

BREASTFEEDING BELIEFS AND BEHAVIORS:  
EVALUATING CULTURAL PATTERNS AMONG HISPANIC WOMEN

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## **Abstract**

This undergraduate senior thesis serves as both a review of the existing literature surrounding the topic of breastfeeding as a function of acculturation among Hispanic mothers in the United States and as an analysis of primary data obtained through the administration of breastfeeding behavior surveys and questionnaires. Specifically looking at the topics of emigration, acculturation, and attitudes towards breastfeeding, an initial background literature review offers a broad outline in preparation for analysis of results obtained from 100 surveys completed by self-identified Hispanic mothers attending pediatric offices in South Florida. These surveys collected demographic information from mothers and provided a series of vignettes describing scenarios that could assess a mother's opinions about breastfeeding. Current data have shown that the prevalence of breastfeeding among Hispanic subgroups in the United States varies, and that the probability of maternal breastfeeding throughout the first year postpartum decreases with increased level of acculturation. However, several previous studies call for additional analysis of the differences between individual subgroups and the contributing cultural and socio-demographic factors that may underlie these variations, which will serve as the fundamental topic of analysis and discussion of the primary data obtained during this study. The results of this primary data indicate similar patterns found in previous studies, namely, many of the survey respondents represented women of low acculturation level and high reported rates of breastfeeding. Specifically 80% of respondents were born outside of the US and 88% reported that they had breastfed. One of the more frequent reasons cited for discontinuing breastfeeding among this sample was the belief that the mother was not satisfying the baby with breast milk alone; consequently, formula given as the most popular supplement. Vignettes used to assess women's attitudes toward breastfeeding revealed a generally intermediate opinion of breastfeeding with some indication that a male spouse or partner may affect a mother's beliefs. These results demonstrate the importance of education for both mothers and male spouses about the mechanism of milk production and the effects that it has on women and infants overall.

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## **Introduction**

Healthcare professionals have long known the benefits that breastfeeding confers to both mothers and infants, and physicians agree that formula cannot match the effectiveness of breast milk in meeting an infant's nutritional, immunological, and developmental needs (Caldwell et al., 2002; Colson, 2002; Dept HHS, 2000; AAP, 2005; WHO, 2009). For newborns, breastfeeding reduces the probability of developing various gastrointestinal disorders, respiratory illnesses, ear infections, and illnesses associated with allergies. Also, breastfeeding has been linked to improved cognitive and psychomotor development in infants (Caldwell et al., 2002; Colson, 2002). For mothers, breastfeeding triggers a series of physiological changes that slow postpartum bleeding and aid in returning the uterus to its normal position. Women also experience a degree of lactational amenorrhea when they exclusively breastfeed, i.e. ovarian function is depressed or inhibited, which functions to prevent immediate pregnancy and thus effectively spaces birth intervals (Valeggia & Ellison, 2009). The absence of menses among lactating mothers also reduces iron loss thereby diminishing the chances of developing anemia (Colson, 2002). In addition, breastfeeding brings economic benefits because mothers do not need to continually purchase formula and bottles.

On the other hand, some may argue that the time needed to successfully breastfeed hinders a woman's ability to return to work and earn money. This may be particularly true if the workplace is not accommodating to a mother's need to take time to express or pump milk for later use. When confronted with this dilemma, mothers may choose a mixed-feeding method allowing the child to be fed with formula when she is at work and breastfeed whenever she is home. With the low prevalence rates of breastfeeding in the United States, we see that formula presents a common alternative to breast milk for many infants. Socially, breastfeeding has been

associated with the successful development of a mother-child bond. This is not to say that mothers who do not or cannot breastfeed don't bond with their children. On the contrary, familial bonding can be achieved regardless of feeding practices. However, arguments for breastfeeding as a natural, innate behavior have recently focused on the evolution of prolonged, on-demand breastfeeding as an adaptive, evolutionary mechanism (Hausman,2003).

