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A qualitative study of the patterns of infant feeding and care in the Hinche area of Plateau Central, Haiti

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1. INTRODUCTION

The overall objective of the IFPRI-Cornell-World Vision/Haiti project is to compare, in an operational context the difference in impact and cost-effectiveness of two models for delivering integrated food and nutrition programs with a food supplementation component. The models being compared are the traditional *recuperative* approach and the innovative *preventive* approach, defined as follows:

- 1) In the traditional *recuperative* model, children are targeted to receive food supplements based on their nutritional status measured during growth monitoring activities. Children identified as having a weight-for-age below $-2SD$ from the median are eligible to receive food rations for a period of up to 9 months.
- 2) In the *preventive* model, food supplements are targeted to all children younger than two years of age, irrespective of their nutritional status. In this case targeting of the food supplements is based on age only and is expected to *prevent* growth faltering and malnutrition, rather than *curing* it.

As part of the project, the IFPRI-Cornell team will assist World Vision in designing and implementing a fully developed preventive model, which will include adapting the current recuperative education model and its specific messages to the needs of a true preventive model. The first step in this process, which was initiated in November-December 2001 and has been reported previously¹, was to gather information on the existing nutrition and health education models currently used in Haiti. This helped identify data needs and guided the design of the pre-baseline survey qualitative study reported here.

The objective of this qualitative study was to gather information on general patterns of infant and child feeding practices to assist in the development of the baseline quantitative survey for the evaluation. This information will also be used to design the next phase of the development of the nutrition and health communications program to be implemented by World Vision, Haiti in the context of this project.

The specific aims of the qualitative study were to gather information on:

1. Community norms about infant and child feeding practices
2. Current infant feeding practices
3. Locally relevant indicators of household socio-economic status

The study used a variety of qualitative research methods, primarily interview-based techniques. Key informant interviews and in-depth interviews with mother respondents were conducted. Key informants were selected to cover a range of community members, e.g., mothers of young children, older women, and health agents.

¹ Menon, P., M. Ruel, G. Pelto and J.-H. Habicht. Review of health and nutrition education messages and delivery system currently used in Haiti, and recommendations for further research. Report submitted to FANTA, December 31, 2001.

2. METHODS

A total of 24 interviews were conducted with 18 young mothers and 6 key informants. The interviews were carried out in five different communities in the rural areas surrounding Hinche, the main town in the Central Plateau region, where the evaluation study will be conducted. Two of the authors, who were both trained in the social sciences and have many years of experience with qualitative research in Haiti, carried out the interviews.

Mothers were recruited for the interviews by World Vision community volunteers, using pre-defined selection criteria: i.e., child age and socioeconomic status of the household (poor or relatively well-off, as judged by the community volunteers). Children's age ranged from 0 to 24 months and three categories were created: up to 6 months, 6 to 12 months, and 12 to 24. This age range was chosen specifically to yield information on the patterns of complementary feeding practices by child age in this rural area of Haiti.

Interviews with key informants were used to gather data on general patterns of infant feeding as well as any beliefs that might constrain (or facilitate) the adoption of recommended feeding behaviors. They also included questions related to the measurement of women's organizational skills and of household socioeconomic status based on local definitions. The interviews with the mothers covered a variety of topics related to child feeding (including both their reported practices and their knowledge and attitudes), and gathered information on their time allocation and use of child care alternatives, their previous child care experience and sources of information, and their perception of their child's appetite and health. The list of topics covered in the interviews is presented in Boxes 1 and 2.

Box 1. Topics investigated in interviews with key informants.

Feeding practices and attitudes for different age groups (0-3; 3-6; 6-9; 9-12; 12-24 months):

- Types of foods
- Frequency and schedule of feeding:
- Mode of feeding and assistance while feeding:
- Timing of introduction of different foods

Women's organization skills

- Potential indicators to assess whether or not a woman is "organized"

Indicators of household socioeconomic status (SES)

Box 2. Topics investigated in interviews with young mothers.

Current feeding practices depending on age of the youngest child

- Types of foods
- Timing of introduction of different foods (only for infants 0-9 months)
- Frequency of feeding
- Timing of meals
- Mode of feeding and assistance while feeding:

Maternal perception of child's appetite and general health status

Maternal time, workload and child care arrangements

- Types of alternate child care arrangements mothers use when they work outside the home or go to the market
- Level of control mothers exert on substitute child caregivers

Previous child care experience and current sources of information

- Types of previous child care experience women have (e.g., only in child-“minding” or also in more involved tasks like feeding, bathing, caring for children when ill, etc.)
- Sources of information on child feeding practices

Maternal knowledge and attitudes regarding child feeding

3. RESULTS

3.1 Description of the study area:

The current study was done in the Central Plateau region of Haiti, around the town of Hinche which is about 120 kilometers from the capital city of Port-au-Prince. The communities selected for the study in the Hinche area are listed in Table 1. In general the study areas were homogeneous with respect to agricultural production, employment and commercial activities of the local residents, grain storage facilities and ecological conditions. The terrain is hilly, with small streams and one river running across the area. The commonly cultivated plants are corn, millet and a variety of beans. The study was done during the dry season.

3.2 Sample characteristics

A total of 4 key informant interviews, 2 group interviews, and 18 interviews with mothers of young children were conducted. All interviews were done using open ended question guides. Table 1 shows the distribution of the interviews by community.

Table 1. Distribution of the sample by study community

Community	No. of mother respondents	Key informants	Total
Carrefour Ledan	2	0	2
Marmont	3	2	5
Morique	5	1	6
Papaye	5	2	7
Rodey	3	1	4
TOTAL	18	6	24

The mother-respondents were between 18 and 40 years of age. Other characteristics of the sample of mother respondents interviewed are presented in Table 2. In addition to the characteristics presented here, other socioeconomic status characteristics assessed were house construction (wall, floor and roof materials) and type and number of household assets.

