1	_____	_____
Doctor	2	_____	_____
Nurse	3	_____	_____
Midwife	4	_____	_____
Guardian	5	_____	_____
Mother	6	_____	_____
Mother-in-law	7	_____	_____
Other relative	8	_____	_____
Friend/Neighbor	9	_____	_____
Counselor	10	_____	_____
Other (Specify)	11	_____	_____
<hr/>			
Don't Know/DR	88		
WNA (Missing)	99		

56. Have someone ever visited you to talk about breast feeding or about the feeding of babies? (visita)

Yes	1	
No	2	\ (If the answer is "no" or "DK/DR",
DK/DR	8	/ skip to question # 58)
WNA	9	

57. Who was that person? (If the mother gives a name: Who is he/she?) (quien31, quien32, quien33)

		Order
Doctor	1	_____
Nurse	2	_____
Counselor	3	_____
Guardian	4	_____
Promoter	5	_____
Friend/Neighbor	6	_____
Other relative	7	_____
Midwife	8	_____
Other (Specify)	9	_____
<hr/>		
Don't Know/DR	88	
WNA (Missing)	99	

58. Have you ever been invited to a meeting at which they talked of breast feeding or the feeding of babies? (reunion)

Yes	1	
No	2	\ (If the answer is "no" or "DK/DR",
DK/DR	8	/ skip to question # 61)
WNA	9	

59. Who invited you to this meeting (If the mother give a name: Who is he/she?) (quireun1, quireun2, quireun3)

		Order
Spouse	1	_____
Doctor	2	_____
Nurse	3	_____
Midwife	4	_____
Guardian	5	_____
Mother	6	_____
Mother-in-law	7	_____
Relative	8	_____
Friend/Neighbor	9	_____
Counselor	10	_____
Other (Specify)	11	_____
<hr/>		
Don't Know/DR	88	
WNA(Missing)	99	

60. Where was the meeting? (dondere)

Communal House	1
House of the person interviewed	2
Home of the Counselor	3
Home of a Volunteer	4
Health Center	5
Clinic	6
Hospital	7
Local government office	8
Church	9
School	10
Other (Specify)	11
<hr/>	
Don't know/Does not remember	88
Was not asked (Missing)	99

61. Who are the people with whom you talk the most about the feeding and care of CHILD'S NAME? (If the mother gives a name: Who is he/she?) (platica1, platica2, platica3)

		Order
Mother	1	_____
Friend/Neighbor	2	_____
Co-workers	3	_____
Spouse	4	_____
Mother-in-law	5	_____
Sister-in-law	6	_____
Doctor	7	_____
Nurse	8	_____
Counselor	9	_____
Other Relative	10	_____
Other (Specify)	11	_____
<hr/>		
No one	0 \	(If the answer is "No one"
Don't Know/DR	88 /	or "DK/DR", skip to #66)
Was not asked (Missing)	99	

62. Now, I would like to talk of the first person you named (refer to the people that the mother named in question # 61), Do you think that _____ would say that it is better for CHILD'S NAME to receive only breast milk, breast milk and other milks, or only other milks? (piensa1)

Only breast milk	1
Breast milk and other milks	2
Only other milks	3
Don't know/does not remember	8
Was not asked (Missing)	9

63. Now, I would like to talk of the second person you named (refer to the people that the mother named in question # 5.6), Do you think that _____ would say that it is better for CHILD'S NAME to receive only breast milk, breast milk and other milks, or only other milk? (piensa2)

Only breast milk	1
Breast milk and other milks	2
Only other milks	3
Don't know/does not remember	8
Was not asked (Missing)	9

116

64. Now, I would like to talk about the third person that you named (Refer to the people that the mother named in question # 61), Do you think that _____ would say that it is better for CHILD'S NAME to receive only breast milk, breast milk and other milks, or only other milks? (**piensa3**)

Only breast milk	1
Breast milk and other milks	2
Only other milks	3
Don't know/DR	8
Was not asked (Missing)	9

(Refer to question # 61 to check the people that the mother names)

