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Exclusive Breastfeeding Practices in Rural Haitian Women

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Exclusive Breastfeeding Practices in Rural Haitian Women

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B.A., Central Connecticut State University 1993

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Masters of Public Health

Exclusive Breastfeeding Practices in Rural Haitian Women

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To: Me

Thanks to Professor Judy Lewis and Dr. Bette Gebrian allowing me to participate in an extraordinary experience

Much appreciation to Dr. Bill Teel for his assistance with Stata and all matters statistical!

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Sara: For bearing witness and becoming my kindred sistah!

Para Mi Familia: Te quiero más que las estrellas en el cielo.
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Introduction:

Breast milk; simple, perfect, natural. It can prevent the development of allergies and asthma, protect against certain cancers, increase child survival rates, avert postnatal transmission of HIV in the first 6 months of life, and decrease the incidence of common illnesses that turn deadly in places that lack basic human necessities. Breast milk gives infants and young children additional protection against microbes that can easily invade malnourished bodies. Children under the age of five are disproportionately affected by viral and infectious diseases. Extreme poverty, natural disasters, and warfare have a devastating impact on most of the world’s children. The simple act of breastfeeding can save countless lives and increase the chances of survival of infants and young children. The promotion of breastfeeding, especially in developing countries, is a public health issue of critical importance.

Overview:

This thesis explored the exclusive breastfeeding practices of rural Haitian women in the Grande Anse region of Haiti. Understanding women’s experiences, including barriers and facilitators, will provide information for improving exclusive breastfeeding in this population. Increasing rates of exclusive breastfeeding will result in lower morbidity and mortality rates and improve infant growth and development. This thesis begins with a review of existing literature about exclusive breastfeeding, including the benefits of breastfeeding, the qualities and nutritional value of human breast milk, breastfeeding and its correlation to infant mortality and morbidity, as well as a review of global health policies that promote and protect breastfeeding. This is followed by a description of breastfeeding in Haiti and the context of the research setting.
This study has three components. The first component was a retrospective of breastfeeding practices in two groups of women. One group had exclusive breastfeeding education and access to pre and post natal care and the other group of women did not. Women who received health care and education lived in villages that were served by the Haitian Health Foundation (HHF). The additional group of women lived in an area not covered by HHF. The second component looked at the breastfeeding rates of women who completed 6 months of exclusive breastfeeding in HHF villages. The third component consisted of two focus group (HHF and non-HHF villages) discussions where women were asked about their breastfeeding practices and experiences. The results of each component will be presented and discussed. The thesis ends with recommendations for future work.

**Background:**

Exclusive Breastfeeding

The benefits of exclusive breastfeeding for both mother and child are universally acknowledged by health providers, global health agencies, and lay people. Exclusive breastfeeding is defined by the World Health Organization as giving human milk with “no supplemental liquids or solid foods other than medication and vitamins” (Tavera, 2007) Human milk provides an infant with all the necessary protein, sugar, fat, and vitamins needed for a healthy neonatal period. It also provides passive immunity/protection against specific diseases and infectious illnesses including otitis media, allergies, vomiting and diarrhea, pneumonia, bronchiolitis, wheezing, and meningitis. (www.AAP.org)
Unlike milk substitutes, human milk is a dynamic, living liquid that is made by the body specifically for human infants. Human milk contains nutrients that are not found in formula such as growth hormones, prostaglandins and fatty acids that are unique to the brain and visual development of infants. There has never been a formulation of a milk substitute that can reproduce the complicated structure of human milk. (Feldman, 1999)

Human milk facilitates effortless digestion for the infant compared to artificial formula. It is readily available and breast milk is delivered in the exact quantity gestationally needed. Breast milk is also economical and environmentally friendly. (www.AAP.org)

Human milk is dynamic and unique in its composition. It not only changes during the episode of a feeding but also during the course of lactation. The quantity of breast milk produced is related to the weight of the infant. Human milk and cow’s milk differ in terms of both macronutrients and micronutrients, the presence of various fatty acids and factors affecting the absorption. There are variations in the types of protein found in cow’s milk and human milk, including their relative proportions. Moreover, qualitative and quantitative differences exist in the non-protein nitrogen fraction. Cow’s milk has less lactose and a distinct oligosaccharide fraction. There are dissimilarities in content and absorption rates of vitamins and minerals in both milks and formula milk. Vitamin D and vitamin K status may present problems for the breast-fed infant in particular circumstances. A mother’s nutritional status seems to effect fat concentration, thus affecting the energy content of breast milk and fatty acid composition and immunological properties. It does not appear that the protein or lactose concentrations are affected. Vitamin concentrations in the breast milk are influenced by the mother's intake with
selenium being the only mineral equally affected. Moreover, infant responses to human and formula milk differ in endocrine, immune, renal function and stool motility. Infant formula milks will never be able to imitate human milk. Composition differences between the two milks include: types and proportions of fatty acids present which may be of great importance to infant developmental, non-protein nitrogen component (potential developmental importance) and the presence of immunoglobulins and fibronectin. (Emmett and Rogers, 1997)

"The question of the composition and volume of breast milk produced by mothers on different planes of nutrition at different phases of lactation is a major issue in pediatric public health in the world, especially in resource-poor countries. Fundamentally, ultimate concerns are the nutritional adequacy of such milk for young infants in relation to calories, proteins, vitamins, and minerals, and the physiological and practical efficacy of supplementing the maternal on infant diets, when or if necessary. However, it must be stressed that infant feeding cannot be considered in relation to the dietary supply of nutrients alone, but rather in an ecological context. For example, with regard to breast feeding in less developed countries, the nutritional and health consequences of the prevention of diarrhea disease, the lactation contraceptive phenomenon, and the economic and agonomic considerations have to be borne in mind at the same time. Conversely, for the majority of the world, breastfeeding cannot only be compared with adequate feeding with cow’s milk - that is with sufficient formula available and with reasonable home hygiene. From a practical point-of-view, it is more usually a comparison of breast feeding and formula feeding as they exist in the nutritional, hygienic, and economic circumstances usually found in villages and urban shanty towns in resource-poor, less developed countries, mainly in the subtropics and tropics." (Jelliffe and Jelliffe, 1978)

Huffman et. al. (2001) analyzed the literature on the correlation between breastfeeding practices in the first few months of life and neonatal mortality. Findings supported the importance of exclusive breastfeeding for the prevention of hypothermia and hypoglycemia in preterm and low birth weight babies, and deaths related to diarrhea, sepsis, acute respiratory infections, meningitis, and omphalitis. Although most women in developing countries breastfeed during the first month of a newborn’s life, exclusive breastfeeding is not typical. Huffman also discussed the delay in putting a baby to breast
immediately after delivery and how critical it is to successful breastfeeding and infant survival.

The practice of not giving breast milk has been associated with sudden infant death syndrome and other neonatal morbidity and mortality. Breastfeeding can save premature infants from life threatening gastro-intestinal diseases such as necrotizing enterocolitis. It lessens the occurrence of otitis media, severe bacterial infections such as meningitis, bacteremia, lower respiratory infections and botulism. (Feldman, 1999)

Infants and children in developing countries are disproportionately affected by life threatening diseases, poor health care, lack of potable water, malnutrition, poverty, and war. In an effort to give these children a chance at survival, it is imperative that breastfeeding be promoted and supported by government organizations and the medical establishment.

In developing countries, there is a tendency to extend breastfeeding for longer periods in time. In Ghana, women breastfeed for a median duration of 22 months with 53.4% of women breastfeeding their young babies. Unfortunately, the rates of exclusive breastfeeding are less than overall breastfeeding rates due to the practice of giving complementary feedings. The inclusion of additional foods and liquids causes higher rates of diarrheal illness and higher mortality rates. (Adiam, Perez-Escamilla, Lartey, 2005)

Research done by Yeo, Bequet, and Krawinkel (2005) found that women in Cote d'Ivoire regarded breast milk as suitable nutrition for their infants. However, the practice of exclusive breastfeeding was not considered desirable. A majority of women believed that a baby needs addition liquids, most notably, water.
UNICEF, a world leader in promoting global healthcare for children, states that children born in developing countries are three times more likely to survive infancy if they are breastfed. Although estimates put the practice of breastfeeding for infants under six months of age at 63% in the developing world, millions of children still start their lives at a disadvantage. (www.unicef.org World Breastfeeding Week, 2006)

The American Academy of Pediatrics strongly advocates exclusive breastfeeding in the first six months of an infant's life. But recent studies in the United States are similar to the rest of the world in that the initiation and maintenance of exclusive breastfeeding is lower than expected. A national study in 2001 demonstrated that only 7.9% of mothers were exclusively breastfeeding their infants for 6 months. (www.AAP.org)

In 2005, The Department of Health and Human Services conducted a national survey on U.S. breastfeeding practicing which included both the initiation and duration of exclusive breastfeeding. The DHHS utilized a computer-generated list (50 states and DC) which identified households with children between the ages 19-35 months. The interview was conducted with the person who was the most knowledgeable about the child's immunization history.

Results:
- 21 states in the United States achieved the national Healthy People 2010 objective of 75% of mothers initiating breastfeeding.
- 5 and 11 states achieved the objective of having 50% of mothers breastfeeding their children at 6 months of age and 25% of mothers breastfeeding their children at 12 months of age, respectively.
- 5 states (California, Hawaii, Oregon, Vermont Washington) achieved all three of these Healthy People 2010 objectives.

The NIS breastfeeding data revealed that non-Hispanic black and socioeconomically disadvantaged groups have lower breastfeeding rates; which is consistent with previous
surveys. (CDC www.cdc.gov/breastfeeding/data/NIS_data/data_2005.htm)

In the United States, the American Academy of Pediatrics (AAP) Breastfeeding Promotion in Physicians’ Office Practices (BPPOP III) program educates and supports residents in pediatrics, obstetrics and gynecology, and family medicine, practicing physicians; and other health care professionals and public health advocates, in the promotion and management of breastfeeding directed towards meeting the national goals for breastfeeding in Healthy People 2010. This highly adaptable curriculum which can be integrated into medical schools and residency programs was developed to optimally train future physicians about breastfeeding. Participation in BPPOP III strengthens and expands the number of national organizations (nurses, La Leche League, lay midwives, etc) that are collaborating to increase breastfeeding (incidence and duration) and decrease racial and ethnic disparities in breastfeeding rates. Information is provided about effective educational programs that have been found effective, behavioral counseling techniques and ongoing support for breastfeeding women. (CDC www.cdc.gov/breastfeeding/pdf/BF_guide_8.pdf)

Global Public Health Policies:

In 1990, a collaborative effort took place between the World Health Organization and UNICEF to jointly adopt the Innocenti Declaration on the Protection, Promotion, and Support of Breastfeeding. The Declaration acknowledges that breastfeeding is a distinctive process which affords infants the ideal combination of nutrients that provide critical protection against infectious diseases. The protective quality of breast milk decreases the rates of infant morbidity and mortality as well as contributes to the overall health and well being of children. Breastfeeding also decreases the risk of ovarian and
breast cancer in women, increases birth spacing, and is economically beneficial to both family and community. Quantitative research demonstrates that these advantages intensify when women exclusively breastfeed for the first six months with the addition of complementary foods during the next six months.

The Innocenti Declaration proclaims that exclusive breastfeeding for 6 months is the global goal for optimal maternal and child health and nutrition. All women should be encouraged to exclusively breastfeed and all infant should receive breast milk for up to two years of age or beyond with complementary foods. This can be achieved by creating a supportive environment that also raises awareness of the benefits of exclusive breastfeeding.

Reinforcement of the culture of breastfeeding must be nurtured and protected against the culture of formula feeding. To accomplish this, a strong commitment from leaders as well as dynamic advocacy groups is needed to mobilize society and change maternal infant outcomes. By encouraging leaders and the medical profession, and empowering women and their families, barriers and constraints can be eliminated, allowing for comprehensive communication and strategic planning.