Table 2. Sample characteristics

Characteristic	Number
Respondents interviewed	18
Number of respondents engaged in income-generating activities	9
Marital status	
Married	9
Living together	5
Single	3
Widowed	1
No schooling	4
Ever participated in health education program	13
	Mean (range)
Children	
Mean age (months)	9.3 (0-23)
	Number
Female	8
	Number
Households	
Water source for drinking	
Tap	16
River	2
Water source for cooking	
Tap	10
River	8
Water source for bathing and washing	
Tap	7
River	11
Latrine type	
None	7
Pit	2
Wooden slabs	3
Cement slabs	6
Owned land	12
Household assets possessed	
Bed	16
Bicycle	3
Clock	2
Chairs	13
Radio	7
Television	0
Table	15
Cupboard to store dishes	2
Chickens/other small animals	2
Mule/horse	0
No. of rooms for sleeping	
None	1
1 to 2	9
3 to 4	8

3.3 Interviews with key informants

3.3.1 Community norms about child feeding practices

Community norms related to child feeding practices were obtained through the key informant interviews. Informants were asked to list the different types of foods that were commonly fed to children in different age groups. In addition, the informants were interviewed about other norms related to feeding and caring for children, as well as food-related beliefs that might influence the adoption of recommended practices.

Infants: birth to 6 months

The key informant interviews indicated that infants are given herbal teas, water, sugar water, and oil from the “pelma christi” palm to expel the meconium soon after birth. They concurred that even breastfed children should be fed other liquids and/or foods at least once a day. The liquids (primarily teas) are recommended primarily to prevent or to treat colics while the foods (primarily gruels made from salty or sweet crackers cooked with water and sugar) were often intended to provide some respite from breastfeeding to the lactating mother. The gruels were also intended to “give strength” and comfort the infants so that they could sleep well. Heavier foods such as rice, cornmeal, millet, beans and meat (i.e., family staple foods) were not considered appropriate for children between 0 and 6 months of age. However, one of the key informants indicated that in her area, people would start feeding the infant the sauce from meat dishes as early as eight days after birth, as a “fortificant”.

Other foods commonly fed to very young infants were *soupe de pain* (literally “bread soup” – a porridge made with bread, water, salt and margarine) and various flour gruels (*bouillie de farine*). These gruels were made using flour made of plantains, manioc, or white wheat flour. In addition, the key informants indicated that parents would feed the infants small tastes of food, mashed well, from their plates so that the infants would get used to the taste of foods other than breastmilk.

Infants: 6 to 12 months

Between six and twelve months of age, key informants felt that infants should continue to be breastfed as much as possible, and continue to be fed special gruels as well as other family foods. All key informants felt that children should be fed 2-3 times a day, but often said that this was beyond the means of many families. Children in this age group were to be fed family foods that were mashed well so that the child could eat it. There was some difference of opinion regarding whether children should be fed eggs or not. The older women said that eggs could lead to rotten teeth or even to convulsions. The health agents confirmed this belief, but they also stressed that people did not feed their children eggs because they just could not afford it. The only other food that was not given to children in this age group was meat, and this was primarily because children did not have the ability to chew meat yet. Children were usually fed the sauce the meat was cooked in, but not the meat itself.

Children 12 to 24 months

The key informants indicated that children between 12 and 24 months should be fed all the foods that adults eat and that are cooked for the family, without exception. Most of the key

informants said that children could begin eating on their own after they were 12 months old, while infants between 6 and 12 months of age had to be fed by putting the food in their mouths.

Overall, food restrictions related to feeding young children appeared to be rare. The only two prescriptive avoidances that were related to feeding children were that infants should not be fed sweet potatoes between the age of 6 to 12 months because this would “lead to loose stools”. Similarly, eggs were believed to lead to “convulsions” or rotten teeth in children less than six months of age. However, a number of key informant mothers believed eggs could be introduced to children as early as by 2 months of age, so it is not clear how widespread this belief is.

Lactating mothers

The prescriptive practices/avoidances for lactating women were numerous compared to those for young children. Foods that were believed to increase the production of breastmilk were unripe papaya (cooked like a soup with rice and meat). The key informants also mentioned that in general, foods that are white in color or that contain blood were to be avoided by lactating women. These included foods such as white peas, okra, blood, liver, tripe, certain types of fish, crabs, white potatoes, manioc and fresh cow’s milk.

Since these taboos were not explored in the interviews with the young mothers, it is not clear how well adhered to they are. Anecdotal evidence suggests that the beliefs related to the avoidance of certain white foods during lactation are widespread in Haiti. However, this will be followed up in the next stage of qualitative research to understand the extent to which they are real constraints to the adoption of recommended feeding practices.

3.3.2 Potential indicators to assess whether or not a woman is “organized”

Information from three key informants is available to help understand how community members assess whether a woman is “organized” or not. All three informants used indicators reflecting the general cleanliness and tidiness of the woman’s house and immediate environment as indicators of whether or not women were organized. One respondent identified the following criteria to define an organized woman:

- The house is clean
- The glasses and vessels are clean
- The bed is made
- The yard is clean
- Everything is in place

Another respondent, when asked the same question answered that the criteria that can be used to determine whether a *poor* woman is organized or not are the following:

- The yard is clean
- The floor has been sprinkled with water (to prevent the dust from rising and to keep the house fresh)
- The house is tidy
- The few things the person has are clean (whatever she has is well kept and clean)

The third respondent had a similar answer to the previous two and indicated that when you find a house dirty with trash, you can say that the person is not organized.

In sum, all three respondents agreed that the most accurate reflection of whether a woman is organized or not is the cleanliness and tidiness of her house and compound.

3.3.3 Definition of household socioeconomic status

Locally specific indicators of socioeconomic status were identified through interviews with the key informants. In these interviews, the key informants were asked to list the characteristics of the wealthiest people in their communities and those of the poorest people in their communities. In addition to this, data on socioeconomic characteristics of the mother-respondents were gathered in an open-ended manner during the interviews with them. The information obtained from these interviews was compiled in order to generate a comprehensive list of household characteristics and specific categories within those characteristics (e.g., types of latrines, water source, etc.).