In the absence of certain health-related circumstances that may prohibit the option of breastfeeding, exclusive breastfeeding can sustain optimal infant growth and development during the first six months of life (Cohen et al., 1994). This baseline standard as adopted by the American Association of Pediatricians (AAP) and the World Health Organization (WHO) further extends the period of breastfeeding through the first year of life, if possible (Dept HHS, 2000; AAP, 2005; WHO, 2009). The common practice in the United States seems to be to primarily breastfeed for the first 3 months of life, but this practice quickly declines following the third month postpartum and continues to decline throughout the first year of life (Shealey et al., 2008). During this time, supplementation with formula is common but gradually declines as the child is weaned and begins to eat other solid foods (Grummer-Strawn et al., 2008).

The low rate of exclusive breastfeeding throughout the first year of life in the United States has often been attributed to various social constructions of the breast including the view that the breast represents a sexual organ that is inappropriate for providing nourishment (Baumslag et al., 1995). Also, social taboos make the sight of a woman breastfeeding in public uncommon and even shocking. Other theories behind the declining popularity of breastfeeding include the widespread visibility and advertisement of formulas, and the lack of support for breastfeeding on the part of medical professionals (Colson, 2002). The recognized shortcomings of the medical field in supporting breastfeeding practices have led to the "Baby Friendly

Hospital” movement (Caldwell et al., 2002; Baumslag et al., 1995). Baby friendly hospitals have policies in place that promote breastfeeding including the staffing of lactation consultants, the option of rooming-in so that the mother can access the newborn for feedings, and encouragement of skin-to-skin contact between the mother and baby for the first hour immediately after birth to initiate the first feeding.

Despite the many advantages that breastfeeding offers, United States prevalence statistics fall far below the recommended guidelines, especially among minority populations, who have become a recent target for promotional campaigns that advocate breastfeeding practices (Dept HHS, 2000; Caldwell et al., 2002). To successfully meet public health goals of increasing the rates of breastfeeding and exclusive initial breastfeeding in particular, these campaigns must evaluate the social, economic, and cultural factors that contribute to attitudes towards breastfeeding among minority groups. Women of Hispanic descent present a particularly unique case when evaluating breastfeeding practices among minority groups. As the fastest growing minority group in the United States, the importance of this group of women and children as an integral part of the population should not be understated. However, evaluation of breastfeeding rates collected from the Centers for Disease Control and Prevention’s National Immunization Survey from the years 2000-2004 in terms of racial differences consistently show that while African Americans maintain the lowest rates across all groups, Hispanic women sustain relatively high rates of breastfeeding that are roughly equivalent to and even slightly above those maintained by non-Hispanic White women (Gibson-Davis et al., 2006; CDC online, 2008; Singh et al., 2007; Mcdonald et al., 2008).

Despite this positive trend, research has shown that breastfeeding rates among Hispanic women rapidly drop with increased level of acculturation; therefore, a negative pattern exists

between number of years spent in the United States and breastfeeding rates such that an association between emigration status, acculturation, and likelihood of breastfeeding can be drawn (Singh et al., 2007; Gorman et al., 2007). These patterns contribute to what researchers have deemed the “Hispanic Paradox” (Gibson-Davis et al., 2006). However, we still need to consider whether or not these patterns define all members of the broadly defined group of “Hispanics” or whether distinct patterns emerge as we begin to separate Hispanics by cultural sub-groups based on country of origin. Continued research on different Hispanic subgroups within the United States with emphasis on the relationship between emigration and incorporation of perceived American attitudes toward breastfeeding would contribute to promotional campaigns designed for minorities. With a public health goals in place geared towards raising the rate of breastfeeding nationally in the United States, the use of culturally sensitive promotional materials will likely positively influence opinions towards breastfeeding within this increasingly diverse population.