By integrating national breastfeeding policies and practices into existing health care systems, governments can monitor and evaluate national targets as well as develop indicators for the health of their infants and mothers. (www.unicef.org)(Nutrition-Innocenti Declaration on Protection, Promoting and Supporting Breastfeeding)

The Innocenti Declaration put forth the following four targets for infant and young child feeding:

- “Appointment of a national breastfeeding coordinator of appropriate authority, and establishment of a multisectoral national breastfeeding committee;
• Ten Steps to Successful Breastfeeding (the Baby-Friendly Hospital Initiative) practiced in all maternity facilities;
• Global implementation of the International Code of Marketing of Breast Milk Substitutes and subsequent relevant World Health Assembly resolutions in their entirety;
• Enactment of imaginative legislation protecting the breastfeeding rights of working women; and establishment of means for enforcement of maternity protection” (www.unicef.org) (Nutrition-Protecting, promoting and supporting breastfeeding-website)

In May 2002, the Global Strategy for Infant and Young Child Feeding was adopted by the World Health Organization Assembly. This strategy includes and supersedes the Innocenti Declaration goals. Emphasis is directed to mothers and the communities in which they live and to increasing the special bond between mother and child by encouraging skin to skin contact and breastfeeding after delivery. There are five additional objectives incorporated in the Global Strategy for Infant and Young Child Feeding:

• “Implementation of comprehensive government policies on infant and young child feeding;
• Full support from health and other sectors for two years of breastfeeding or more;
• Promotion of timely, adequate safe and appropriate complementary feedings (addition of other foods while breastfeeding continues);
• Guidance on infant and young child feeding in especially difficult circumstances, and related support for families and caregivers; and
• Legislative or suitable measures giving effect to the International Code as part of the national comprehensive policy on infant and young child feeding.” (www.unicef.org)(Nutrition-Protecting, promoting and supporting breastfeeding-website)

The United Nation’s Convention on the Rights of Children explicitly declares that children are entitled to special care and assistance. Article 24 of the Convention strives to ensure that no child is deprived of his or her access to health care including nutritious foods and potable water. The Convention wholly acknowledges the advantages of breastfeeding. (www.UN.org (Convention on the Rights of the Child, 1990)
Governments must make certain that the benefits of exclusive breastfeeding are widely distributed to all segments of the population. Special circumstances such as breastfeeding and perinatal transmission of HIV should be evaluated and the risk benefit ratio examined. (www.unicef.org (Nutrition-Protecting, promoting and supporting breastfeeding-website)

Existing policies support exclusive breastfeeding with informed choice on accessible options for infant feeding. Other special circumstances include situations such as war, natural disasters, and refuge situations where exclusive breastfeeding maybe be undermined by the availability of formula. In response to this problem, the Emergency Nutrition Network, of which UNICEF is a partner, has created the Operational Guidance of Emergency Relief Staff and Program Managers modules to combat the inappropriate donations of milk substitutes. (www.unicef.org) Two other programs developed to encourage, endorse, and maintain exclusive breastfeeding with the support of UNICEF and WHO is the Baby-friendly Hospital Initiative (BFHI) and the International Code of Marketing of Breastmilk Substitutes. (The Code).

The World Health Organization/UNICEF developed “Ten Steps to Successful Breastfeeding”, which is the foundation for their Baby Friendly Hospital Initiative (BFHI). This Initiative was launched in 1991 to ensure that labor and delivery and postpartum units promote and support breastfeeding. All baby friendly hospitals must not receive free or reduced priced infant formula, bottles or pacifiers. The process is currently monitored by national breastfeeding authorities who utilize global criteria developed by WHO and UNICEF, which can be applied to hospitals or clinics around the world. (The Baby Friendly Initiative, www.unicef.org/programme/breastfeeding/code.htm)
The World Health Organization and UNICEF evaluated the evidence for the efficacy of the “Ten Steps to Successful breastfeeding” and through this assessment, provided a guideline to promote breastfeeding advocacy and education. This document summarizes the maternity practices necessary to support the initiation and duration of breastfeeding. (WHO, 1998)

The “Ten Steps to Successful Breastfeeding” for facilities providing maternal-infant care are as follows:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within half-hour of birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infant.
6. Give newborn infants no food or drink other than breastmilk, unless medically indicated.
7. Practice rooming-in - allow mothers and infants to remain together - 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic. (WHO, 1998)

In 1981, The World Health Assembly adopted the International Code of Marketing of Breastmilk Substitutes to safeguard and support breastfeeding by educating people on the appropriate infant feeding and regulating the marketing of formula, bottles, and pacifiers. The Code also prohibits any advertising or promotional activities advocating formula and various paraphernalia to the public or health care clinic and hospital (The International Code, www.unicef.org/programme/breastfeeding/code.htm)
The United Nations, under the director of UN Secretary-General Kofi Annan, Harvard Economist Jeffrey Sachs, and world leaders collaborated in September 2000 to develop measurable goals and targets to fight poverty, disease, illiteracy, environmental ruin, and inequality, intolerance, and prejudice against women. These goals, which include a commitment to human rights, good government and democracy, are now referred to as the Millennium Development Goals (MDS). The fourth Millennium Development Goal is to “reduce under-five mortality by two-thirds” to be achieved by 2015. An estimated 11 million infants and children die every year. (Implementing the Millennium Declaration, 2002)

The United States Aid to International Development (USAID) is actively involved in the battle to prevent the unnecessary deaths of children in developing countries by implementing the BASICS Project. (Basic Support for Institutionalizing Child Survival) This project implements the child survival agenda that has been in effect since 1985. At that time, the US Congress created the Child Survival Program which has allocated over $5 billion for child survival, pediatric HIV/AIDS and other infectious diseases that kill children. An addition $2.5 billion dollars goes to developing countries for maternal-child health which includes the promotion, protection, and support of exclusive breastfeeding. BASICS is working in conjunction with heads of states, ministries of health, government organizations, non-governmental organizations, and faith based organizations to meet the child mortality MDG by 2015. (Basic Support for Institutionalizing Child Survival, www.basics.org)

Special consideration should be given to mothers who are positive for HIV/AIDS. It is important that HIV-infected women receive appropriate counseling regarding
breastfeeding including the benefits and risks of breastfeeding as well as giving formula. Milk-substitutes are generally recommended if the replacement feeding is acceptable, feasible, affordable, sustainable and safe. If this is not achievable, exclusive breastfeeding is recommended for the first few months of life. (WHO/UNAIDS/UNICEF infant feeding guidelines, www.unicef.org/programme/breastfeeding/feeding.htm)

Exclusive breastfeeding is recommended because it dramatically decreases infant mortality and morbidity rates regardless of HIV status. HIV infants who were breastfed exclusively for a minimum of 3 months had a lower risk of HIV infections than those infants who received both breast milk and replacement feedings. In view of the fact that replacement feeding is uncommon in many parts of the world, it is imperative that we develop ways to make breastfeeding safe for HIV positive mothers and their babies living in areas lacking essential resources. Research findings by Iliff et al. (2006) demonstrated the importance of promoting and supporting exclusive breastfeeding, especially in areas where there is a high prevalence of HIV infection, and where many women do not know their HIV status. The introduction of milk substitutes and solid food at a very young age is contraindicated because of the increased risks of diarrhea and respiratory infections. This practice is extremely hazardous to infants born to HIV-positive mothers because it increases the risk of HIV infection to babies.

Suboptimal breastfeeding is associated with higher infant mortality rates in developing countries. Research done by Lauer et. al. (2004) showed that the rates of exclusive breastfeeding are low in the developing world (39%) with somewhat higher rates in South America and the Caribbean (45%).
The Bellagio Study Group on Child Survival, which promotes exclusive breastfeeding as one of the cornerstones of child survival interventions, believes that “even in relation to the cost of public health initiatives, child survival is good value for the money. Application of what we know can reduce child mortality by two-thirds and achieve the ambitious millennium development goals” (Bellagio Study Group, 2003)

To successfully breastfeed, it is important to have available support systems in place to assist the mother and infant with early, correct latch and positioning, as well as to offer assurance that the mother has an adequate milk supply. It is not uncommon for women to experience discomfort within the first few weeks of breastfeeding, worry excessively about the amount of breast milk the baby is receiving, or have difficulty with additional nursing problems such as cracked/bleeding nipples, engorgement, or mastitis.

Community involvement is extremely important in promoting and increasing rates of breastfeeding. Doctors, nurses, and other professional healthcare workers also play an important role in promoting breastfeeding. Through their research on professional healthcare workers in Nigeria, OlaOlorun and Lawoyin (2006) demonstrated clear and convincing evidence that healthcare workers who are knowledgeable and supportive of breastfeeding are more likely to promote successful breastfeeding for longer durations. Subsequently, those healthcare workers that have knowledge deficits relating to lactation often harbor negative and obstructive attitudes, beliefs, and practices. Cultural misconceptions and/or lack of medical knowledge about breastfeeding often lead to barriers. Attitudes that were considered non beneficial included: “the assumption that health workers know enough already, the belief that there is no important difference between breastfeeding and bottle-feeding, the reluctance to allocate staff time to
breastfeeding support, and the failure to recognize the impact of inconsistent or inaccurate information.” (OlaOlorun and Lawoyin, 2006)

Those physicians, nurses, midwives and other providers of health care who are knowledgeable and supportive of breastfeeding can enhance and increase the rates of breastfeeding, encourage immediate breastfeeding after delivery, improve infant exposure to colostrum, and increase the overall duration of breastfeeding. Unfortunately, many professional health care providers lack the knowledge to sufficiently support new mothers to successfully breastfeed. Although they may have had training in lactation, most are ill prepared to assist mothers and infants in the actual art of breastfeeding. (OlaOlorun and Lawoyin, 2006)

Moreover, for those living in situations were HIV/AIDS is pandemic and HIV status is often not known, the ability to teach breastfeeding and support women is paramount. Identified risk factors for postnatal HIV transmission include nipple lesions (OR = 2.3, CI 95% 1.1-5.0) and mastitis (OR = 2.7, CI 95% 1.9-9.9) (Ambree et al., 2000)

According to WHO, the major barrier to successful breastfeeding, in fact the contributing factor to the erosion of breastfeeding is health care practices. Maternity practices and health care providers’ attitudes and beliefs play an important role in protecting, promoting, and supporting breastfeeding. Of course, factors such as living conditions, level of education, socioeconomic status, employment, knowledge of breastfeeding and infant care, sociocultural practices, family support, and availability of formula also play a significant role in whether women breastfeed and for how long. Higher maternal education has been associated with higher rates of breastfeeding in
industrialized countries and lower rates of breastfeeding in developing countries. (WHO, 1998)

Breastfeeding and weaning practices are not completely instinctual in humans as they are in other mammals. The ability to successfully breast feed is a learned behavior. Women who are isolated from their extended families demonstrate greater difficulty with breastfeeding and incur more problems with milk supply, latch, and breast/nipple problems then women who live among their relatives.