65. Do any of the people that were mentioned before live in this community or neighborhood? (Refer to question # 61 to determine how many people the mother named)

	Yes	No	DK/DR
Person 1 (perso1)	1	2	8
Person 2 (perso2)	1	2	8
Person 3 (perso3)	1	2	8

66. Now, I would like to talk about your neighbors, do you talk with them over the feeding and care babies? (**vecinos**)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 68)
WNA	9

67. During the last month, could you tell me if you talked with you neighbors about the feeding of babies almost every day, weekly, occasionally or never? (**vecfreq**)

Almost every day	1
Weekly	2
Occasionally	3
Never	4
Don't know/DR	8
WNA (Missing)	9

68. Do you talk with your neighbors about breast-feeding? (**vecpech**)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 70)
WNA	9

117

69. During the last month, could you tell me if you have you talked about breast-feeding almost every day, weekly, occasionally, or never? (**pechfre**)

Almost every day	1
Weekly	2
Occasionally	3
Never	4
DK/DR	8
WNA (Missing)	9

70. I would like to ask some questions about how the women that you know in your community who have had babies recently are feeding their babies. Do you know someone in this community who has a baby less than six months old? (**conoce**)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 74)
WNA	9

71. Do you think that these (that) mother(s) are giving only breast milk, breast milk with other milks, or only other milks? (**mama1**)

Only breast milk	1
Breast milk and other milks	2
Only other milks	3
DK/DR	8
Was not asked (Missing)	9

72. Do you think that these mothers gave their babies water from the time they were born? (**mama2**)

They give them water	1
They don't give them water	2
DK/DR	8
Was not asked (Missing)	9

73. Do you think that these mothers are giving their babies other liquids before they are four months old? (**mama3**)

They give them liquids	1
They don't give them liquids	2
DK/DR	8
Was not asked (Missing)	9

74. In your opinion, who is the best person to give advice about breast feeding? (If the mother gives a name: Who is he/she?)

(mejor1, mejor2, mejor3)

		Order
Doctor	1	_____
Nurse	2	_____
Midwife	3	_____
Guardian	4	_____
Mother	5	_____
Mother-in-law	6	_____
Relative	7	_____
Friend/Neighbor	8	_____
Counselor	9	_____
Spouse	10	_____
Other (Specify)	11	_____

Don't Know/Does not remember 88

Was not asked (Missing) 99

75. Now, I would like to ask some questions about the birth of CHILD'S NAME. Where was CHILD'S NAME born? (nacio)

In a ministry hospital	1	
In a private hospital/clinic/doctor	2	
In a hospital of Seguro Social	3	
Health Center (Cesamo Cesar)	4	
At home	5	\ (If the answer is
In the house of a midwife	6	"at home" or "in
Other (Specify)	7	/ a midwife's
		home, or
Don't Know/Don't Remember	8	"other", skip to
Was not asked (Missing)	9	question # 79)

76. Was the delivery normal, or was it by cesarean? (normal)

Normal	1
Cesarean	2
DK/DR	8
WNA	9

77. How much time did you spend in the hospital/clinic before returning home? (If the mother says less than one day, mark 1)

(tiempos)

_____ (days)

Don't know/DR	88
WNA (Missing)	99

78. During the time that you spent in the hospital, did your baby stay with you in the same bed or the same room, or did they keep him/her in another place? (sitio)

In the same bed/room	1
Another place	2
Don't Know/DR	8
WNA (Missing)	9

79. Who attended your delivery? (parto)

Doctor	1
Nurse	2
Midwife	3
Relative	4
Friend/Neighbor	5
Mother/mother-in-law	6
No one/mother alone	7
Other (Specify)	8
<hr/>	
Don't Know/DR	88
WNA (Missing)	99

80. How long was it after the birth before you nursed you baby for the first time? (pechpri)

At the birth (30 minutes)	1	\ (If the answer is "at the
Within 1 hour after delivery	2	birth" or "W/in an hour"
(30-60 minutes)		/ skip to question # 82)
Between 1-7 hours after	3	
8-24 hours after	4	
1-3 days after	5	
4-6 days after	6	
7 days after	7	
Don't know/don't remember	8	
WNA (Missing)	9	