The original list of items that were to be assessed in the interviews with key informants was based on the Haiti EMMUS (Enquête de Morbidité, Mortalité et Utilisation des Services, 2000) and was developed further by Yves-François Pierre, one of the authors, who has worked in the Hinche area for many years. The following categories of information were assessed in the initial list:

- 1) Housing construction information, e.g., floor, wall and ceiling material,
- 2) Source of drinking water, cooking water and washing/bathing water
- 3) Type of latrine,
- 4) Types and number of household assets (e.g., furniture, clock, radio, etc.)
- 5) Ownership of land.

The categories for the household construction, latrine and water sources were defined based on the information that emerged from the interviews with young mothers and the key informant interviews about household SES. Additional characteristics that were identified from the interviews with key informants were:

- 1) Type of small animals owned by the household
- 2) Type of grain storage
- 3) Home ownership
- 4) Food security status (i.e., how long does the food from their land last)
- 5) How many days they could afford treatment for a sick member of the household

The detailed list of socioeconomic characteristics that were identified in the qualitative study as potentially useful for the baseline quantitative survey is presented in Annex 1. This list will be pre-tested and revised for use in the baseline survey.

3.4 Interviews with mothers on child feeding practices

3.4.1 Assessment of child feeding practices

The feeding and care practices of the mother-respondents were assessed using 24 hour recalls, seven-day food frequency recalls and open-ended questions. The 24 hour recall interview asked about foods given to the infant, the schedule of feeding and whether the specific foods were made or bought specially for the infant (or whether they came from the family pot). Also, for each feeding episode the mother mentioned, she was asked whether the child had initiated the episode by either crying or asking for food, or whether she had initiated the feeding episode herself.

A list of food groups and specific foods to include in the food frequency recall were defined based on a pretest of both the key informant and the mother-respondent questionnaires. In addition, mothers of children who were younger than 9 months were asked about the pattern of introduction of foods other than breast milk to their infant. Specifically they were asked to recall what types of liquids and foods they had introduced to their infants, when these were introduced and why.

In the analysis presented here, comparisons were made to identify differences in feeding patterns by child age. Seventeen of the children were currently breastfed at the time of the interview, and most of the mothers indicated that breastfeeding was on demand, when they were in the home and with the infant.

3.4.2 Types of foods fed to infants and young children

The data obtained from the interviews with mother-respondents concurred well with the data from the key informant interviews. Table 3 presents data compiled from the 24 hr recalls and food frequency recalls and shows the types of foods fed to children in different age groups. Table 4 shows the number of children who were fed each type of food in the past 24 hours, Table 5 shows the number of children in each age group who were fed each type of food in the past 7 days. The results presented in these tables are described by age group, as follows:

1) Infants 0 to 6 months

Tables 3-5 show that in addition to breast milk, the types of foods and liquids fed to children between 0 and 6 months of age were herbal teas made with leaves and spices, and gruels made with crackers, bread or flours. Thus, infants in this age group were mostly fed cereals that are not part of the adult staple diet, with the exception of one infant who was fed rice in the previous week. As seen in Table 5, although semi-solid foods were fed to young infants before 6 months of life, the average frequency of intake of these foods was low.

2) Infants 6 to 12 months

Because only 2 children were in the 9-12 month-old age group, the 6-9 and 9-12 month age groups are combined in this section. The types of foods fed to children in this

age group (Table 3) included a variety of family foods such as staples (rice, cornmeal, millet, manioc, and bread), beans (black beans, congo beans) and in a few cases, vegetables (carrots, green leafy vegetables, cabbage, okra). Children in this age group were not fed meat; their mothers indicated that they couldn't chew the meat yet, so they were only given some of the sauce from the meat dishes. The gruels (made of crackers or bread) were still fed to infants between 6 and 9 months, mainly as breakfast foods and snacks. Infants between 9 and 12 months of age were fed more family foods, including soups and stews and fewer of the gruels and porridges..

The 24 hour recall data (Table 4) revealed that in the 6-12 month age group, infants had been fed primarily cereal based foods in the past day, and none of the infants had been fed vegetables, fruits or meat in the previous 24 hours. The 7 day food frequency indicates that the average number of times children in this group were fed fruits, vegetables, and eggs was only once per week (see Table 5). Meat, fish and poultry were also absent from their diet. This suggests that the diets of infants in this age group are likely to be deficient in critical micronutrients like vitamin A, iron and zinc, both in quantity and in their bioavailability (because they are mainly from plant sources)².

3) Children 12-24 months

The data in Table 3 indicates that between 12 and 24 months, the pattern continues to progress towards integrating the child's diet with that of the family. Snacks given to these children are either leftovers from the food offered to them during the day or foods bought from the market, e.g., bread with sugar water or crackers.

The diversity of foods consumed in the past 24 hours is higher than for the younger age groups, as shown in Table 4. Two of the six children in this age group had been fed vegetables (including green vegetables), three had been given fruit juice, and 2 had been fed meat, poultry or fish in the past 24 hours. The 7-day food frequency also shows the same pattern of increasing dietary diversity by age. The mean number of times children in this age group were fed other vegetables, fruits, juice and meat was substantially higher than in the younger age groups, but still low overall (1-2 times/week, on average).

The data presented here draw attention to the poor quality of the early complementary foods fed to young infants, in particular the gruels made with crackers (salty or sweet), bread or white flour. The diets of older infants appear to be better at least in that they are exposed to a variety of foods, albeit infrequently. Thus, in addition to actively promoting and supporting exclusive breastfeeding up to 6 months, future research in this area will explore ways to develop and promote improved recipes for complementary foods starting at 6 months, to replace or enrich currently used low nutrient density gruels. Additionally, ways to incorporate more micronutrient

² The types of vitamin A and iron present in animal products are more bioavailable (i.e. more easily absorbed and used by the body) than the types present in plant foods. Zinc absorption is also reduced by some substances present in plant foods, and thus, zinc from plant foods is also less bioavailable than zinc present in flesh meat for example.

rich foods, possibly through nutritious snacks, into the diets of older infants and young children will be explored.