Clinicians and health workers are in the ideal position to promote successful breastfeeding experiences by providing mothers with support, guidance and practical information. Management strategies for adequate milk supply, common breastfeeding problems and poor infant weight gain are crucial for infant growth and development and maternal breastfeeding success. (Bears K, Tigges BB 1993)

The Global Criteria for the WHO/UNICEF Baby Friendly Hospital Initiative, 1992, states that “all health care staff who have any contact with mothers, infants, and/or children must receive instruction on the implementation of the breastfeeding policy. Training in breastfeeding and lactation management should be given to various types of staff including new employees; it should be at least 18 hours in total with a minimum of 3 hours of supervised clinical experience and cover at least 8 steps.” (WHO, 1998)

Common problems related to breastfeeding include: breast engorgement, nipple pain/trauma, plugged milk ducts, and poor milk production. Most breastfeeding problems can be prevented and resolved by using proper breastfeeding techniques. Mothers should nurse their babies as soon as possible, nurse on demand, and use proper positioning. Mothers must learn how to position the baby’s mouth and tongue onto the
breast to ensure proper latch and adequate milk flow. Other problems including mastitis, abscess, candidiasis, nipple infection, and galactocele need further evaluation and treatment. (Giugliani, 2004)

Unless health care workers are adequately trained in lactation and most importantly, the skills of breastfeeding, it is inappropriate to expect them to fully engage in breastfeeding promotion and management. Doctors, nurses, midwives, and ancillary staff cannot effectively guide mothers, provide supervision, and manage breastfeeding issues unless they are adequately trained. Assisting a mother with the most basic of all skills, the latch, cannot be achieved unless staff receives “hands on” training skills (i.e.: latch, positioning) and not just didactic information. For training to be successful and beneficial in the community health care workers should be mandated to attend classes and senior management should strongly support policies and procedures that promote breastfeeding. Outcomes should be monitored and audits completed to assess the need for further policy development. (WHO, 1998)

Healthcare workers who are present during labor and delivery are invaluable to assisting mothers and infants with very early breastfeeding. With support, mothers will breastfeed for longer durations and experience fewer difficulties. (Cutting, 1995)

As noted with the 2006 research of OlaOlorun and Lawoyin, WHO previously acknowledged breastfeeding barriers erected by health care workers; but also took into account how health care workers may undermine a mother’s confidence by critically implying or doubting the adequacy of the mother’s milk supply. Changes in cultural attitudes and beliefs, as well as an improvement in skills, are the most important
indicators in changing breastfeeding practices. Without these important modifications, increased knowledge will not be effective. (WHO, 1998)

It has been documented that mothers who discontinue breastfeeding prematurely have higher rates of breastfeeding problems with infant latching and suckling, report lower levels of maternal confidence, and lack encouragement and support from their health providers. Nevertheless, robust scientific evidence based on randomized, controlled trials is presently lacking. Findings by Labarere (2005), advocate that healthcare providers should receive training to improve breastfeeding outcomes.

The promotion and protection of exclusive breastfeeding is dependent upon a combination of critical factors. Strong public policy, global initiatives, and international support create the environment needed to encourage the introduction and continuance of breastfeeding and influence governments and health organizations to make it a priority. Research offers further evidence that breastfeeding provides major health benefits for women and children. Health providers who are well educated in lactation and breastfeeding skills can increase rates of breastfeeding through simple technique and maternal support. Decreasing the morbidity and mortality of infants and children is paramount in the developing world. Exclusive breastfeeding offers an acceptable, feasible, affordable, sustainable and safe form of nutrition.

Republic of Haiti:

Haiti has long been described as a living laboratory for suffering. In the 1960’s the anthropologist, Jean Wiese, observed that “life for the Haitian peasant of today is abject misery and a rank familiarity with death.” Paul Farmer, MD believes that the poverty in Haiti is as inconceivable now as it was some thirty years ago. It matters not
what kind of regime governed the land or its people, because their interest lay in raping the country of its resources and not the protection of its people. Haiti is the only country located in the western hemisphere that is characterized by “extreme human suffering” according to the human suffering index. The majority of Haitians have a precarious hold on life (Farmer, 2005).

Haiti is a country in crisis. Since 2004, with the ousting and exile of President Aristide, the country has experienced increasing violence and lawlessness, making it difficult to address the humanitarian needs of its people. This coupled with the mountainous terrain, poor infrastructure, and vulnerability to tropical storms, makes Haiti a challenge for government and non-governmental organizations to aid in economic development. (UNICEF, www.unicef.org/infobycountry/haiti.html)

Haiti ranks 153 out of 177 (countries) on the United Nations Development Program-Human Development Index (2004), with 55% of the population living on 45 gourdes (less than $1/day). Growth retardation occurs among 42% of children under the age of 5 years caused by chronic malnutrition. Daily food insecurity affects 40% of the population because the current food supply can only sustain 55% of Haitian homes. The World Health Organization recommendations for daily caloric intake (minimum) is 2,240 calories; an amount that 2.4 million Haitians cannot afford. Afghanistan, Somalia, and Haiti are the three countries in the world with the worst daily caloric deficit per inhabitant; 460 kcal/day. (World Food Program; www.wfp.org)

The issues that face Haitian children are overwhelming. Haiti leads the western hemisphere in both maternal-infant mortality, as well as the mortality rate for children under the age of five years. The leading causes of death in this country include diarrhea,
respiratory infections, malaria, tuberculosis, and HIV/AIDS. A majority (60%) of the population lives primarily in rural areas and lack basic health care. As with other developing countries, child trafficking is a growing problem with approximately 2000 children a year being sent to the Dominican Republic. Children living in cities, such as Port au Prince, end up becoming “soldiers” for armed gangs. Many children are unable to attend school, a little over 50% of children attend primary school and only 2% finish secondary school. More than one quarter of the children are orphaned or considered vulnerable to violence, exploitation and abuse.

(UNICEF: www.unicef.org/infobycountry/haiti.html)

UNICEF’s ‘Child-Alert Haiti” reports the following statistics on basic indicators for health in 2005:

- infant mortality rate (under 1 yr): 84/1000
- under five mortality rate: 120/1000
- number of under five deaths: 31,000
- number of births: 255,000


Although there has been a decline in the number of children diagnosed with severe malnutrition, children still suffer and die from kwashiorkor, marasmus, and experience retarded growth and development. This is the result of vitamin A deficiency, iodine and iron deficiency, and anemia. (PAHO. www.paho.org)

UNICEF believes that 23% of Haitian children under the age of five suffer from moderate to severe malnutrition with much higher rates seen in rural areas. Health projects are unevenly distributed throughout Haiti resulting in inconsistent services, lack of resources and inadequate staffing. With only fifty percent of the population having access to water and nearly 70 percent of the water systems functioning to capacity, it is
not surprising that diarrhea is the leading cause of death for children under the age of five. (UNICEF Humanitarian Action Report, 2007)

The prevalence of HIV in Haiti is the highest in the region according to the latest Demographic and Health Survey figures from Enquete Mortalite, Morbidite et Utilisation des Services (EMMUS IV) There has been a slight decrease in the prevalence rate but the Ministry of Health (2004) pointed to a 3.44 percent prevalence rate based on the testing of pregnant women. In is estimated that 200,000 children have been orphaned by the loss of one or both parents to AIDS. There are 19,000 children living with HIV/AIDS with only 300 having access to antiretroviral drugs. (UNICEF Humanitarian Action Report, 2007)

Figures from the Ministry of Education demonstrate that more than 70,000 school children failed to complete the 2005 school year because of security issues. An overwhelming number of children, 500,000, do not attend school. With 80% of the schools functioning as private institutions, tuition, uniforms, and books are enormous obstacles for most Haitians. Many parents chose to rotate their children through school or have them attend only a few years of school. (UNICEF Humanitarian Action Report, 2007)

Products grown in Haiti consist of coffee, mangoes, sugarcane, rice, corn, and sorghum. Only 28.11% of the land is arable with 11.53% for permanent crops. Two-thirds of the population engages in farming as a way to make a living. Extensive deforestation, erosion and lack of potable water is evident throughout Haiti. (CIA World Factbook, www.cia.gov)
This erosion of top soil and lack of environmental protection has contributed to a severe decrease in agricultural production. Government officials have recently addressed the need to stop continued deforestation, primarily for charcoal production and to develop strategies to protect the environment. (World Bank. www.worldbank)

In 2005, with the help of the International Monetary Fund, a microeconomic program was developed. A year later, the economy grew by 1.8% making 2006 the year with the highest growth rate since 1999. Because of its lack of investment and severe trade deficit, Haitians experience higher rates of inflation than other developing countries with similar characteristics. The country relies on formal international economic assistance for its fiscal sustainability. More than 66% of the labor force lack formal jobs with extensive unemployment and underemployment. Haiti lacks a skilled labor force. (CIA-The World Factbook. www.cia.gov)

Maintenance of civil order in Haiti has been accomplished by the deployment of 8000 peacekeepers from the United Nations Stabilization Mission when President Jean-Bertrand Aristide was ousted in 2004. Although plagued by political violence and corruption, Haiti held its first democratic election in February 2006. (CIA-The World Factbook. www.cia.gov)

Jeremie:

Jeremie, Haiti is located in the western part of the island in Grande Anse. It is an extremely isolated and poor area of Haiti. The mountains are lush with vegetation but this has not stopped destructive mudslides from occurring. The majority of people live in poor conditions with several people often living together in one room shacks. Water must be obtained from community wells or streams and rivers. It is not uncommon for
Haitians to have to walk miles for “potable” water. Few have electricity and children can be seen studying under street lamps or restaurant signs. The children often walk great distances to school in immaculate school uniforms. Women can also be seen walking to and from town with baskets of produce, clothing, or plastic containers full of water on their heads. The roads consist of bedrock with large holes and gullies and are difficult to navigate on foot or vehicle. Although much of the town is in disrepair, the French influence is evident in the architecture of the buildings.

The average income in Jeremie is between $90-$300 per year, a majority of the income derived from farm production, charcoal production, and menial jobs. (www.haitianhealthfoundation.org)

The Haitian Health Foundation (HHF) is a community based health program located in Jeremie, Haiti. This private volunteer organization has been in existence since the mid 1980’s delivering primary care to women and children throughout the Grand Anse region of western Haiti. The foundation serves the counties of Jeremie, Moron, Bonbon, and Roseaux. The Haitian Health Foundation mission statement “is to improve the health and well being of the poor, sick, and the infirm of the greater Jeremie area, with a focus on women and children.” The foundation achieves this through: “a secondary care outpatient clinic, a public health outreach program, nutritional rehabilitation services, safe motherhood services, community development programs, self-help programs which advance family and community self-sufficiency, responding to emergencies and crises with humanitarian relief, and programs to facilitate the exchange of knowledge and expertise between Haitians and the international community.” (www.haitianhealthfoundation.org)
Specific programs of the Haitian Health Foundation include:

- Save the Family Program that targets extremely poor families in need of housing “Happy Homes”
- Home repair and construction
- Latrine building
- Pig, egg, and chicken distribution
- Prenatal care
- Birth attendant training
- Exclusive breastfeeding program
- Mother’s and father’s club
- Methods of child spacing
- STD/AIDS national surveillance and prevention services
- Nutritional recuperation program for malnourished children
- Nutrition surveillance
- Immunizations
- Oral re-hydration therapy
- Acute respiratory care at home
- De-worming
- Dental care
- Xerophthalmia prevention
- Birth and death registry
- The Integrated management of childhood Illness

Additional programs that have made an enormous impact on the health of Haitians in this area have been the addition of the Maternal Waiting Home at the Center of Hope, which cares for women with high risk pregnancies, the Nutritional Rehabilitation and Nutrition Pavilion, which provides food and education and KOMBIT, a USAID funded child survival program focused on maternal-infant mortality reduction, child spacing, and breastfeeding.