Here we will examine some of the prominent literature that exists in discussion of breastfeeding attitudes and behaviors among Hispanic women in the United States and some primary data obtained from the administration of surveys at pediatric offices in South Florida. As a method of evaluating some of the current theories surrounding the Hispanic Paradox we can examine the demographic patterns, past experiences, and perceptions toward breastfeeding among the overall group of Hispanic women that comprise the sample population in addition to the various cultural sub-groups present within the sample. This way we can address breastfeeding behavior as a bio-cultural construct that is sensitive to social norms.

## **Background**

### *Defining Breastfeeding Biologically*

As an organ the breast undergoes dramatic changes in form and function throughout a woman's life. Breast development, much like the development of the female gametes, begins *in utero* during gestation with the specialization of epithelial cells that become branched, canalized alveoli and ducts that converge at the mammary papilla, also known as the nipple. Secondary female breast development begins again at puberty as the breasts become hormonally linked to the hypothalamus, pituitary, and ovarian systems; during this time as females develop secondary sex characteristics the physiologic transformation of the breasts are largely controlled by hormonal changes experienced during puberty and continued each time a woman ovulates. This process of breast development as a specialized organ for lactation is completed at pregnancy.

In the anatomy of the breast, the alveolus acts as the milk secreting structure that contracts during the milk let down response that occurs after pregnancy and delivery. This let down reflex thus triggers contraction of the alveoli thereby pushing milk into small ductules that converge into larger ducts that open to the nipple (Riordan, 2005). Milk production during pregnancy does not occur all at once; we can divide lactation into four stages—mammogenesis, Lactogenesis I, Lactogenesis II, Galactopoiesis, and Involution; summarized below (Riordan, 2005).:

- Mammogenesis – represented by breast growth and development that begins during gestation and continues throughout childhood with generalized growth, comes under hormonal influences during puberty, and is completed during pregnancy



- Lactogenesis I – defines the actual beginning of lactation or production and secretion of milk by epithelial cells that transition to secretory cells, this process is under the influence of the hormone prolactin and typically takes place during mid to late pregnancy
- Lactogenesis II – at this point larger volumes of milk and colostrum have accumulated in the breasts and are prepared for postpartum secretion. This stage is stimulated by the drop in progesterone levels following the delivery of the placenta.
- Galactopoiesis – characterized by the supply and demand maintenance of the milk supply, the continued production of milk is dependent on infant demand for milk or on the continued removal of milk from the breast
- Involution – this period begins several weeks after the last breastfeeding and is characterized by decrease in milk secretion with the decreased physical demand for milk production. This process leads to the eventual cessation of milk production until it is again stimulated or triggered by pregnancy.

Certain hormones play a fundamental role in lactation, most notably the hormones progesterone, prolactin, and oxytocin. Progesterone, which is the hormone necessary to sustain pregnancy, functions as an inhibitor of lactation by blocking the action of prolactin through a negative feedback mechanism acting on the anterior pituitary located in the base of the brain. The placenta and developing fetus work to maintain high levels of progesterone throughout pregnancy. However, once progesterone levels drop after delivery of the baby and subsequent delivery of the the placenta, prolactin secretion is activated and takes over as the milk stimulating hormone. Prolactin levels remain elevated for as long as the woman breastfeeds and especially rises with suckling, which forms the basis for the supply-and- demand pattern of breastfeeding.

The more a mother breastfeeds, the more milk she produces through the action of elevated serum prolactin levels (Riordan, 2005).

The milk let down reflex is triggered by prolactin and oxytocin through the suckling stimulation provided by the baby. Suckling creates a neuro-sensory response that triggers the release of oxytocin, which causes contractions in the alveola and subsequent ejection of milk. Oxytocin also triggers contractions of the uterus thereby allowing the uterus to return to its normal position after labor and delivery (Bentley et al, 2004). Therefore, we see that milk production and secretion transitions from a mechanism primarily reliant on hormonal control, also referred to as endocrine control, to a mechanism that utilizes physical, sensory stimulation, also known as autocrine control. Therefore, breast milk production is not limited to pregnant and postpartum women. Women have even been known to produce milk without a pregnancy, for example stimulation can lead to milk production for mothers who adopt babies. This milk production through physical stimulation has acted as the basis for milk production in wet nurses historically (Riordan, 2005).