Table 3. Foods fed to children at different ages (combined information from 24-hour and 7-day recalls)

Type of food/liquid	Examples of foods	Number of children fed these types of foods
0-6 months of age (n=5)		
Gruels	Made with salt crackers/bread/white flour	3
Teas	Primarily made with orange leaves/basil/garlic	2
Rice and beans	White rice, bean sauce	1
6-9 months of age (n=5)		
Gruels	Made with salt crackers/bread/white flour/grated plantain/sweet crackers	3
Family staples	Rice (cooked plain/with beans/with vegetables, cornmeal, manioc, millet, cassava, mashed potatoes)	3
Beans	Black beans (puréed),	3
Soups/stews	Made with vegetables, plantains	3
Juices	Carrot juice, orange juice (made with water and sugar)	2
Fruits	Bananas	2
Meat/poultry/eggs	Note that this is usually the sauce that meat/poultry was cooked in. Only egg yolks were fed to children in this age group	2
Teas		0
9-12 months of age (n=2)		
Gruels	Made with bread/ grated plantain/sweet crackers	
Family staples	Rice, cornmeal, sweet potato	2
Beans	Congo beans (pois congo, pois noir)	2
Soups	Made with vegetables, plantains	2
Meat/poultry/eggs	Meat in sauce or eggs	1
Snacks	Bread with sugar water	1
Juice	Carrot/orange/lemon juice (made with water and sugar)	0
12-24 months old (n=5)		
Gruels	Made with white flour	1
Family staples	Rice (plain/cooked with vegetables/cooked with beans), spaghetti, bulgur, millet, cornmeal	5
Beans	Black beans, Congo beans	5
Vegetables	Gombo, toufé (mixed vegetables), soups,	4
Eggs/meat	Boiled or fried egg, meat in sauce,	4
Snacks	Bread with sugar water, crackers, bread with peanut butter	2
Juices	Lemon, orange, grapefruit (with sugar and water)	2

Table 4. Number of children fed different types of foods, by age group (information from 24-hour recalls)

Received in past 24 hours	Child age categories (months)				Total N=18
	0-6 (n=5)	6-9 (n=5)	9-12 (n=2)	12-24 (n=6)	
Staple food (rice, maize, bread, etc)	3	4	2	6	15
Beans	1	1	1	6	9
Carrots	0	0	0	2	2
Green vegetables	0	0	0	1	1
Fruits	0	0	0	0	0
Juice	0	1	0	3	4
Milk or milk products, including breastmilk	5	3	2	4	13
Meat/fish/poultry	0	0	0	2	2
Eggs	0	1	0	0	1

Table 5. Mean frequency of intake of various foods, by age group (information from 7-day food frequency recalls)

	No. of times the child was fed each food in the past 7 days												
	Rice	Cornmeal	Millet	Other staples (bread/gruels)	Beans	Carrots	Other vegetables	Green vegetables	Fruits	Juice	Meat/fish/ poultry	Eggs	Milk/milk products including breast milk
CHILD													
AGE													
0-6 (n=5)	1	0.4	0	3.2	1.2	0	0.6	0	0	0	0	0	5.6
Std. Deviation	1.4	0.9	0	3.1	2.7	0	0.9	0	0	0	0	0	3.1
6-12 (n=7)	2.71	0.29	1.00	4	2.1	0.9	0.71	1	0.71	0.71	0.14	0.90	6.7
Std. Deviation	2.69	0.48	1.73	3.0	2.4	1.86	0.95	1.83	1.25	0.95	0.4	1.2	0.7
12-24 (n=6)	3.16	1	1.66	3.50	4.83	0.50	2	0.50	1.66	1.33	0.83	0.66	5.83
Std. Deviation	2.93	.89	1.03	2.25	2.40	0.84	2.53	0.57	2.73	1.97	1.33	1.03	2.85

3.4.3 Timing of introduction of foods

Mothers with infants younger than 9 months of age were asked to recall the timing of introduction of liquids and foods other than breastmilk to their infant and the reasons for introducing these types of liquids and foods. The findings, summarized in Table 6, show that certain liquids and foods are introduced very early in life, often as early as when the infant is one month old. The types of liquids and foods given to very young infants (less than 3 months of age) are mainly water, teas, sugar water, and gruels made of bread or crackers boiled in water, or flours (wheat flour, plantain).

The main reason reported for giving children teas is to prevent or cure colic while the gruels are given when the infants continue to cry after being breastfed (which mothers interpret as meaning that the child is still hungry). Some mothers also report that they use these gruels to lighten the 'load of breastfeeding'. A number of breastfeeding women and key informants expressed the notion that mothers felt fatigued by the process of constantly breastfeeding an infant on demand, and giving it something else to eat once or twice a day was a way to protect themselves. A quote that reflected this attitude was:

“The child is suckling me too much and I am going to turn into a small woman (*“Li tire mama trop, mama li tounen zo poban”*.) That's why we give them other food.”

-- (Mother-respondent 8, mother of a 4-month old child)

“Intensive and long term breastfeeding makes the mother weak and ages her (*Lè ou bay ti moun tete tout tan, ou vide avan dat ou, sa fè ou vye*).”

-- Key informant 4 (a 70 year old woman)

Table 6 also shows that the reasons for giving the child foods other than breast milk change with age. Between 0 and 3 months, the reasons for feeding other foods and liquids are related mainly to parental concerns about the infant's colic or gas, and about allowing the child to sleep well, while also giving the mother respite from constant breastfeeding. Later on, the reasons for introducing certain foods include giving strength to the infant and getting him/her used to the taste of other foods.

In future work, we will further explore the reasons for introduction of different foods and liquids to young infants, with a focus on identifying feasible ways to prevent this practice and to support exclusive breastfeeding up to 6 months of age. Also, we will explore the extent to which feeding of different foods between 3 and 6 months is motivated by a desire to have the child “exposed” to these foods, as contrasted with the perception that they are nutritionally valuable or necessary for the child's health.