In 1993, The Haitian Health Foundation developed a program with the intent to encourage exclusive breastfeeding and support the Lactation Amenorrhea Method (LAM). LAM is a short-term family planning method that is based on lactational infertility which offers protection from pregnancy. LAM provides optimal infant nutrition, boosts infant immunity, prevents illnesses that are associated with formula milk
and promotes mother-child bonding, while at the same time, providing safe and effective temporary child spacing. The family planning method is used up to six months postpartum exclusive or nearly exclusive breastfeeding and amenorrhea LAM has been shown in clinical trial to be 99 percent effective. (La Leche League. www.lalecheleague.org 2006-7)

The LAM collaboration occurred between HHF and Georgetown University. Georgetown trained the nursing staff about lactation, providing care and education around breastfeeding issues and concerns, and supplied breast pumps. UNICEF sponsored a national breastfeeding campaign and enrolled HHF as a partner, which assisted HHF to in enrolling an unprecedented number of women (1000) who were exclusively breastfeeding for the first 6 months. Initial funding for the program was provided by UNICEF until HHF trained those women who exclusively breastfed to act as volunteers. This initiative led to a “train the trainer” design. A data base was established to track women’s breastfeeding patterns where rates of complete breastfeeding, partial breastfeeding and token breastfeeding were documented. (HHF Breast Feeding Program 1993-2005 report)

The Haitian Health Foundation also began to reevaluate past practices as well as cultural practices in the community and villages in an attempt to not only encourage breastfeeding but to also discourage unhealthy practices. One Haitian traditional practice was the use of a purgative called lok; made up of castor oil, nutmeg and various other ingredients. CARE, a world renowned non governmental organization began a campaign to encourage women not to use lok but to give colostrum because of its natural purgative properties. The slogan used to distribute this message was “the first milk is the best
purgative.” After HHF adopted this public health service message, the use of lok in newborns was all but eradicated by 1998. (HHF Breast Feeding Program 1993-2005 word document)

In 2004, the Haitian Health Foundation received a grant from USAID and additional funding from private donors through the Haitian Health Foundation to implement a five year child survival program focused on reducing maternal and newborn mortality in the Grande Anse Department, specifically Jeremie and the surrounding regions comprising UCS II (government administrative area). This new program is KOMBIT, from “the Haitian Creole word for an assembly of people who have come together for a common goal”. In additional to maternal-newborn care, the program addresses exclusive breastfeeding and child spacing. (KOMBIT-DIP, April, 2005)

Presently, the birth rate in Haiti is 36.44/1000 with an estimated infant mortality rate of 71.65/live births (2006). The total fertility rate is 4.94 children per woman. (CIA World Factbook, 2006) Recent UNICEF statistics (1996-2004) put the maternal mortality ratio at 520 with a life time risk of 1:24. The percentage of children that are exclusively breast fed (<6 months of age) is 24%; the percentage of children breast fed with complementary food (6-9 months of age) is 73%, and children that continue to receive breast milk between 20-23 months of age is 30%. (UNICEF-At a Glance: Haiti)

KOMBIT works in collaboration with several other organizations functioning in and around Jeremie; such as the Ministry of Public Health’s Grand-Anse Health Department and Unite Communale de Sante, the Sisters of the Good Shepherd. It is also integrated with several other HHF programs, including USAID mission sponsored
Haitian Health Foundation-Management Sciences for Health Child Survival Program and the Sexually Transmitted Infection program. (KOMBIT-DIP, April, 2005)

In 2005, KOMBIT estimated that it would provide services to approximately 171,703 people. 37,776 (22%) of that population are women between the ages of 15-49 years of age and 25,755 (15%) are children under the age of 5 years. (KOMBIT-DIP, April, 2005)

With the support of these various partnerships, KOMBIT has positioned itself to create innovative and sustainable interventions to significantly alter the lives of mothers and their children. The three core components to the program involve interventions in maternal-child care (60%), breast feeding (20%), and child spacing (20%). (KOMBIT-DIP, April, 2005)

Concerning the issue of exclusive breast feeding, the KOMBIT objectives are to:

- increase the percentage of women who breast feed within the first hour of birth from 69% to 85% or to initiate breastfeeding before placenta expulsion (increase to 20%), and to
- increase the number of women who exclusively breast feed for the first 6 months from 60% to 85%. (KOMBIT-DIP, April, 2005) Both of these objectives are equally important because putting a baby immediately to breast after birth is an important indicator for successful exclusive breast feeding.

By utilizing concepts that work in tandem with one another such as behavior change communication, quality improvement of community care and clinical proficiency, and convenience of services, KOMBIT proposes to meet their objectives. The quality of maternal child care is addressed through staff education and training in prenatal, postnatal and newborn care. Behavioral Change Communication works by training whole villages
about important medical events and the actions needed to be implemented to prevent maternal infant mortality.

There are two specific KOMBIT goals that relate to breastfeeding. The first is to increase the number of infants (by 20%) put to the breast after the placenta is delivered. The national policy states that the neonate should be put to the breast immediately after delivery. The Knowledge, Practice and Coverage Survey (KPC-2005) data showed that 69% of infants were put to the breast within the first hour after delivery for HHF and non HHF areas. In a small study consisting of nine women, only one mother (11%) breastfed her infant prior to placenta expulsion. To meet this aim, KOMBIT requires monthly reports from the field staff (i.e. health agents and volunteers) documenting the number of women who breastfeed immediately after delivery. Health agents received instruction on how to reinforce this message throughout their villages and to include this information on their pregnancy outcome reports. However, there has been reported resistance to this additional monitoring due to the perceived burden of increased documentation at the village level as well as KOMBIT. Lack of teaching resources has also complicated this matter. (KOMBIT-DIP, April, 2005)

KOMBIT’s second breastfeeding goal is to increase that rate of exclusive breastfeeding for the first 6 months to 85%. The current national policy stresses the importance of educating mothers about the health benefits of exclusive breastfeeding for the infant as well as the mother. KPC reported that in a 24 hour recall, 60% of (HHF and non HHF areas) mothers stated that they breastfed their infants (6 months or younger) exclusively. National strategy emphasized national training for all maternal/family
planning health personnel and received the support of regional areas. (KOMBIT-DIP, April, 2005)

The Haitian Health Foundation developed a breastfeeding-tracking program. Women and teens, 15-49 years of age are registered by their local health agents and given a card that contains important health information, including immunizations, pregnancies, births, and 6 month postpartum outcomes as well as breastfeeding. It utilizes the Georgetown University model definitions of complete, partial, or token breastfeeding. The card contains information that is pertinent to a woman’s well being beginning with puberty and the subsequent birth of children. Within the card there are areas that track child spacing, family planning methods, acquired skills that will save lives (including making oral replacement therapy and home based life saving skills.) and delivery dates.

The children of the Haitian Health Foundation also have child health cards where vaccinations, weights, illnesses, and exclusive breastfeeding rates. Infants that are exclusively breastfed for 6 months receive a sticker on their cards which signifies successful completion of HHF’s goal. Mothers receive positive feedback for completing of such an important health milestone.

In the field, health agents keep monthly records of all registered women and children. Statistics are kept for breast feeding and the use of lactation amenorrhea method. According to the public health director, this field data necessitates prudent validation and confirmation of the rates of breast feeding in the villages. In view of the fact that this information is communicated to the Ministry of Health and is shared with other organizations and academic centers, it is paramount that the data be accurate.
The Haitian Health Foundation (HHF) recognized early in program development the importance of exclusive breastfeeding, community involvement, and the essential role health care providers played in the promotion of breastfeeding. Dr. Bette Gebrian, the Public Health Director of HHF, indicated that this community-based exclusive breastfeeding program was implemented in 1993. Dr. Gebrian was trained at Georgetown University as a lactation consultant and received training in the Lactation Amenorrhea Method (LAM). She returned to Haiti, and with the assistance of Georgetown University, trained the HHF staff in lactation and LAM. Dr. Gebrian was able to document that educated health professionals at HHF’s clinic were giving formula instead of breastfeeding. She demonstrated that this staff behavior had an influence on patient behavior. She recognized the importance of staff as role models in promoting exclusive breastfeeding. The HHF staff wanted to emulate American feeding practices by using formula and in effect, separating themselves from the rest of the population. The ability to buy formula was seen as a status symbol—a sign of advanced education. To overcome this practice of giving formula, Dr. Gebrian utilized various props and incentives to encourage the staff to breast feed. She was able to introduce the use of breastfeeding pumps and nursing cups. But perhaps the most significant item that transformed the staffs’ attitude about giving formula was the introduction of breastfeeding clothing.

According to Dr. Gebrian, “lessons learned about the introduction of exclusive breastfeeding include:

1. Support of nurses and doctors is critical as they often bottle feed. This includes the use of Medela breast pumps and a 3 month maternity leave from work at HHF and support of pumping at work;
2. Breast feeding clothing demonstrates that this is a “American” behavior (special clothing for lactating mothers demonstrates support breastfeeding practices)

3. Distribution of cups with covers and spoons for pumped breast milk encourages exclusive breast feeding;

4. Strong and consistent messages about using colostrum rather than lok (a purgative) with grandmothers and mothers took hold over a period of 5 years;

5. Support of fathers with tee shirts when their wives reached 6 months of exclusive breast feeding was an important aspect of the program;

6. Engaging “mother graduates” to become peer support for their neighbors was very successful and accounts for the continued success of the program since 1995;

7. The UNICEF program for Baby Friendly Hospital came at a good time to reinforce a home based behavior in hospitals” (Dr. Gebrian)

HHF’s commitment to breastfeeding was exhibited by their ability to provide additional education and training to health care staff. Several nurses and health care agents were given the opportunity to attend training in Port au Prince sponsored by the Academy for Educational Development (AED). One of AED’s most successful projects is LINKAGES. The global program’s goal is to increase breastfeeding and additional associated practices to enhance maternal reproductive health, increase child spacing, and reduced the transmission of HIV/AIDS. Through this program, LINKAGES provides education and training on breastfeeding, lactational amenorrhea method (LAM), maternal-child dietary practices, and technical information. (AED, 2006)

RESEARCH

Objective:

The objective of this research was to understand and document exclusive breastfeeding experiences in rural Haitian women

Methods:

Survey Methodology and Sampling:

Three methods were used to assess the breastfeeding experiences of Haitian women. A breastfeeding survey was administered in four villages. Three villages had
access to health care provided by the Haitian Health Foundation. One village had no access to HHF. Two focus groups were also conducted. One group was conducted at the Center of Hope in Jeremie and the second group was conducted in one of the villages. The last method evaluated exclusive breastfeeding (6 months) data collected by health agents from HHF.

A survey was developed to learn about exclusive breastfeeding practices of mothers and the subsequent feeding behaviors of their infants. Demographic information included mother’s age, infant’s age, and number of living children. The survey assessed how many women were exclusively breastfeeding as opposed to partially or mixed breastfeeding. The WHO definition of partial breastfeeding is: “giving a baby some breastfeeds, and some artificial feeds, either milk or cereal, or other food.” (Harmon-Jones 2006) The survey also assessed when a baby is first put to breast after delivery which is one of KOMBIT’s main objectives. Breastfeeding problems, cultural beliefs about breast milk, baby’s health, successes and barriers to breastfeeding, and overall knowledge of breastfeeding were also determined. Qualitative data was gathered from the surveys (N=50) codified.

**Focus Groups:**

Two focus groups were conducted to elicit discussion about exclusive breastfeeding practices. One focus group took place in Jeremie at the Nutrition Pavilion at the Center of Hope and the other in the village of Robin.

Mothers of infants six months or younger were interviewed. Three HHF villages (Robin, Carrfou Prince, Fond De Rouge) and one non-HHF village (Gomier) were selected for this study. The HHF villages had access to both health care and
breastfeeding education through health agents, nurses, and doctors The village of Gomier did not have access to trained health care providers but received care from lay midwives if available. Each group had six participants. Women who attended the HHF health posts and lived in Gomier were randomly approached and asked to participate. Prior to speaking with the mothers (focus group and survey), a research summary was read to participants as per The University of Connecticut Institutional Review Board. (an informed consent was not deemed necessary for this project by the IRB)

Mothers were given gift bags containing soap, wash clothes, tooth paste/tooth brush and a small toy as a symbol of appreciation. Mothers also received nursing bras that had been donated to HHF.

**Exclusive Breastfeeding Data:**

Quantitative data gathered from monthly health agents’ paper reports from 4 regions (Jeremie, BonBon, Moron, and Roseaux) were organized by month and year for a total of 18 months of breastfeeding data. The data was entered in an excel spreadsheet and then coded for data entry into Stata Version 9 (statistical data base) for analysis.