81. Why did you not nurse until then? (pormama)

		Order
The milk was not released	1	_____
The first milk was dirty	2	_____
(did not want to give him/her colostrum)	3	_____
Gave him/her chupon	4	_____
Was advised not to do so	5	_____
The hospital did not bring the baby	6	_____
The midwife did not bring the baby	7	_____
Mother did not want to	8	_____
Cesarean	9	_____
The baby was sick	10	_____
The mother was sick	11	_____
The baby was sleeping	12	_____
Other (Specify)	13	_____
<hr/>		
Don't know/no response	88	_____
Was not asked	99	_____

82. In the first hours after the birth of CHILD'S NAME, did you give him/her, or know if he/she was given (Read options):

	Yes	No	DK/DR
Plain water? (dioagua)	1	2	8
Water with something else? (with sugar, rice, apple, etc)	1	2	8
Other milks? (diolech)	1	2	8
Chupon? (diochup)	1	2	8
IV? (diosuer)	1	2	8
Litrosol? (diolitr)	1	2	8
Something else (Specify)	1	2	8
(diocos)			
WNA (Missing)	9		

83. During the first days, a mother produces milk that is yellow or clear (colostrum), that some call "thin milk" or "first milk"; Did you give your baby this first milk? (calostr)

Yes	1
No	2
DK/DR	8
WNA	9

84. After the delivery, did someone give you advice about when to begin to breast-feed or talk to you about breast feeding?

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 86)
WNA	9

85. Who gave you advice? (If the mother gives a name: Who is he/she?) (lacquie1, lacquie2, lacquie3)

		Order
Doctor	1	_____
Nurse	2	_____
Counselor	3	_____
Mother	4	_____
Mother-in-law	5	_____
Friend/neighbor	6	_____
Spouse	7	_____
Other Relative	8	_____
Midwife	9	_____
Other (Specify)	10	_____
<hr/>		
Don't know/DR	88	_____
Was not asked	99	_____

86. Did some one help you or teach you to how to place the baby to nurse him/her? (colocar)

Yes	1	
No	2 \	(If the answer is "no" or "DK",
DK/DR	8 /	skip to question # 88)
WNA	9	

87. Who helped you? (If the mother gives a name: Who is he/she?) (ayuquie1, ayuquie2, ayuquie3)

		Order
Doctor	1	_____
Nurse	2	_____
Counselor	3	_____
Mother	4	_____
Mother-in-law	5	_____
Other Relative	6	_____
Spouse	7	_____
Midwife	8	_____
Friend/Neighbor	9	_____
Other (Specify)	10	_____
<hr/>		
Don't know/DR	88	
WNA (Missing)	99	

88. Did someone help you or teach you how to have your milk expressed? (ordenar)

Yes	1
No	2
DK/DR	8
WNA	9

122

89. Did you have a consult for yourself after the delivery?
(postpar)

Yes	1	
No	2	\ (If the answer is "no" or "DK/DR",
DK/DR	8	/ skip to question # 97)
WNA	9	

90. Where were you taken care of? (atiende)

Midwife's home	1
Clinic	2
Health Center	3
Hospital	4
Interviewee's home	5
DK/DR	8
WNA (Missing)	9

91. Approximately how long after the birth did you have this consultation? (cuanpos)

In the first week	1
In 10 days	2
Between 10 and 40 days	3
More than 40 days	4
Don't know/DR	8
WNA (Missing)	9

92. During this consultation, did someone advise you or talk to you about breast-feeding your baby? (postcon)

Yes	1	
No	2	\ (If the answer is "no" or "DK/DR",
DK/DR	8	/ skip to question # 94)