Table 6. Timing of introduction of new foods to infants between 0 and 9 months

Timing of introduction	Type of food	No. of children in 0-9 mo age group who were fed this (Total n=10)	Reasons for introduction
Before 1 month	Water	4	To quench the infant's thirst
Before 1 month	Tea made with orange leaves (also includes basil and garlic sometimes)	5	To treat gas (colic)
Before 1 month	Gruel (salt crackers)	1	Mother did not have the strength to breastfeed all the time.
1 month	Sugar water	2	Calm the child's hunger
1 month	Gruels (white flour/bread)	4	Infant continued to cry after breastfeeding
1 month	Mashed ripe banana	1	To give strength and to relieve the mother
2 months	Sugar water	2	To calm the child
2 months	Gruels (salt crackers/bread/white flour)	4	To lighten the load of breastfeeding and calm the crying infant. Also, the child would sleep well and allow the mother to work
3 months	Mashed plantain with sauce, rice with beans, carrot juice	2	To lighten the load of breastfeeding
4 months	Egg yolk	1	For vitamin A
4 months	Gruel of flour (wheat, plantain, manioc), ripe banana,	5	To give strength To get the infant used to the taste of other foods
5 months	Gruel (bread/white flour); mashed plantains/potatoes with herring sauce; rice with bean sauce	4	Mother felt weak /child continued to cry after the breastfeed
After 6 months	Rice with bean sauce, Gruel of white flour, cornmeal with greens, rice with okra, cornmeal with herring, bread, etc; fruits, vegetables, bean sauce,	3	To get the child used to the taste of other foods. The child was capable of eating these foods at this time

3.4.4 Feeding frequency

The 24-hour recalls were used to identify how frequently children were fed during the day, and to distinguish between the frequency of feeding meals and the frequency of feeding snacks. The data was disaggregated by age group (Table 7).

As expected, the frequency of non-breast milk feeding episodes increases with age. The same pattern of increasing frequency is seen for both meals and snacks. Current recommendations for frequency of feeding are: 2-3 times for infants 6-9 months; 3-4 times for infants 9-12 months; and 4-5 times for children 12-24 months (Linkages 1999)³. Clearly, children in this sample were fed on average much less frequently than the recommendations. Considering the apparently low energy and nutrient density of the complementary foods (porridges made of crackers, flour or bread), and the low frequency of feeding, it is likely that these children are far from meeting their daily requirements for both energy and micronutrients.

Table 7. Feeding frequency by child age

Child age categories (months)	N		Number of meals + snacks in past 24 hours	Number of meals in past 24 hours	Number of snacks in past 24 hours
0-6	5	Mean	1.20	.80	.20
		Range	0-2	0-2	0-1
6-9	5	Mean	2.00	1.40	.40
		Range	0-4	0-4	0-2
9-12	2	Mean	2.50	2.00	.50
		Range	1-4	1-3	0-1
12-24	6	Mean	3.33	2.50	.83
		Range	1-5	1-3	0-2
Total	18	Mean	2.28	1.67	.50
		Range	0-5	0-3	0-2

The proportion of feeding episodes reported as having been initiated by the child was calculated by dividing the number of feeding episodes the mother said were child initiated by the total number of feeding episodes (Table 8). This was highest for younger age group and decreased with children's age. The child-initiated feeding episodes were mostly in response to child crying, which was interpreted by mothers as an indication that the child was hungry.

The proportion of meals and snacks that were specially prepared or bought for the child was calculated by dividing the number of meals or snacks specially prepared for the child by the total number of meals or snacks. The proportion of meals prepared specially for children was higher for the youngest infants compared to older infants. There was not much variation by age for snacks. For those children who did receive snacks, almost 100% were made or bought specially for the child. As shown in the previous section, older children are fed mostly family foods, and it appears that their feeding schedule is also dictated by the family meal schedule.

³ The Linkages Project. Recommended feeding and dietary practices to improve infant and maternal nutrition. The Linkages Project, Academy for Educational Development, Washington, D.C. 1999.

However, as seen among younger infants, the snacks are mostly special foods bought specifically for the child and therefore, they are fed snacks when they request them.

Table 8. Initiation of feeding episodes and special food preparations for the child

Child age categories (months)		Proportion of feeding episodes child-initiated	Proportion of feeding episodes mom-initiated	Proportion of meals made specially for child	Proportion of snacks made or bought specially for child
0-6	<i>Mean</i>	62.50	25.00	66.66	100
	N	4	4	3	1
	Range	0 to 100	0 to 100	0 to 100	.
6-12	<i>Mean</i>	33.33	66.67	47.22	100
	N	6	6	6	2
	Range	0 to 50	50 to 100	50 to 100	
12-24	<i>Mean</i>	16.67	83.33	22.22	75.00
	N	6	6	6	4
	Range	0 to 75	25 to 100	0 to 66.7	0 to 100
Total	<i>Mean</i>	34.37	62.50	41.11	85.71
	N	16	16	15	7
	Range	0 to 100	0 to 100	0 to 100	0 to 100

3.4.5 Timing of meals

Mothers reported that children were fed mostly based on household food availability and the family meal schedule. Almost all mothers mentioned that these were the two factors that influenced how often and when they fed their infant. A point to be noted is that of all children between 6 and 24 months, only 3 of them (in the 12 – 24 month age group) had been fed in the evening, i.e., after 3 p.m. The rest of the children had been given either breast milk after the afternoon meal or a juice of some kind in the evening. It is not known if this is because no food was cooked for the household in the evening or if, as found in a study done by Project Concern in another part of the Central Plateau (Sodo commune), people believe that young children should not be fed in the evening (Moreaux, 2001⁴). The Project Concern study found that women in all three regions of their study (La Gonave Island, Sodo commune in Plateau Central and San Maten in Port au Prince) had indicated that children who had been weaned were not fed an evening meal because it would make them bloated and give them stomach aches at night. This needs to be investigated further in the next phase of our study.

⁴ Moreaux, M. 2001. Knowledge, attitudes and practices on nutrition: La Gonâve, Sodo and Sen Maten. Report for Concern Worldwide. Port-au-Prince, Haiti.