Surveys and focus groups were completed in Creole with the assistance of a Haitian translator. The answers were then translated into English. Surveys and focus group questions were translated from English to Creole by Professor Gebrian, and then reviewed by the KOMBIT breastfeeding expert and senior nurse. Prior to IRB submission, the documents were translated and back translated by KOMBIT’s administrators.
Results:

Focus Group Data:

The women in the focus groups were asked questions about breastfeeding, barriers to breastfeeding, and what makes breastfeeding successful. Each focus group consisted of 6 women. Mothers were both primipara and multipara and their infants were between the ages of one month and five months. The focus groups took place in two locations; Jeremie and Robin and lasted approximately 20 minutes due to time constraints. The Nutrition Pavilion at the Center of Hope is located in the Town of Jeremie. Robin is a village that is approximately 2 hours outside of town. None of the women in Robin reported receiving prenatal care and four women from Jeremie received prenatal care. All women agreed that breastfeeding was the best milk for babies. The women in Robin were presently exclusively breastfeeding while four women at the nutrition pavilion exclusively breastfed their infants. The one woman who occasionally breastfed had just returned to the area from Port au Prince and she also gave her infant formula. The women in Jeremie were well educated about the superior quality of breast milk. They cited the importance of giving colostrum for its protective qualities and purgative effects. The women of Robin were equally informed but simpler in their answers. All women agreed that their babies were healthy and that breast milk protected them from diarrhea, colds, and other diseases.

Both groups of mothers discussed the problem of nipple pain as being a barrier to successful breastfeeding. The women in Robin agreed that they had no choice but to breastfeed through the pain and hope that the pain would eventually go away. These women also stated that breastfeeding was problematic when they had to go to market or
fetch water. Women in Jeremie pumped breast milk into a cup and had others give the infant breast milk while they were at the market.

In Robin, the women felt that eating sugarcane, coconut, avocado, and bananas would spoil breast milk and make babies sick, but eating papaya, “chux palmiste”, and “merliton” fortified breast milk. One woman told me that merliton had a lot of vitamins in it and that was good for her milk.

Mothers were asked if breastfeeding offered other advantages to a mother and child in addition to health and being economical. Neither group of mothers understood this question. Responses to this open ended question were identical to survey responses. When specifically asked about maternal-infant bonding, “Does breastfeeding give you stronger, different, special feelings about your baby?” the responses were affirmative but the mothers were unable to discuss this in any detail.

Village Data:

Village data from the HHF data base was analyzed to determine how many women exclusively breastfed for a total of six months from January 2005 to August 2006. Each village was sorted by region: Bonbon, Jeremie, Moron, and Roseaux with Jeremie being the largest. Fifty-three villages were recorded. The results are as follows:

Table 1. 6 months EBF completion rates for 4 Regions in Grande Anse-Jan-Aug 2006

<table>
<thead>
<tr>
<th>Region</th>
<th>6 month EBF 6 months 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonbon</td>
<td>40</td>
</tr>
<tr>
<td>Jeremie</td>
<td>679</td>
</tr>
<tr>
<td>Moron</td>
<td>313</td>
</tr>
<tr>
<td>Roseaux</td>
<td>79</td>
</tr>
<tr>
<td>Total</td>
<td>1111</td>
</tr>
</tbody>
</table>
Table 2. 6 months EBF completion rates for 4 Regions in Grande Anse Jan-Dec 2005

<table>
<thead>
<tr>
<th>Region</th>
<th>6 month EBF 12 months *2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonbon</td>
<td>54</td>
</tr>
<tr>
<td>Jeremie</td>
<td>833</td>
</tr>
<tr>
<td>Moron</td>
<td>505</td>
</tr>
<tr>
<td>Roseaux</td>
<td>128</td>
</tr>
<tr>
<td>Total</td>
<td>1520</td>
</tr>
</tbody>
</table>

*Actual calculated months equals 11 due to elections in the month of March where data was not collected

Table 3. 6 months EBF completion rates for 5 Regions in Grande Anse Jan 2005-Aug 2006)

<table>
<thead>
<tr>
<th>Region</th>
<th>6 month EBF 18 months 2005-2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonbon</td>
<td>94</td>
</tr>
<tr>
<td>Jeremie</td>
<td>1512</td>
</tr>
<tr>
<td>Moron</td>
<td>815</td>
</tr>
<tr>
<td>Roseaux</td>
<td>207</td>
</tr>
<tr>
<td>Total</td>
<td>2628</td>
</tr>
</tbody>
</table>

The overall numbers of breastfeeding women per village or region was difficult to determine because of data collection issues. Missing data, partially due to the March 2005 election, was a significant issue that affected overall numbers. KOMBIT had determined through a KPC (Knowledge, Practices, Coverage) survey that breastfeeding rates among women with children less than 6 months of age were 69%. For the 53 villages surveyed, 2005 data showed that there were a total of 60 data points missing making it difficult to calculate the exact numbers. Of interest, after the elections, the month of April 2005, showed 16 missing data points. In 2006 for the months of January to August, 49 missing data points are observed.
Survey Data:

Survey data from the non-HHF village of Gomier and the HHF villages were analyzed to examine cultural breastfeeding practices and how education and healthcare interventions affect exclusive breastfeeding.

Table 4: Mother’s Age by Area

<table>
<thead>
<tr>
<th>Mother’s Age (years)</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>18-20</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>21-24</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>25-29</td>
<td>9</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>30-34</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>35</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>25</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

Mothers who were interviewed ranged in age from 18 years to over 35 years of age, with 28% of the women between the ages of 25-30yrs. Four women from Gomier were 18yrs old compared to one woman from an HHF village.

Table 5: Number of Children by Area

<table>
<thead>
<tr>
<th>Number of children</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>15</td>
<td>17</td>
<td>32</td>
</tr>
<tr>
<td>4-7</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>7 plus</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>25</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

Children’s age range included: less than one month 22%, 1-3 months 38%, and 3-6 months 36%.
Table 6: Age of Youngest Child by Area

<table>
<thead>
<tr>
<th>Age of youngest kid</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1mo&lt;=age young kid&lt;3mo</td>
<td>12</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>3mo&lt;=age young kid&lt;6mo</td>
<td>7</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>12&lt;=age young kid</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>24</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

Table 7: Current Breastfeeding by Area

<table>
<thead>
<tr>
<th>Currently BF</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>yes</td>
<td>21</td>
<td>25</td>
<td>46</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>25</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

The number of women who were exclusively breastfeeding at the time of the interviews was 100% for the HHF villages and 84% for Gomier (<6 months).

Table 8: Timing of Breastfeeding Initiation by Area

<table>
<thead>
<tr>
<th>When did you start BF</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before cleaning</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Within 2hr birth</td>
<td>12</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>After plac exp</td>
<td>7</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>1day</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>don't know</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Over 3 days</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>25</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

A total of ten women starting breastfeeding before perineum cleansing took place (3 non HHF and 7 HHF). Eleven HHF women (44%) began breastfeeding after the placenta was expelled, with seven women from the non HHF village. The majority of women interviewed in Gomier breastfed within two hours of delivery (48%) The
remaining six women waited between 1 day (n=1 HHF) and over 72 hours (n=3 non HHF) to start breastfeeding, with one HHF woman responding that she did not know when she started.

Table 9: Giving Colostrum by Area

<table>
<thead>
<tr>
<th>Did you give colostrum</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give yellow milk (YES)</td>
<td>22</td>
<td>21</td>
<td>43</td>
</tr>
<tr>
<td>Dump yellow milk (NO)</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
<td><strong>25</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

In Gomier, 22 women gave colostrum, one woman did not remember and one woman did not answer the question. In the HHF villages, 21 women gave colostrum; three women discarded (“dumped”) the colostrum. One woman did not give colostrum because she had delivered via cesarean section. The two remaining women stated that they did not know why they discarded the first milk.

Table 10: Prelacteal Feeds by Area

<table>
<thead>
<tr>
<th>What did you give baby before BM</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>water</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>milk</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>nothing</td>
<td>21</td>
<td>24</td>
<td>45</td>
</tr>
<tr>
<td>other</td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>25</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

The majority of women in both villages (90%) did not give alternative feedings to their infants. However in Gomier, four women gave fluids prior to breast milk: glucose, formula, water, and medication (not specified).
Only one HHF woman gave formula because she felt that the baby “was not crazy about breast milk” because baby pushes away from the breast. She gave the baby two bottles of formula a day and juice via a bottle. This mother stated that although she knows that breast milk is the best food for babies, she is not completely convinced of its benefits. She explained that she has seen many breastfed babies contract diarrhea. This woman was over 35 years of age, with more than 6 children, her youngest was 1-3 months of age.

HHF women did not give other feedings to their infants (with the exception of the woman described above). Seven women from Gomier gave the following answers for giving a breast milk substitute: not enough breast milk (n=3) illness (n=1) and other reasons (n=3).

Table 11: When Mother gives Breast Milk by Area

<table>
<thead>
<tr>
<th>When do you give baby the breast</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby cries</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Smack lips</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Turns to breast</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>All the time</td>
<td>19</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td>Before baby cries</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Let down reflex occasions</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Wakes up</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
<td><strong>24</strong></td>
<td><strong>48</strong></td>
</tr>
</tbody>
</table>

The question that asked mothers when they gave their babies was to examine whether mothers could identify feeding cues from their infants. Mothers in the non HHF village reported that they gave their babies the breast “all the time” (79%). HHF women
gave a variety of answers to this question demonstrating a minimal knowledge of feeding cues: lip smacking, turning head towards breast, and restlessness/whimpering. One mother reported that she gave her baby the breast whenever she had a letdown reflex, six mothers waited to breastfeed when their infants cried (compared to three from Gomier) and nine mothers gave the breast “all the time”.

Table 12: Frequency of Breastfeeding by Area

<table>
<thead>
<tr>
<th>No. of times BF Daily</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 3</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>4 to 7</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>8 to 12</td>
<td>8</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>&gt;12</td>
<td>12</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
<td><strong>25</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

Mothers from both villages are appropriately breastfeeding ≥ 12 times a day (81.6%) A combined total of nine women breast feed less than eight times a day. Both groups appear to be breastfeeding more than four times a night.

Table 13: Frequency of wet diapers by Area

<table>
<thead>
<tr>
<th>Frequency of wet diapers per day</th>
<th>Gomier</th>
<th>HHF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 times per day</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4-8 times per day</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>9-11 times per day</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Over 12 times per day</td>
<td>21</td>
<td>13</td>
</tr>
</tbody>
</table>
Table 14: Frequency of Bowel Movements by Area

<table>
<thead>
<tr>
<th>Bowel movement per day</th>
<th>Gomier</th>
<th>HHF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>11</td>
</tr>
</tbody>
</table>

The frequency of bowel and bladder elimination were assessed to determine hydration and caloric status. Mothers were more precise when describing bowel movement patterns; often citing the number of days that occurred between bowel movements. Urinary frequency was often described as “a lot” and the women were often asked to clarify their answers.

Table 15: Reasons for Inadequate Breast Milk by Area

<table>
<thead>
<tr>
<th>Reasons for inadequate breast milk</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>upset</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>sick</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Ate wrong food</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Not eating enough</td>
<td>9</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Not drinking enough</td>
<td>7</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>don't know</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Not enough food or drink</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>none</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>drank lemonade</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>other</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>23</strong></td>
<td><strong>48</strong></td>
</tr>
</tbody>
</table>

When mothers were asked if there were situations in which women could not produce enough milk, 88% of the mothers from Gomier said that there were several reasons for this situation. The most significant reason for this was not eating enough
food (36%), followed by not drinking enough liquids (28%), lack of food and drink (8%), didn’t know why (20%), illness (0.04%), and other – “spend time outside” (0.04%). HHF moms cited not eating enough (30%), didn’t know why (13%), no reason (13%), not drinking enough (7%), emotions – “upset” (7%), illness (8.7%), ate the wrong food (4.3%), drank lemon juice (4.3%), other-not specified (4.3%), and lack of food and drink (4.3%).