93. Who gave you advice? (If the mother give a name: Who is he/she)? (postqui1, postqui2, postqui3)

		Order
Doctor	1	_____
Nurse	2	_____
Counselor	3	_____
Mother	4	_____
Mother-in-law	5	_____
Relative	6	_____
Friend/Neighbor	7	_____
Midwife	8	_____
Spouse	9	_____
Other (Specify)	10	_____
<hr/>		
Don't Know/DR	88	
WNA (Missing)	99	

94. During this consult, did someone help you or teach you how to have the milk expressed? (postord)

yes	1
No	2
DK/DR	8
WNA	9

95. During this consultation did someone advise you or talk to you about how to space pregnancies? (espacia)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 97)
WNA	9

96. Who gave you advice? (If the mother gives a name: Who is he/she)? (espquie1, espquie2, espquie3)

		Order
Doctor	1	_____
Nurse	2	_____
Counselor	3	_____
Mother	4	_____
Mother-in-law	5	_____
Other relative	6	_____
Friend/neighbor	7	_____
Midwife	8	_____
Spouse	9	_____
Other (Specify)	10	_____
<hr/>		
Don't know/DR	88	
WNA (Missing)	99	

97. Remembering your pregnancy, did you go to pre-natal check-ups? (prenata)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 104)
WNA	9

124

98. Where was your first pre-natal check up? (fuepre)

Hospital of the Ministry of Public Health	1
Hospital of Seguro Social	2
Private hospital, doctor or clinic	3
CESAMO	4
CESAR	5
Midwife	6
Factory	7
Other (Specify) _____	8
Don't know/Do not remember	88
Was not asked (Missing)	99

99. How many pre-natal check-ups did you go to?(numpre)
_____ (number of check-ups)

Don't know/do not remember	88
Was not asked (Missing)	99

100. During one of these check-ups did someone advise you or talk to you about breast-feeding your baby? (precons)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 102)
WNA	9

101. Who gave you the advice? (If the mother gives a name: Who is he/she)? (prequie1, prequie2, prequie3)

		Order
Doctor	1	_____
Nurse	2	_____
Counselor	3	_____
Mother	4	_____
Mother-in-law	5	_____
Other Relative	6	_____
Friend/neighbor	7	_____
Midwife	8	_____
Spouse	9	_____
Other (Specify)	10	_____
<hr/>		
Don't Know/DR	88	
Was not asked (Missing)	99	

125

102. At one of the prenatal check-ups, did someone teach you or show you how to have the milk expressed? (**preord**)

Yes	1
No	2
DK/DR	8
WNA	9

103. Did they examine your breasts during one of the pre-natal check-ups? (**examina**)

Yes	1
No	2
DK/DR	8
WNA	9

/

I 104. From the time that CHILD'S NAME was born, has he/she
I been taken to a healthy child (or growth and development)
I check-up? (un control o consulta de nino sano
I (o de crecimiento y desarrollo?)) (**sano**)

I

Yes	1
No	2
DK/DR	8

I

I 105. From the time that CHILD'S NAME was born, has he/she
I been taken to a consult for an illness? (**enfermo**)

I

Yes	1
No	2
DK/DR	8

I

I 106. From the time that CHILD'S NAME was born, has he/she
I been taken to be vaccinated? (**vacuna**)

I

Yes	1
No	2
DK/DR	8

I

I (If all the answers marked above (104-106), are "no" or
I "DK/DR", skip to question # 109, if the answer is "yes" to one
I of them, continue)

\

107. In any of these visits, have they given you advice or talked to you about breast-feeding your baby? (**ninocon**)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 109)
WNA	9

108. Who gave you advice? (If the mother gives a name: Who is he/she)? (ninoqui1, ninoqui2, ninoqui3)

		Order
Doctor	1	_____
Nurse	2	_____
Counselor	3	_____
Mother	4	_____
Mother-in-law	5	_____
Other relative	6	_____
Friend/neighbor	7	_____
Midwife	8	_____
Spouse	9	_____
Other (Specify)	10	_____
<hr/>		
Don't know/DR	88	
WNA (Missing)	99	

Now, I would like to ask some questions about family planning methods.