3.4.6 Feeding behaviors

Mode of feeding. All children who were fed foods other than breast milk on a regular basis (15 out of 18) were fed using a separate plate or bowl for the child. The amounts of food mothers were offering to their children appeared to be small: mothers indicated that they put one or two spoonfuls (“louches” ; one louche=approximately ½ cup). It is not clear whether this is because there is not enough food in the household or because mothers think that infants would not be able to consume more than this amount. A number of mothers also indicated that the child consumed this amount of food in two sittings (one of which was considered a snack). In addition to this, some mothers also indicated that they often gave the child some food to eat from their plates when they were eating

Assistance while eating. The assistance children received while eating was dependent both on their age and on the type of food offered to them. Eleven of the fifteen mothers whose children were being fed complementary foods on a regular basis indicated that the amount of assistance they gave their child depended mainly on the type and density of the food. One mother also said that it depended on whether the child liked the food or not. She indicated having to provide more assistance to the child when he/she did not like the food. Mothers also indicated that the types of foods with which children needed assistance were soft foods that fall easily from the spoon. Some quotes that illustrate this are:

“Rice with bean sauce, in other words, any food that can fall easily from the spoon or from the plate”

-- (mother of 13 month old child)

“The two possibilities exist: it all depends on the nature of the food being served...whether it is solid or soft. Generally she eats alone and she drinks gravy on her own from a pot. However, one can help her put the food in her mouth.”

-- (mother of a 17 month old child)

The foods that mothers believed that the child did not need assistance with were “solid foods” like rice cooked together with beans, sweet potato, crackers and bread.

Age of the child was the other factor strongly related to whether or not mothers helped the child eat. Mothers who reported assisting their child to eat by putting food into his/her mouth all had children 9 months or younger (except one who had a 12-month old child). The children of mothers who reported not assisting their child at all (or very little) were between 13 and 23 months of age. When mothers were asked until what age they would need to assist their child when eating, there was a variety of answers. Of the nine mothers who said the amount of assistance children needed was age-dependent, five mothers thought that their child would be able to eat alone beginning from about 12 months of age, two mothers said 18-24 months, and two mothers said that it would depend on when the child was able to feed himself.

From the interviews, it is apparent that the idea of assisting children to eat is part of the culture in Plateau Central. However, it seems that the majority of mothers believe that the child

should be able to eat alone from 12 months on. Children need to be assisted with eating until they are at least 24 months of age to ensure that they consume adequate quantities of food. A situation where children might not be offered enough food to start with, combined with little or no assistance to consume it is likely to lead to insufficient intakes.

Encouragement to eat. Mothers were also asked about strategies they used to encourage their child to eat if he/she is not eating well. All mothers indicated that they used at least one, if not many, strategies to ensure that their child ate his/her food. Some of these were positive behaviors like holding, caressing or talking to the child (6 mothers). Other strategies included changing the way the food was cooked or trying other foods that the mothers knew the child liked (5 mothers). A few mothers also indicated that they used negative strategies like threatening the child or using forced-feeding (3 mothers). Other strategies included making herbal teas to improve the child's appetite and finally, taking the infant to a doctor, pharmacy or clinic to get some vitamins to improve the child's appetite. Most of the mothers mentioned that if the strategies they tried and the teas they prepared did not work, they would take the child to get some vitamins.

3. 5 Interviews with mothers on perception of child appetite and health

Child appetite and health were assessed using visual analogue scales. Each scale consisted of a line with 5 equidistant points on it. For the appetite scale, the point on the extreme left indicated extremely poor appetite and the point on the extreme right, very good appetite. Mothers were asked to mark a point anywhere on the line that represented how good or poor their child's appetite was in general. A similar line was used to obtain an overall assessment of the mother's perception of her child's health. For the health scale, the point on the extreme left indicated poor health while the point on the extreme right indicated good health.

We have used visual analogue scales successfully for assessing mothers' perceptions of child appetite and health in studies carried out in Guatemala and Ghana⁵. The objective of using the analogues in the present study was to test whether these tools could also be used in Haiti – i.e. whether mothers could answer the questions asked, and whether the results showed sufficient variability.

Table 9 shows the distribution of the appetite rating on the visual scale. Most children are rated as having appetites that are 3 or higher on this scale, which suggests that mothers perceive their child as having average to good appetite.

⁵ Arimond, M. and M. T. Ruel Assessing care: a review of experience with the measurement of selected childcare practices, and implications for programs. Food Consumption and Nutrition Division Discussion Paper #119, International Food Policy Research Institute, Washington, DC, 2001.

Table 9. Maternal perception of child's appetite based on visual analogue scale

Appetite rating	Frequency	Percent	Cumulative Percent
1.00	2	11.1	11.1
2.00	1	5.6	16.7
2.50	1	5.6	22.2
3.00	3	16.7	38.9
4.00	2	11.1	50.0
5.00	9	50.0	100.0
Total	18	100.0	

Table 10 shows the distribution of the health rating based on findings from the visual analogue scale. Again, most mothers (13/18) ranked their child's health at 3 or above on the 5 point scale, suggesting that they perceived their children's health to range from average to good health.

Table 10. Maternal perception of child's health based on visual analogue scale

Health rating	Frequency	Percent	Cumulative Percent
1.00	1	5.6	5.6
1.50	1	5.6	11.1
2.00	2	11.1	22.2
2.50	1	5.6	27.8
3.00	5	27.8	55.6
4.00	3	16.7	72.2
5.00	5	27.8	100.0
Total	18	100.0	

A cross tabulation of the appetite and health scales revealed that while there was not much concurrence between the two scales at the lower ends of the scales, there was clustering at the higher ends of the scale indicating, not unexpectedly, that children who were rated as having good appetite were also rated as having good health.

3.6 Interviews with mothers on their time, workload and use of childcare arrangements

Mothers were interviewed about their daily schedules and about the child care arrangements they used when they had to leave the home to go to the market or to work. Most of the mothers (15) did the shopping for their household and said they left the child in the care of another person when they went to the market. In 50% of the cases, this person was another child between the ages of 5-13 years. The other half left their child in the care of other women (over 15 years of age), primarily adult women including their own mother, sister, or a neighbor.

Mothers who reported leaving their infant in the care of another child, reported that they usually left some food prepared for the infant, along with some instructions on when to feed it to the infant. However, if the substitute caregiver was an adult family member, they would rely on that person to cook and care for the child. They said that they would occasionally leave behind some ingredients that the alternate caregiver could use to cook for the infant, or some money to buy food for the infant, especially if the alternate caregiver was not a relative.