Table 15: Causes of Spoiled Breast Milk by Area

<table>
<thead>
<tr>
<th>What can make BM spoil</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>upset</td>
<td>12</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>sick</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Ate wrong food</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>nothing</td>
<td>7</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>other</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>weaning</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>25</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

Interestingly, non HHF women cited more reasons for breast milk “spoiling” than the HHF women. Whereas HHF women thought that emotions could cause a decrease in milk production, non HHF women felt that negative emotions could cause milk to spoil (48%), 28% of the women believed that breast milk did not spoil under any circumstances, 3% felt it could spoil but did not know how, 0.04% mentioned illness, eating the wrong food and weaning respectively. A significant number of women from the HHF villages understood that nothing could ruin or damage breast milk (72%), 12% thought that illness could spoil milk, 12% felt that milk could be destroyed by “sores”, and one woman felt that weaning altered breast milk.
When asked if there were any circumstances that prohibited a woman from breastfeeding her infants, 71% of the women from Gomier said yes. Breast pain and engorgement ranked as the number one reason for not breastfeeding (25%), baby not growing or developing (12.5%), sick baby (8.3%), mother is ill and breastfeeding will cause malnutrition in baby (12.5%), mom is dehydrated (4.1%), baby is “gassy” (4.1%) and baby has dry skin (4.1%) and flat skin (4.1%). Comprehension regarding breastfeeding was greater in HHF areas with only 24% believing that there were circumstances when breast milk should not be given. All mothers stated that there are occasions when babies “just can’t take the milk.” It was not uncommon for the women to know at least one mother where babies would not breastfeed or became ill with breast milk. Moreover, none of the women interviewed mentioned HIV/AIDS by name or alluded to it as a reason for not breastfeeding.
Table 17: Actions to Improve Breast Milk by Area

<table>
<thead>
<tr>
<th>Actions</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drink more</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Eat more</td>
<td>7</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Eat more veg</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Special food</td>
<td>10</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>No answer</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>More than 1</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Eat and drink</td>
<td>2</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>24</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

When asked if there was anything that women could do to make their breast-milk “better” in quality, many women reported that “eating good food” including fruits and vegetables and drinking water/milk was effective.

Table 18: Source of Breastfeeding Teaching by Area

<table>
<thead>
<tr>
<th>Source</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>mother</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Health agent</td>
<td>1</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>friend</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>nurse</td>
<td>9</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>midwife</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>doctor</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>More than 1 person</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>no one</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>25</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

Women living in the HHF catchments and Gomier named several different sources when asked how they learned to breastfeed. Health agents working with HHF provided 56% of the breastfeeding teaching according to the survey, followed by midwives (20%). In Gomier, most women (36%) learned how to breastfeed from nurses,
16% from their mothers, 12% from a friend, and 12% from a midwife. Both groups reported unanimously that they did not have any problems with infant latching and that their babies nursed equally at both breasts. However, the participants did acknowledge breast and nipple problems associated with breastfeeding.

Table 19: Breast Problems by Area

<table>
<thead>
<tr>
<th>Region</th>
<th>Engorgement</th>
<th>Nipple Pain</th>
<th>Bleeding/cracked nipples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gomier (Non HHF)</td>
<td>58.3%</td>
<td>66%</td>
<td>20.8%</td>
</tr>
<tr>
<td>HHF</td>
<td>38%</td>
<td>48%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Table 20: Benefits of Exclusive Breastfeeding by Area

<table>
<thead>
<tr>
<th>Benefits of EBF</th>
<th>Gomier</th>
<th>HHF</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>don't know</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Better growth and dev</td>
<td>11</td>
<td>13</td>
<td>24</td>
</tr>
<tr>
<td>No preparation time</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>More than 1 answer</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Decreases illness</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Economic reason</td>
<td>5</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24</strong></td>
<td><strong>25</strong></td>
<td><strong>49</strong></td>
</tr>
</tbody>
</table>

The benefits of exclusive breastfeeding to infant growth and development were acknowledged by both groups of women (48%). Women who exclusively breastfed cited that their babies are growing well (100%) and felt that their babies were healthier than babies that were not breastfed. A decrease in episodes of illness such as diarrhea and respiratory infections were cited as another benefit of exclusively breastfeeding. Women
from Gomier stated that breastfeeding was economical and that by giving breast milk, they could then afford to buy milk for themselves.

In situations where mothers must leave their infants for extended periods of time, mothers from Gomier were more prone to give breast milk in a cup (40%) than giving other liquids such as water, juice, or other milk (24%). However, 36% of the women said that they never leave their baby or that they take their baby with them when they have to leave the village. HHF mothers give very minimal alternative liquids: juice and milk (8%). Survey answers illustrate that 64% of the mothers instruct others to give their babies' breast milk in a cup or take their babies with them wherever they go (28%).

**Discussion:**

The majority women of women in the Grande Anse Region of Haiti are exclusively breastfeeding their babies. Their general knowledge of breastfeeding is adequate; especially, the health benefits to their babies.

**Survey:**

In comparing the age of the women in the two groups, women that were interviewed from HHF villages were relatively older than the women from Gomier. The implication for having older mothers is that they have more cultural knowledge of breastfeeding than younger/new mothers and may support these women through breastfeeding difficulties. However, this can also be detrimental if the older mothers transmit past cultural behaviors, such as the use of lok.

Recent statistics from CIA assert that Haitian women have an average of 4.94 children. This survey indicated that 64% of the women interviewed had 1-4 children, 2% had 4-7 children, and 16% had over seven children. The importance of assessing the
present number of children speaks to the experience and knowledge women may have regarding breastfeeding practices. Women can base their decisions to breastfeed on whether their past experiences were positive or negative. They can also influence the decisions of women who have never breastfed.

It was important to determine the age of youngest child because the study was limited to infants under the age of six months (one child was 12 months old). Babies needed to be exclusively breastfed, but the survey was contaminated by partial feeding patterns.

KOMBIT is vigorously advocating women to breastfeed within the first hour of birth and preferably before placenta expulsion (average expulsion time is 30 minutes). KOMBIT is attempting to increase the first breastfeed before the placenta detaches to 20%; 44% of the women from HHF breastfeed within 30 minutes of delivery.

The Haitian Health Foundations work in educating women to give colostrum (yellow milk) instead of “dumping it”. Prior to educating women about colostrum, cultural practice dictated the dumping of colostrum and giving lok (purgatives) Mothers, fathers, and grandmothers were taught the importance of the immunological effects colostrum as well as its laxative effect. Women have embraced the practice of giving colostrum. Moreover, women do not routinely give substitute liquids prior to the first breastfeed, which not only helps with the passage of meconium but maintains the integrity of the gut. This is also important in decreasing the incidence of diarrheal diseases.

If women gave liquid substitutes, it was due to false information or lack of lactation and newborn education. For example, there is the myth that some women do not
produce enough milk. In reviewing the backgrounds of the women who stated that they did not have enough breast milk, one woman was educated about breastfeeding from a nurse and did not complain about any breast problems. She did assert that the hospital nurse said that she did not have enough breast milk because she could not urinate. The second woman learned about breastfeeding from a friend and stated that she had difficulty with nipple pain. The third woman was taught to breastfeed by her mother and suffered with nipple pain and engorgement. One woman reported that she was sick, had breast pain and did not continue breastfeeding (baby 1-3months of age). This woman was educated about breastfeeding from a midwife. For other reasons, one woman complained that her baby did not want breast milk and another that her baby wanted food (3-6month of age). The last woman did not finish answering the question as to why she gave something other than breast milk.

Four women from the HHF catchment area gave water, juice, tea if they augmented breast feedings. Six women gave water or milk. If women did give supplements to their babies, they gave the liquid to the infants in a bottle, a spoon or a cup.

Women need to be taught how long it takes for milk production to begin, what practices increases milk supply, and how to teach the infant to latch correctly. Support for breastfeeding is paramount in the early weeks of nursing. Moms need to be encouraged to continue breastfeeding, whether through pumping until nipple discomfort dissipates or engorgement is managed.

It is imperative to know how often children are being breastfed because of the ever present threat of dehydration, malnutrition, and disease. This correlates well what
women reported as the number of wet “diapers” per day that their infants have, mothers reported that most infants urinated $\geq$12 times a day. Urination frequency is a very good indicator of hydration in infants and children. An additional question that looked at breastfeeding consumption was the frequency of infant bowel movements. It is common for infants to have many bowel movements when breastfed as indicated by 36% of the women interviewed. But it is also common for infants to have bowel movements every two to three days. Women in both villages reported that their babies did not have daily bowel movements (64%); an indication that their babies are utilizing all necessary calories from the breast milk.

Various fruits and vegetables were identified as being especially beneficial: mirliton, papaya, cucumber, mango, cabbage, and chux palmiste. Mirliton is a type of squash “chayote squash” that taste like a zucchini and 34.6% of both groups of women cited this as the number one food to eat to fortify breast milk. HHF women felt that eating papaya (29.1%) was the most important fruit to eat. The women also believed that cucumbers (12.5%), chux palmiste (12.5) – palm hearts, and mangos (4.1%) are good for breast milk.

Nipple pain and nipple integrity problems are a direct result of incorrect latching; specifically improper positioning of the infant’s mouth on the nipple instead of the areola. The mother must be able to determine three factors associated with correct latching: the infant must have his entire mouth over the areola, his tongue must be under the nipple, and his lower lip must be protruding under the breast. The integrity of the nipple is critical when a mother is HIV positive or the HIV status is not known. Transmission of the HIV is intensified when there is damage to skin membranes. Moreover, breast
problems such as engorgement and mastitis can be attributed to poor breastfeeding techniques including positioning and insufficient nursing.

The HHF field collection tool used to capture breastfeeding data examined and documented women who have completed 5 months and 6 months of exclusive breastfeeding. Women who breastfed in months 1, 2, 3 and 4 were not documented. This may not be the most accurate method for collecting data. All breastfeeding rates should be captured to determine any trends. When looking at 5 and 6 month data, there were significant tracking problems. For example, there may be many women who have completed 5 months of exclusive breastfeeding in a previous month and no women completing 6 months of EBF in the following month (i.e. 4 women in July completed 5 months of EBF and only 1 woman in Aug completed 6 months of EBF- or 7 women completed 6 month.) The tool does not take capture the women who may stop breastfeeding or move in or out of the village. There is no accountability for a difference in the numbers. Most importantly, there is no tool that captures the reasons for breastfeeding cessation. Of note, the tool that the health agents utilize was rearranged in 2006 but the agents continued to document as they did in 2005.

Developing a tracking tool that captures specific identifiers for breastfeeding women may result in more accurate data capture. Moreover, precise documentation offered by identifiers may decrease duplicate entry if more than one health agent is working in the village or if more than one day of data collection is required to provide health care and education. It was noted that in some months, two agents were collecting data for the same village on the same day or on a consecutive day. This resulted in
several pages of documentation, with no way of knowing whether the data may have been doubled entered.

Identifying the reasons for the occurrence of omitted data would be useful for HHF. Missing data could be a result of tropical storms, violence, illness, inadequate staffing. Distinguishing between these factors can offer insight into the reasons for not achieving recommended goals and making improvements.

**Limitations of the Data:**

Unlike conducting research in the United States, where English is predominately spoken, resources are available, and there are existing infrastructures to utilize, research in a developing country can be markedly different. One of the major stumbling blocks to doing research in Haiti was the language barrier and the limited number of people available to translate. Having to rely on translators for data collection, it was difficult to know if mothers understood the questions being asked of them or if their entire responses were being captured on the assessment tool. I would not know if my questions were satisfactory in obtaining the information that I was researching until I reviewed the answers. Moreover, it was difficult to know the origins of the women that came to the health outposts (whether they belonged to HHF or not) because the nurses did not speak English and health cards were written in Creole. When at a health post, everyone has responsibilities and there isn’t always time to explain the process or to review health information with the researcher.