109. Have you had your first period after the birth? (Ya le vino la primera regla despues del parto?) (period1)

Yes	1	How long after the birth? _____
No	2	(days/weeks/months)
DK/DR	8	(period2)
WNA	9	

110. Are you pregnant now? (embara)

Yes	1	(If the answer is "yes", skip to question
No	2	# 113)
DK/DR	8	
WNA	9	

111. Are you using any method to prevent pregnancy? (metodo1)

Yes	1	
No	2	\ (If the answer is "no" or "DK/DR",
DK/DR	8	/ skip to question # 113)
WNA	9	

112. What method are you using? (metodo21, metodo22, metodo23)

Have not had sexual contact	1	
Pills	2	
IUD (DUI)	3	
Operation (Female sterilization)	4	
Spouse was operated on (vasectomy)	5	
Condom	6	
Injection	7	
Foam/cream/jelly	8	
Ovules (óvulo)	9	
Rhythm method (calendar)	10	
Withdrawal	11	
Lactation amenorrhea (MELA)	12	\ (If the answer is
Breastfeeding	13	/ "MELA" or "maternal
Other (Specify)	14	lactation, skip to
		question # 116)
<hr/>		
Don't know/Don't remember	88	
Was not asked (Missing)	99	

113. Have you heard of using breast feeding in order to prevent pregnancy? (mela)

Yes	1	
No	2	\ (If the answer is "no" or "DK/DR",
DK/DR	8	/ skip to question # 116)
WNA	9	

114. What do you have to do to use this method? (Can mark more than one answer) (mela21, mela22, mela23)

Nurse exclusively/only breast-feed	1
Child less than 6 months old	2
Not to have menstruated	3
Nurse frequently day and night	4
Breast-feed	5
Other (Specify)	6
<hr/>	
Don't know/Do not remember	8
Was not asked (Missing)	9

115. Do you think this method works? (opina)

Yes	1
No	2
DK/DR	8

116. Now, I would like to ask some questions about radio and television. Do you listen to the radio? (radio)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question #119)

117. How many days a week do you listen to the radio? (raddias)

_____ (days)

Don't Know/DR	8
WNA (Missing)	9

118. How many hours of radio do you listen to daily? (If the mother says 1 hour or less, mark 1) (radhrs)

_____ (hours)

All day	25
Don't know/DR	88
WNA (Missing)	99

119. Have you ever heard any advertisements or a program about breast feeding? (oido)

Yes	1
No	2 \ (If the answer is "No" or "DK/DR",
DK/DR	8 / skip to question # 121)
WNA	9

120. What did the advertisement or program say? (anuncio1, anuncio2, anuncio3)

Don't know/don't remember	8
Was not asked (Missing)	9

121. In this house, is there a radio? (casarad)

Yes	1	Does it work?	Yes 1	No 2	DK/DR 8
No	2		(funrad)		
DK/DR	8				

122. Do you watch television? (tv)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 125)
WNA	9

123. How many days a week do you watch television? (tvdias)

_____ (days)

Don't know/DR	8
WNA (Missing)	9

124. How many hours of television do you watch a day? (If the mother says 1 hour or less, mark 1) (tvhrs)

_____ (hours)

All day	25
Don't know/DR	88
WNA (Missing)	99

125. Have you ever seen any advertisements or a program about breast feeding? (ver)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 127)
WNA	9

126. What did the advertisement or program say?
(anunver1, anunver2, anunver3)

DK/Do not remember	8
Was not asked (Missing)	9

127. In this house, is there a television? (casatv)

Yes	1	Does it work? Yes 1	No 2	DK/DR 8
No	2	(funtv)		
DK/DR	8			
WNA	9			

128. To end, I would like to ask some last general questions about you and your home. At some time, did you attend school?