One of the missing pieces of information in this study is how long mothers usually spend away from home, and how frequently they are absent. This type of information will be collected in the baseline survey as well as in the next stages of the qualitative research.

Most of the women said that they received physical help around the household from their family members. For most women, this help was received from their children and included such tasks as caring for the younger child/children, searching for firewood, fetching water and washing clothes.

3.7 Interviews with mothers on previous child care experience and current sources of information

All but three of the mothers who were interviewed had substantial experience taking care of other people's children before they had their own. All those who had some experience said that they had learnt about what foods to prepare for infants and how to care for them through these previous experiences.

Other sources that women tapped into for information on health and nutrition were health centers and health professionals as well as their own families. Half the women said that they had gone to health centers or talked to health agents when they needed some information on health and nutrition, while the other half indicated that they had relied on family members to give them advice. Two of the nine women who said they went to health centers also reported that they did not follow the advice given at the health center because they did not have the resources to do so.

3.8 Interviews with mothers on their knowledge and attitudes regarding child feeding

In order to assess current knowledge/attitudes about infant feeding, the mother respondents were asked a set of questions regarding timing of introduction of different foods, appropriate frequency of feeding and foods that help ensuring good child health. They were also asked what they would do in case their child had diarrhea and how long they would wait before going to a doctor or a health center. Tables 11 and 12 summarize their answers.

Table 11 shows that there is a large variability in beliefs and attitudes about the introduction of micronutrient-rich foods, particularly vegetables and meats. There was a group of women who indicated that a number of foods and liquids should be started well before 6 months, while another group of women knew about the recommended timing of introduction (i.e. starting at 6 months of age). In addition, a small group of women appeared to believe that most solid and semi-solid foods (rice, beans, vegetables, meats) should be introduced only after 12 months of age.

Table 12 shows maternal attitudes about duration of breastfeeding. These are in general in accord with current infant feeding recommendations (WHO, 1998), which encourage breastfeeding up to 24 months or beyond. The data on frequency of feeding are also generally in accord with recommendations for children in the 6 to 9 and 9-12 month old. However, knowledge about progression from 2-3 times at 6-9 months all the way up to 5 times when children are 12-24 months of age is not apparent in these data. The consistent heaping of answers at “3 times” for all three age groups probably indicates exposure to health education programs that have advocated feeding young children between 6 and 24 months at least thrice a day.

In addition to these questions, mothers were asked to list the names of a few foods they thought were good for children’s health. The responses shown in Table 13 are grouped in broad food groups, e.g., family foods versus gruels made specifically for infants. Two of the women did not know what foods were good for children’s health, and the answers from the remaining 11 women showed a large variability. Only two of the women answered this question with the exact words currently used in nutrition education programs in Haiti - *twa kalite mang*” (three types of food). This terminology is commonly used in Haiti to teach communities about three types of food: foods that give energy, foods that give strength, and foods that protect from illness.

Further research on beliefs related to feeding children will try to reconcile the differences between women who appear to be believers in early introduction with those who believe in late introduction of complementary foods. Specifically, we will attempt to understand whether these beliefs are based on socioeconomic concerns or cultural reasons. This information will be needed in order to develop a program strategy that can work within the belief systems and socioeconomic constraints of caregivers.

Table 11. Beliefs about appropriate timing for introducing selected foods

Timing of introduction	Number of respondents who specified a certain month for each food									
	Water	Other liquids	Thin gruel	Thick gruel	Rice	Vegetables (cooked with rice)	Vegetables, cooked separately	Egg yolks	Whole eggs	Meat/Fish/Poultry
1 month or less	6	3	3					1		
2 months	1	1	3	2	1	1	1	2	1	1
3 months	1	2	2	4		1	2	3	1	1
4 months					3	1	1	1	2	1
5 months								1		
6 months	10	12	9	6	3	5	4	8	3	4
7 months				2	2	2	1		3	3
8 months					2	1				
9 months							1		2	
10 months				1	1	1	1			
11 months										
12 months or later			1	2	4	4	5	1	3	4
Don't know/didn't answer						2	2		3	1
Other milestones										3

Table 12. Beliefs about breastfeeding duration and frequency of feeding

Question	Categories	No. of respondents in each category
Appropriate duration of breastfeed – Until child is:	6 months	2
	18 months	5
	24 months	9
	Until the child wants it	1
	Don't know	1
Appropriate frequency of feeding for children 6-9 months of age	Once	3
	Twice	3
	Thrice	12
Appropriate frequency of feeding for children 9-12 months of age	Once	1
	Twice	2
	Thrice	13
Appropriate frequency of feeding for children 12-24 months of age	Four times	2
	Once	0
	Twice	3
	Thrice	12
	Four times	1
	Five times	1
	Don't know	1

Table 13. Types of foods believed to be good for health

Types of foods	Number of respondents
Family foods (soups, corn and beans, plantain and meat sauce, beans, juices, etc.)	4
“Three food groups” (<i>Twa kalite manje</i>)	2
Food which gives strength (<i>ki bay fòs</i>); food which protects the body (<i>ki pwoteje kò</i>) ; food which makes the child grow (<i>ki fè grandi</i>).	
Eggs, banana and milk + other foods	6
Gruels (made of manioc, plantain flour, crackers, etc., with or without milk)	3
Breastmilk	1
Don't know	2
Total	18

4. KNOWLEDGE GAPS THAT REMAIN

Although this study has laid the foundation for designing the baseline survey questionnaire for the evaluation, and yielded valuable information on general patterns of infant feeding in this area, there are a number of information gaps that remain to be addressed. These will be explored more fully in the next stage of qualitative research. Some of these aspects are outlined below:

1. Program-related aspects:
 - a. Information on other health education and community organization programs that are operating in the project area is needed. Specifically, information will be collected on the nature of these programs and the educational messages and communication strategies they use.
 - b. The feasibility of using donated foods distributed by World Vision to enrich (or replace) the commonly used cracker- or bread-based, low nutrient density gruels needs to be assessed. This will require carrying out recipe trials with mothers to test a variety of potential recipes of nutritionally-enhanced complementary foods that are both feasible for mothers to prepare, given economic and cultural constraints, and acceptable to mothers and infants.
2. Infant feeding:
 - a. Colic/gas is clearly a common concern affecting early feeding practices. It appears to be the dominant reason for the early introduction of liquids and foods other than breast milk in young infants' diets. It will be important to better understand this belief in order to be able to design effective messages to promote exclusive breastfeeding for the first 6 months in the study area.
 - b. This study did not gather information on consistency or mode of feeding of the gruels fed to children in the first few months of life. While there is some indication that teas are fed in bottles, we do not have information on how the gruels are fed. More information is needed on these aspects as well as on the types of teas that are made for children.
 - c. The study did not assess the energy density of the diet at different ages. Based on the types of gruels prepared, it is expected that the energy density is low, possibly throughout the first year. Detailed information about recipes and preparations used for children of different ages will be necessary to assess the average energy density of the diet.
 - d. The rationale for the timing of meals fed to young children also needs to be explored further and potential constraints to increasing the number of feeding episodes need to be understood better. In addition, the issue of feeding the child in the evening needs to be addressed specifically.

- e. Fish like herring and sardines appear to be used in many of the bean and vegetable preparations but it is not clear how much of the fish infants and young children are fed. Also, fish heads, as opposed to the flesh is often used as a seasoning, and thus, may provide only limited additional nutritional value to the sauce. More information about the use of fish in cooking and the amounts fed to children will need to be gathered.
3. Child care arrangements:
- a. The information gathered in this study about maternal time allocation, workload and use of child care arrangements needs to be complemented with more specific information about maternal employment and time spent away from home. Additional information on the role and responsibilities of substitute child caregivers, and on the level of maternal control over them will also be collected.

5. CONCLUSIONS

This qualitative study has fulfilled the objective of providing a locally specific basis for designing the baseline survey for the evaluation. Information was obtained on the patterns of infant/child feeding at different ages and on the patterns of use of specific foods and the timing of their introduction in children's diets. This information will be extremely useful to design our 24-hour recall instrument to assess dietary intake of infants and young children.

Given the small sample of children in this study, it is unclear whether our findings are typical of the situation in the region as a whole. However, a comparison of our results with those of a study done by Project Concern (Moreaux, 2001) in the southern part of La Gonave, Sodo commune of Plateau Central and San Maten (in Port-au-Prince) suggests that many of the practices, particularly the progression of infant feeding by child age and the types of foods given to children at different ages, are fairly similar to the those reported in our study in Hinche.

The information gathered on feeding practices will also be useful for the next phase of the qualitative research, the focused ethnographic study, which will seek to identify potential candidate behaviors to target through the behavior change and communication intervention. The patterns of complementary feeding practices described in the present report raise a series of concerns regarding the early introduction of complementary foods and the apparently poor quality and probably insufficient quantity of complementary foods throughout the first two years. Our forthcoming in-depth qualitative study will have to identify which of these non-optimal practices should be prioritized in the education intervention. Targeted behaviors should be prioritized based on their importance for child growth and health, as well as the feasibility of achieving change through the education and communication strategy. Clearly, exclusive breastfeeding during the first 6 months will have to be addressed, and efforts to improve the energy and micronutrient density of cereal-based complementary foods should also probably be prioritized. Efforts to develop recipes for *special* complementary foods using donated commodities will be explored.

There is some indication from the interviews with key informants and with mothers that the general philosophy of parents regarding infant feeding in Haiti is to speed up the process of integrating the infant's food patterns with that of the family. This philosophy will need to be

explored further in order to develop methods of sensitizing parents to the special needs of children under the age of two.

The qualitative study focused primarily on caregiving practices related to the “food” aspects of feeding. Subsequent qualitative research will explore other key dimensions of care during feeding, including caretaker-child interactions and other psycho-social aspects of feeding.

Finally, the qualitative study also provided useful information on potential indicators to measure the socioeconomic status of households in the baseline survey using locally specific and sensitive indicators of socioeconomic status. It has also provided preliminary information on the use of child care alternatives and on the sources of information used by mothers to guide them in their childrearing decisions.

ANNEX 1. LIST OF SOCIOECONOMIC INDICATORS

1. Floor
 - a. Earth/dirt floor (Tè)
 - b. Stones (Aoch) – might see in the urban areas
 - c. Cement (Siman)
2. Walls
 - a. Dirt
 - b. Klisad (also called palisad) includes palm and boite petit
 - c. Blòk (concrete blocks)
3. Roof/ceiling
 - a. Thatched roof (Tach)
 - b. Tin (Tole)
 - c. Cement (Siman)
4. Latrine:
 - a. None/use fields
 - b. Pit
 - c. Latrine with wooden slabs (Latrine en bois)
 - d. Latrine with cement slabs (Latrine en ciment)
5. Household possessions
 - a. Cots
 - b. Bicycle
 - c. Radio
 - d. Clock
 - e. Chair/s
 - f. Table/s
 - g. Cupboard for dishes
 - h. Horse/Mule
6. Livestock
 - a. Chicken/rooster/duck
 - b. Goat/Pig/Rabbit
7. Does the household have access to electricity

8. Grain storage
 - a. Nothing, no grain to store
 - b. Kolombye – Thatched
 - c. Kolombye – Tin
 - d. Rent silo space
9. House status
 - a. Rent
 - b. Own
 - c. Neither --- staying on someone else's land
10. Land that they cultivate:
 - a. How much land? _____ units (carreau)
 - b. Did they buy it, inherit it, rent it, or use it gratis?
11. Food security status: how long does the food from their land (garden) last?
 - a. No food from garden
 - b. Lasts 0-3 months
 - c. Lasts 4-8 months
 - d. Lasts 9-12 months
12. If someone in the household is ill and needs treatment/medicines, how many days can you afford to pay for their treatment?
 - a. 0
 - b. 1-3 days
 - c. 1 week
 - d. 1 month
 - e. More than 1 month
13. Sources of income