Physical space was another limitation in doing my research. It was difficult to maintain a private space for interviewing when the health post itself was small or the tree coverage from the sun was limited. This was important because most mothers had their
very young infants with them and the climate is very hot and humid. Many times during
the interviews, the translator and I would have to remind the waiting women to maintain
a distance from the dialogue that was taking place. At times, I was not sure if the
answers given reflected that mother’s experience with breastfeeding or if she heard
another woman giving the same answer.

Collating the data from the HHF villages on exclusive breastfeeding had
limitations as well. Health agents capture data on paper and returned the assessment
tools to HHF. It took many hours to organize and clean the data for electronic capture.
Within the eighteen months of data collection, the form was minimally changed but many
of the agents continued to record the data as they previously did. Therefore, the data had
to be looked at a second time to correct for the oversight. At times, there appeared to be
duplicate entries, miscalculations of total numbers of breastfeeders, and totals that were
not consistent. It seemed as if the number of women that exclusively breastfed to six
months was either grossly underestimated or overestimated.

Sample size for the survey was too small to adequately assess exclusive
breastfeeding practices in the Grande Anse region. The majority of variables did not
show any statistical significance. Moreover, due to time constraints and resources, access
to villages, especially those outside of the HHF catchments was limited.

Survey questions could have been more specific to Haitian culture and
breastfeeding practices rather than to American practices. Although many Haitian
practitioners reviewed the survey, I did not receive feedback on cultural practices as they
related to my questions. Most of my feedback related to syntax and although I was
informed the questions of bonding were not appropriate, they still remained in the survey.
In hindsight, I may have tried harder to rework this question so that it could have been culturally appropriate.

Questions regarding time intervals inadequately assessed maternal practices and infant behaviors. Time in Haiti does not have the same significance or importance as it does in US culture.

Women had trouble giving frequencies and many women gave ambiguous responses such as “all the time” to questions like-how often do you breast feed? Of course, this statement could also mean “on demand”. While women in the US are taught specific feeding cues in order to adequately provide newborns with the correct amount of feedings (because the use of drugs during delivery often render babies too sleepy to feed adequately); women in Haiti just feed their babies. These women are not carrying around little diaries were they keep track of infant bowel movements, wet “diapers”, feedings, “awake time” etc.

The issue of bonding in the US is critical for establishing emotional and physical connections between the infant and mother. Doctors as well as mental health practitioners are cognizant of this relationship and evaluate whether bonding takes place, since lack of bonding can lead to infant problems such as failure to thrive. Women were unsure as to how to answer questions relating to bonding. I was not able to fully understand the concept of the Haitian mother-infant relationship. It was also noted that the translators had difficulty understanding the questions and it would have been prudent to review the surveys more thoroughly with them and assess for comprehension.
Conclusion:

Breastfeeding is an extremely important public health issue that has critical implications for maternal child morbidity and mortality. Breastfeeding research conducted in developing countries is important for improving infant and child health. Although initial breastfeeding is quite common in developing worlds, exclusive breastfeeding for 6 months is often not the cultural practice. Many societies traditionally supplement breastfeeding with other liquids such as water, tea, and gruel leading to increases in infectious diseases and infant mortality.

Strong global health policies that promote and protect exclusive breastfeeding are critical. Governments and non governmental organizations must make exclusive breastfeeding a health care priority and continue to develop appropriate policies that address the needs of mothers and children as well as mother to child transmission of HIV through breast milk.

Research that specifically targets breastfeeding and HIV where substitute feedings are not accessible, affordable, safe, or sustainable should be emphasized. New innovations such as inactivating HIV-1 in breast milk by treating it with alkyl sulfate microbicide sodium dodecyl sulfate (DSD) and other cost effective methods such as heating breast milk should be supported. (Urdaneta, 2007)

Moreover, the most important aspect of promoting and protecting exclusive breastfeeding is to educate mothers, fathers, extended family members, communities, and those who care for mothers and children in the art of breastfeeding. By working with communities within their cultural context, including those individuals who have importance within the family or village, and educating the people about the benefits
exclusive breastfeeding will become the custom. Educating health care givers regarding their knowledge and attitudes and reeducating them when necessary will also increase the practice of breastfeeding and decrease the rates of morbidity and mortality for both mothers and children.

**Recommendations:**

Recommendations for further research include utilizing specific identifiers for women who are exclusively breastfeeding to assure accurate breastfeeding numbers and rates. Data collection on women who stop breastfeeding and their reasons for premature cessation should be completed for further evaluation. Outcomes research for infant health indicators: diarrhea, pneumonia, growth and development, HIV mortality rates relating to exclusive breastfeeding should also be considered.

**Utilization of Research:**

As a direct result of this research conducted in OCT 2006, the Haitian Health Foundation has made changes in how they collect data for exclusive breastfeeding rates in the area. According to Dr. Bette Gebrian, the actual exclusive breastfeeding rate for HHF catchment areas is at 87%.
References:

Academy of Educational Development (AED) http://www.aed.org/ Accessed 12/22/06


Farmer, Paul “Pathologies of Power Health, Human Rights, and the New War on the Poor” University of California Press, 2005 pg 30-31


Gebrian, Bette. Breastfeeding (report-unpublished)


Haitian Health Foundation, KOMBIT DIP Report April 2005 (word document)

Haitian Health Foundation, Breastfeeding Program 1993-2005 (word document)


Save the Children, www.savethechildren.org/countries/latin_america_carribean/haiti.asp Accessed 1/14/07
Taveras, Elise M, Li, Ruowei, Grummer-Strawn, Laurence, Richardson, Marcie, Marshall, Richard, Rego, Virginia, Miroshnik, Irina, Lieu, Tracy A, Opinions and practices of clinicians associated with continuation of exclusive breastfeeding. Pediatrics 2004 Apr; 113(4) 283-90


UNICEF, World Breastfeeding Week, 2006 www.unicef.org Accessed 11/12/06


Yeo, BA, Bequet, L, Ekouevi DK, Krawinkel, M. Attitudes towards exclusive breastfeeding and other infant feeding options- a study from Abidjan, Cote d'Ivoire. Tropical Pediatrics 2005 Aug; 51(4); 233-6 Epub 2005 May 12


WHO/UNICEF “Ten steps to successful breastfeeding” www.who.int Accessed 1/16/07


Appendix 1:

Principal Investigator (PI): Prof Judy Lewis
PI Phone Number:
Co-Investigator(s): Susan Roman, Dr. Bette Gebrian
Title of Research Study: Exclusive Breast Feeding Practices in Rural Haitian Women
Expected Duration of Subject’s Participation: 1-2 hours
IRB Number: 07-064-2

What Is The Purpose Of This Research Study? Ki Bi Etid Sa?
This research study is about exclusive breast feeding in rural Haitian women. The purpose of this research study is to count how women feed their babies for 6 months, as well as find out what makes breastfeeding successful and what makes breast feeding hard to do.

Etid sa se sou let manman an Haiti. Bi etic sa se pou konnen pi byen kijan manman bay piti you niriti pandan prymye 6 mwa. E tou nou vle konnen ki sitiasyn fe let manman fet byen e ki obstak nou genyen tou.

Why Am I Invited To Participate? Poukisa nou invite’m pou patisipe?
You are invited to take part in this study because you have a baby that is between the ages of 0-6 months old.
Nap mande ou pou patisipe nan etid sa paske ou genyen yon ti bebe ki geyen mwes ki 6 mwa.

How Many Other People Do You Think Will Participate? Kombyen lot moun ap patisipe nan etid sa?
25-50 women at the Haitian Health Foundation will talk to me and 25-50 women from the other villages around Jeremie. The total number of women who speak to me will equal 100.

Mwen swete gen 25-50 famn ki swiv nan HHF kap pale avem e lot 25-50 fanm ki pa nan zon HHF too. Mwen espire nap genyen 100 famn total.

Is Participation Voluntary? Eske mwan oblije patisipe?
It is your choice if you want to talk with me or not. You may also want to talk with family members, your health agent, nurse, doctor, or a friend before making a decision. If you decide to talk with me, you can change your mind at any time and stop talking. If you decide to stop talking, nothing bad will happen to you or your baby.

Sa se chwa pa ou si ou vle pale avem ou non. Ou ka pale ak lot moun nan fanmi ou, agan de sante, miss ou dokte avan ou di wi. Si ou decide pou pale avek mwen, ou toujour ka rete nempot moman si ou pa vle encore. Si ou pale avem ou non – sa pa di anyen pou ou piti ou vis-à-vis HHF.

How Long Will My Participation In This Study Last? Kombyen tan wap pale avem?
You will be asked to meet with the nurse on one day for 1-2 hours while you are at the Haitian Health Foundation or in your village.
Wap pale avèk yon moun HHF pou 1-2ere tan nan zon de travay HHF. Sa selman. Si ou pa nan zon HHF sa se menm keksyon and li dire menm tan.

- **What Will Be Done? Kisa wap fe?**
- **Survey Administration:** The nurse will ask you questions about your baby and breast feeding.
  Aministrasyon kesyone sa. Moun HHF ap mande ou keksyon sou ou-menn ak pifit ou e gijan ou bay li niriti.

  *Risks Associated with Survey Administration:* Risk ki asosye ak etid sa.
  There is no harm with the survey. You may feel uncomfortable answering some of the questions. Pa gen oken danje ak kesyone sa. Petet ou pa vle repon kek kesyon.

* Safeguards Taken: Proteksyon*
  You may always choose not to answer a question that makes you feel uncomfortable. Ou toujour ka di moun HHF ou pa vle repon kek keksyon si ou pa vle/

**How Will My Personal Information Be Protected? Ki sa nou fe ak infomasyon**
Your name and your baby’s name will not be used on the questionnaire when the nurse asked you question. We cannot be 100% right about people finding out that you answered these questions. We will not write you names on papers or in books. The answers to the questions will be put in a computer.

Nou pa kenbe non nou ou non pifit ou pou eitid sa. Se sa wap DI ki interese nou, pa kote ou viv ou lot bagay konsa. Nap kenbe repons ou selman.
Appendix 2:

Susan B. Roman
MPH student-UCONN
Prof. Judy Lewis/Dr. Bette Gebrian
(Final Version)

Esperyans alètman matènèl nan kay fam Ayisyen
kesyonè
Exclusive Breastfeeding Practices in Rural Haitian Women
Questionnaire

1. Ki laj ou? (manman) (Age of mother)
   Under (Mwens) <18 25-29 yr (ane)
   18-20 yr (ane) 30-35 yr (ane)
   21-24 yr (ane) >35 yr (ane)

2. Konbyen timoun ou genyen? (Number of children)
   1-3 4-6 >6

3. Ki laj denyè piti ou? (Age of youngest child)
   <1mwa 9-11mwa >24mwa
   1-2mwa 12-14mwa
   3-5mwa 15-17mwa
   6-8mwa

4. Eske w'ap bay (piti) tete kounye? (Are you currently breastfeeding?)
   (Non piti la/First Name of child)
   Wi (Yes) Non (No)

5. Ki lè ou te kòmanse bay tete aprè li te fet? (When did you start breastfeeding your baby?)
   Anvan manman te netwaye (Before the mother was cleaned)
   Anvan 2 zè pase aprè akouchman an? (Within 2hrs of birth)
   Anvan kompayen tonbe before the placenta is expelled
   Jis aprè kompayen tonbe after the placenta is expelled
   Aprè 1 jou (1 day)
   2 jou aprè oubyen plis( >2 days)

6. Kisa ou te fè ak premye lèt jon nan? (What did you do with the first yellow milk?)
   Give (bay li) dump (jete’l) other (lòt bagay) Ki lòt bagay?
7. Kisa ou te bay ________________ (Non pitit la/First Name of child) anvan ou te kòmanse ba li tete? (What did you give the baby before you started breast milk?)
   - water (dlo)
   - tea (te)
   - juice (ji)
   - milk (let bèf or lèt bwat)
   - other (lòt bagay)
   - nothing (rien)
   - purgative (lok)

   Ki lòt bagay?