(educ)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 130)
WNA	9

129. What grade did you reach in your studies? (Circle the last grade completed) (edcyrs)

Elementary	1	2	3	4	5	6	
Secondary	1	2	3	4	5	6	
University	1	2	3	4	4	6	7 or more
Don't Know/Don't Remember					88		
Was not asked (Missing)					99		

130. Normally, do you work? (trabajo)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 133)
WNA	9

131. Inside or outside the home? (casa)

Outside the home	1		
In the home	2	What do you do? (casahac)	
		Home maker	1
		Sewing	2
If the answer is "in the home",		Cooking	3
skip to question # 140		Manual work	4
		Other (Specify)	5
		DK/DR	8

132. Have you already returned to work? (regreso)

Yes	1 (If the answer is "yes", skip to question
No	2 # 134)
DK/DR	8
WNA	9

133. Do you have plans to work in the next two months? (dosmese)

Yes	1
No	2 \ (If the answer is "no" or "DK/DR",
DK/DR	8 / skip to question # 140)
WNA	9

134. Where do you work? (dondtra)

Factory (Maquila)	1
Domestic worker	2
Trade/Commerce	3
Government	4
Agriculture	5
Day Care	6
Teacher	7
Health Worker	8
Secretary	9
Other (Specify)	10
<hr/>	
Don't know/DR	88
Was not asked (Missing)	99

135. What is your work schedule? (jornada)

Day	1
Night	2
Mix	3
Other (Specify)	4
<hr/>	
Don't know/DR	8
WNA (Missing)	9

136. How old was your baby when you returned to work? (bebereg)

_____ (age) _____ (months/weeks/days)

Don't know/Don't remember	8
WNA (Missing)	9

137. Generally, while you are at work where is your baby?
(cuida11, cuida12, cuida13)

In Mother's home	1
In relative's home	2
At work with respondent	3
In Child care	4
At home	5
In Mother-in-law's home	6
In friend/neighbor's home	7
Other (Specify)	8
<hr/>	
Don't know/DR	88
Was not asked (Missing)	99

138. Generally, who takes care of CHILD'S NAME while you are working? (cuida21, cuida22, cuida23)

Mother	1
Mother-in-law	2
Relative	3
Friend/Neighbor	4
Domestic Worker	5
Older siblings	6
Other (Specify)	7
<hr/>	
Don't know/DR	88
WNA (Missing)	99

139. What food is your baby given while you are working? (If the mother answers "bottle", inquire: "What is put in it?")

(aliment1, aliment2, aliment3)

		Order
He/she breast-fed	1	_____
Expressed milk	2	_____
Other milks	3	_____
Foods	4	_____
Mother's milk and other milks	5	_____
Other liquids	6	_____
Other (Specify)	7	_____
<hr/>		
Don't know/do not remember	8	
Was not asked (Missing)	9	

140. How long have you lived in this community or neighborhood? (vive)

_____ (years)

All her life	55
Less than 1 year	50
DK/DR	88
WNA (Missing)	99

141. Have you lived more in the city or in the country? (ciucamp)

Country	1
City	2
Don't know/DR	8

142. Do you have close friends, apart from those that live in this house, that live in this community or neighborhood? (famcom)

Yes	1	How many of them are adults? _____ (adulcom)
No	2	\ (If the answer is "no" or "DK/DR",
DK/DR	8	/ skip to question # 144)
WNA	9	

143. How often do you see these friends that live in the community, would you say: almost every day, weekly, occasionally, or never? (freqfam)

Almost every day	1
Weekly	2
Occasionally	3
Never	4
Don't know/DR	8
Was not asked (Missing)	9

144. How often do you chat with your neighbors, would you say: almost every day, weekly, occasionally or never? (freqvec)

Almost every day	1
Weekly	2
Occasionally	3
Never	4
Don't Know/DR	8
Was not Asked (Missing)	9

145. In this house, where do you get your water? (If the mother answers "Faucet", inquire): Inside or outside the residence? Inside or outside the premises? (viveagu)

Faucet within the residence	1
Faucet outside the residence, but on the premises	2
Faucet outside the premises less than 100 meters	3
Faucet outside the premises, 100 meters or more	4
Natural source: river, brook, watershed, lake, spring, etc.	5
Well with hoist (without pump)	6
Well with pump	7
Buy it	8
Protected water source	9
Other (Specify)	10
<hr/>	
Don't know/Do not remember	88
Was not asked (Missing)	99

146. What type of sanitary service is there in this residence? (If the mother says "Latrine", inquire:) Does it have running water or is it only a pit? (inordoro)

Toilet/Water Closet	1
Hydraulic latrine	2
Latrine/simple pit	3
Does not have one/open air	4
Other (Specify)	5
<hr/>	
Don't know/do not remember	8
WNA (Missing)	9

BH

147. In this dwelling, is there a:

	Yes, it works	Yes, doesn't work	Do not have	DK/DR
Refrigerator (refri)	1	2	3	8
Bicycle (bici)	1	2	3	8
Music system (graba)	1	2	3	8
Motorcycle(moto)	1	2	3	8
Car (carro)	1	2	3	8

148. How many rooms for sleeping are there in this residence?

(cuartos)

_____ (number of rooms)

Don't know/do not remember 8
Was not asked (Missing) 9

149. Is there electricity in this residence? (**elec**)

Yes 1
No 2
DK/DR 8
WNA 9

150. What is the predominate building material of this dwelling?
(through observation) (**piso**)

Earth 1
Wood 2
Cement slabs 3
Mud/Clay Bricks 4
Mosaic Bricks 5
Other (Specify) 6

We are done, Thank you!

135

Interviewer:

Was there someone present during the interview? (present)

Yes	1
No	2

Who? _____ (quien)

Observations about the interview: _____

Race of the mother: (raza)

Mestiza/White	1
Black	2
Could not be determined	3

CERTIFICATION

I certify that the content of this form responds exactly to the answers offered by the participant, who was selected and interviewed according to the instructions of CIME.

I am aware that any violation on my part, in regards to the interview or method of selection, could result in damage not only me, but also CIME and its client.

WELLSTART INTERNATIONAL

Wellstart International is a private, nonprofit organization dedicated to the promotion of healthy families through the global promotion of breastfeeding. With a tradition of building on existing resources, Wellstart works cooperatively with individuals, institutions, and governments to expand and support the expertise necessary for establishing and sustaining optimal infant feeding practices worldwide.

Wellstart has been involved in numerous global breastfeeding initiatives including the Innocenti Declaration, the World Summit for Children, and the Baby Friendly Hospital Initiative. Programs are carried out both internationally and within the United States.

International Programs

Wellstart's *Lactation Management Education (LME) Program*, funded through USAID/Office of Nutrition, provides comprehensive education, with ongoing material and field support services, to multidisciplinary teams of leading health professionals. With Wellstart's assistance, an extensive network of Associates from more than 40 countries is in turn providing training and support within their own institutions and regions, as well as developing appropriate in-country model teaching, service, and resource centers.

Wellstart's *Expanded Promotion of Breastfeeding (EPB) Program*, funded through USAID/Office of Health, broadens the scope of global breastfeeding promotion by working to overcome barriers to breastfeeding at all levels (policy, institutional, community, and individual). Efforts include assistance with national assessments, policy development, social marketing including the development and testing of communication strategies and materials, and community outreach including primary care training and support group development. Additionally, program-supported research expands biomedical, social, and programmatic knowledge about breastfeeding.

National Programs

Nineteen multidisciplinary teams from across the U.S. have participated in Wellstart's lactation management education programs designed specifically for the needs of domestic participants. In collaboration with universities across the country, Wellstart has developed and field-tested a comprehensive guide for the integration of lactation management education into schools of medicine, nursing and nutrition. With funding through the MCH Bureau of the U.S. Department of Health and Human Services, the NIH, and other agencies, Wellstart also provides workshops, conferences and consultation on programmatic, policy and clinical issues for healthcare professionals from a variety of settings, e.g. Public Health, WIC, Native American. At the San Diego facility, activities also include clinical and educational services for local families.

Wellstart International is a designated World Health Organization Collaborating Center on Breastfeeding Promotion and Protection, with Particular Emphasis on Lactation Management Education.

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