8. Chak ki lè ou konn ba l’ tete pa egzamp? (When do you give the baby breast, for example?)
   - When the baby cries (le li krye)
   - when the baby turns his head toward the breast (le pitit vire tete li bo tete’ou)
   - other (lòt bagay)

   Ki lòt bagay?

9. Ki lòt bagay ou konn bay ______________ an plis tete? (Non pitit la/First Name of child)
   (What other stuff do you give in addition to breast milk?)
   - water (dlo)
   - tea (te)
   - juice (ji)
   - milk (let bèf or lèt bwat)
   - other (lòt bagay)

   Ki lòt bagay?

A. SI WI : poukisa ou konn fè sa ________________ (Non pitit la/First Name of child)
   (If you said yes—that you give your child other stuff in addition to breast milk, why do you do that?)
   - have to work (m’ap travay)
   - need to care for other children (genyen lòt timoun pou m’okipe)
   - house work (okipe kay)
   - not enough milk (lòt pa ase)
   - tired (fatige)
   - sick (malad)
   - other (lòt bagay)

   Ki lòt bagay?

B. SI WI : kijan ou konn bay li ________________? (Non pitit la/First Name of child)
   (If you said yes, You can give your child other things in his mouth, how do you do that?)
   - bibwon (bottle)
   - ve (cup)
   - kiye (spoon)
   - gode (cup with handle)

10. Kijan ou konnen lè________________te pran ase lèt nan tete-ou? (Non pitit la/First Name of Child)
   (How do you know that baby got enough milk from your breast?)
Baby pulls away from breast (li retire bouch li nan tete) ☐ falls asleep (li domi) ☐ mom takes baby off the breast (mwemem retire’l) ☐ other (lòt bagay) ☐

Kilòt bagay? ____________________________________________

11. Kisa ki ka fe fanm pa gen ase lòt? (In what situations women can be in when she does not have enough breast milk?)
   Upset (emosyon) ☐ sick (manman malad) ☐ someone made the milk dry up (moun ki fe let li pa ka vini) ☐ ate the wrong food (manje bagay ki pa bonne pou fanm kap bay tete) ☐ other (lòt bagay) ☐
   Kilòt bagay? ____________________________________________

12. Ëske gen yon lè lòt manman pa bon? Wi ☐ Non ☐
   A. SI WI: Kijan ou konnen si let ou bon [ou non]?
      (How do you know if your breast milk is good or not?)

13. Kisa ki ka fe lòt gate? (What can make breast milk spoiled?)
   Upset (emosyon) ☐ sick (manman malad) ☐ someone made the milk dry up (moun ki fe let li pa ka vini) ☐ ate the wrong food (manje bagay ki pa bonne pou fanm kap bay tete) ☐ other (lòt bagay) ☐
   Kilòt bagay? ____________________________________________

14. Daprè ou menm, èske gen yon enkonvenyan ki ka fe man man pa bay tete?
   (In your opinion, is there a situation when mothers should not give breast milk?)
   Wi ☐ Non ☐

15. Kisa ou menm, oubyen lòt manman, konn fe pou fe lèt vini pi plis ou pi byen?
   (What can you or other mothers do to make breast milk come in more or better?)
   Drink more (bwe plis) ☐ eat more (manje plis) ☐ take a special tea (bwe yon te espesyal) ☐ eat a special food (manje ked manje ki espesyal) ☐ other (lòt bagay) ☐
   Kilòt agay? ____________________________________________

16. Èske ____________ (Non pitit la/Fisrt Name of child) ap grandi byen? Is your baby growing?
   Wi (yes) ☐ Non (no) ☐

17. Konbyen fwa ____________ (Non pitit la/First Name of child) konn pipi pandan yon jou?
   (How many times does (baby) urinate during one day?)
   1-3 ☐ 4-8 ☐ 9-11 ☐ >12 ☐
18. Èskè __________ (Non pitit la/First Name of child) poupou chak jou?  
(Does (baby) defecate every day?  
Wi (Yes)  □  Non (No)  □ 

SI NON:  Chak ki lè li konn poupou? (if no, how often does the baby defecate?)

19. Èskè pafwa ou oblîje leve ____________ (Non pitit la/First Name of child) 
pou ba l’ tete paske l’ap dòmi twop?  
(Do you sometimes have to get up (baby) to give breast milk because he is sleeping a lot?  
Wi (Yes)  □  Non (No)  □

20. Ki moun te esplike ou kijan pou bay tete byen?  
WHO explained to you how to give breast milk well?)  
Mannman (mother)  □  ajan sante (health agent)  □  zanmi (friend)  □  
Miss (nurse)  □  matwon (midwife)  □  medsen (doctor)  □

21. Èskè pwent tete ou konn fè ou mal pandan w’ap bay pitit ou tete?  
(Have you had nipple pain while breast feeding?)  
Wi (Yes)  □  Non (No)  □

22. Èskè pwent tete ou konn blese ou, bay ti san?  
(Have your nipples had a wound or bled?)  
Wi (yes)  □  Non (No)  □

23. Lê bebe fenk fèt – èskè lèt ou te desann oubyen èskè tete ou angoje ou di?  
(Are you having any problems with engorgement (hard breasts)?  
Wi (Yes)  □  Non (No)  □

24. Èskè ou konn genyen yon nan pwoblèm sa yo?  
(Have you had the following symptoms?) Non (no)  □  
Fyev (fever)  □  
Tete fè mal anpil (pain in breast)  □  
Enfeksyon nan tete ou (infection in your breast)  □  
Yon boul nan tete ou (a ball in your breast)  □  
Yon chemen wouj nan tete ou kote li fè mal (a red route on your breast that is painful?)  □  
Kísa ou te fè?  What did you do?
25. Èske _______( Non pitit la/First Name of child) tete chak bo menm jan oubyen yon bo pi souvan? Does _______nurse from each side or one side more often?

☐ ☐ ☐ ☐

1 tete goch 2 3 tete yo egal 4 5 tete dwat

26. Lè _______( Non pitit la/First Name of child) ap tete, èske li gen pwoblèm pou mete bouch li nan pwent tete kòrèkteman? When _______nurses, does he have problems putting his mouth on the nipple correctly?

Wi (Yes) ☐ Non (No) ☐

27. Ki avantaj ki genyen lè pitit pran lèt manman? (What are the benefits of breastfeeding?)

28. Konbyen fwa w’ap bay tete pandan jounen? (How many times do you give breast during the day?)

1-3 ☐ 4-7 ☐ 8-12 ☐ >12 ☐

29. Konbyen fwa ou konn bay tete pandan lanwit? (How many times do you nurse in the night?)

1 ☐ 2 ☐ 3 ☐ >4 ☐

30. Lè ou pa lakay ou pou 6 è tan konsa, kisa moun nan kay ou ap (mete nan bouch/ bay) pitit sa pou nouriti? (When you are not at home for 6 hours or so, what do those in the house put in the baby’s mouth for nourishment?)

water (dlo)☐ tea (te) ☐ juice (ji) ☐ milk (let befor let arifisyal) ☐

other (lot bagay) ☐

pump breast milk into a cup (let ki te pire nan gode) ☐

31. Ki diferans ki genyen ant ti bebe ki tete sèlman paudan 6 premye mwa e lòt timoun ki pran tete ak lòt mange? (What difference is there between babies who breastfeed exclusively for the first 6 months and other babies who breastfeed and have other things
Appendix 3:

Principal Investigator (PI): Prof Judy Lewis
PI Phone Number:
Co-Investigator(s): Susan Roman, Dr. Bette Gebrian
Title of Research Study: Exclusive Breast Feeding Practices in Rural Haitian Women
Expected Duration of Subject’s Participation: 30 minutes for Focus Group (2 groups)
IRB Number: 07-064-2

What Is The Purpose Of This Research Study? Ki Bi Etid Sa?
This research study is about exclusive breast feeding in rural Haitian women. The purpose of this research study is to count how women feed their babies for 6 months, as well as find out what makes breastfeeding successful and what makes breast feeding hard to do.

Etid sa se sou let manman an Haiti. Bi etic sa se pou konnen pi byen kihan manman bay piti you niriti pandan prymye 6 mwa. E tou nou vle konnen ki sitiasyn fe let manman fet byen e ki obstak nou genyen tou.

Why Am I Invited To Participate? Poukisa nou invite’m pou patisipe?
You are invited to take part in this study because you have a baby that is between the ages of 0-6 months old.

Nap mande ou pou patisipe nan etid sa paske ou genyen yon ti bebe ki geyen mwes ki 6 mwa.

How Many Other People Do You Think Will Participate? Kombyen lot moun ap patisipe nan etid sa?
5-10 women at the Haitian Health Foundation will talk to me and 5-10 women from the other villages around Jeremie. The total number of women who speak to me will equal 10-20.

Mwen swete gen 5-10 famn ki swiv nan HHF kap pale avem e lot 5-10 famn ki pa nan zon HHF too. Mwen espire nap genyen 10-20 famn total.

Is Participation Voluntary? Eske mwan oblije patisipe?
It is your choice if you want to talk with me or not. You may also want to talk with family members, your health agent, nurse, doctor, or a friend before making a decision. If you decide to talk with me, you can change your mind at any time and stop talking. If you decide to stop talking, nothing bad will happen to you or your baby.

Sa se chwa pa ou ou vle pale avem ou non. Ou ka pale ak lot moun nan fanmi ou, agan de sante, miss ou dokte avan ou di wi. Si ou decide pou pale avek mwen, ou toujour ka rete nempot moman si ou pa vle encore. Si ou pale avem ou non – sa pa di anyen pou ou piti ou vis-à-vis HHF.

How Long Will My Participation In This Study Last? Kombyen tan wap pale avem?
You will be asked to meet with the nurse on one day for 20-30 minutes while you are at the Haitian Health Foundation or in your village.

Wap pale avek yon moun HHF pou 20-30 ere tan nan zon de travay HHF. Sa selman. Si ou pa nan zon HHF sa se menm keksyon and li dire menm tan.

- **What Will Be Done? Kisa wap fe?**
- **Focus Group:** The nurse will ask you questions about your baby and breast feeding.

Aministrasyon kesyone sa. Moun HHF ap mande ou keksyon sou ou-menm ak pítit ou e kijan ou bay li niriti.

*Risks Associated with Survey Administration:* Risk ki asosye ak etid sa.

There is no harm with the survey. You may feel uncomfortable answering some of the questions. Pa gen oken danje ak kesyone sa. Petet ou pa vle repon kek kesyon.

*Safeguards Taken:* Proteksyon

You may always choose not to answer a question that makes you feel uncomfortable. Ou toujour ka di moun HHF ou pa vle repon kek keksyon si ou pa vle/

**How Will My Personal Information Be Protected? Ki sa nou fe ak infomasyon**

Your name and your baby’s name will not be used on the questionnaire when the nurse asked you question. We cannot be 100% right about people finding out that you answered these questions. We will not write you names on papers or in books. The answers to the questions will be put in a computer.

Nou pa kenbe non nou ou non pítit ou pou eitid sa. Se sa wap DI ki interese nou, pa kote ou viv ou lot bagay konsa. Nap kenbe repons ou selman.
Appendix 4:

Focus Group Questions:
OCT2006 Final

QUESTIONS:
1. What's best about mother's milk compared to other milk? (for a child under six months)
2. Why is breastfeeding good?
3. What's not good about breast milk?
4. Why is powdered milk good or not good?
5. What do you think is hard about breastfeeding?
6. Is there anything that you could eat that would hurt your breast milk or make it better? What is it?
7. Besides food and protection for your baby, does breast feeding make a difference in how you care for your baby and how does it make or not make a difference?