Breast milk itself has several distinct features and phases of development. The breast milk produced at the start of lactation is called the colostrum. This fluid looks different from mature breast milk and has been described as a thicker (and sometimes thinner), translucent, yellowish fluid, although this appearance may vary from woman to woman. Healthcare professionals regard colostrum as highly favorable to the baby due to its richness in immunoglobulins, which the infant will use to form valuable antibodies that will protect the baby against illness. Breastmilk gradually changes from colostrum to transitional milk, which may be whiter with a yellow tinge still. Finally, following transitional milk the mother begins to produce mature milk that usually has the usual blue- white color associated with mature breast milk.

Breast milk whether it is colostrum, transitional, or mature provides an ideal nutritional composition of proteins, fats, carbohydrates, vitamins, and minerals invaluable to a baby's health and development (Colson, 2002).

Human breast milk can be expressed, pumped, and stored in bottles for later use. Therefore, a combination of breastfeeding and bottle feeding can be used while still producing the benefits of exclusive breast milk feeding during an infant's first 6 months of life. This expression of milk allows someone other than the mother to take part in feeding the baby; however, infants may have a preference and be more cooperative with breastfeeding or bottle feeding; on the other hand, the infant may be perfectly apt to accept both feeding methods—it all depends on the baby and most experiences with breastfeeding are unique. Recommendations for milk expression and storage stipulate that milk should be stored in the refrigerator if intended to be used for a feeding within 48-72 hours, but if the milk is expected to be kept for a longer period of time it can be stored in a freezer and thawed when necessary (Colson, 2002). Human breast milk differs in appearance from commonly seen cow's milk and the expressed milk may differ in physical characteristics based on the mother's diet, which can influence the fat content and even the color of the milk (Colson, 2002).

While not necessarily common, some mothers may encounter painful difficulties during lactation including, sore nipples, engorgement, plugged ducts, and mastitis (Riordan, 2005). Nipple soreness presents one of the milder, more common problems encountered during lactation. Often this soreness can be remedied with instruction from a healthcare professional or lactation consultant concerning the baby's positioning and latch on during feedings (Bentley et al., 2004). Engorgement represents the next degree of complication to breastfeeding, and is characterized by dramatic increase in milk volume in the breast leading to discomfort as the breasts feel

overly-filled with milk. Lactation experts advise that early initiation and more frequent feedings or pumping sessions offer the most effective preventative and treatment measure for engorgement (Colson, 2002). Plugged Ducts can lead to more serious conditions because if the blocked duct is not emptied it can lead to infection and mastitis. Plugged ducts can be relieved through continued feeding or pumping on the affected side in addition to massages and warm compresses to the breasts (Riordan, 2005; Colson, 2002). Mastitis is characterized by swelling and inflammation of the breast that could also be accompanied by infection leading to abscess. This is the most serious complication that we would see during breastfeeding, but it could often be treated before reaching this point. Treatment for these more serious conditions could involve antibiotics, analgesics, or drainage of the abscess (Riordan, 2005).

#### *Historical Perspectives & Evolutionary Theories*

As mammals humans are fundamentally equipped with the ability to breastfeed infants; furthermore, ancient Egyptian medical scripts describe techniques for breastfeeding dating back to the 1500 B.C. text *Papyrus Ebers*, and the writings of the Roman physician Soranus dating to 100 A.D. were widely circulated for several centuries (Riordan, 2005). However, to get an idea of how early modern humans nourished their young, researchers have looked to ethnographic studies observing modern-day hunter-gatherers such as the !Kung society of the Kalahari Desert in Africa. Observation of these modern day populations give anthropologists a glimpse into the nutritional practices likely employed by pre-agricultural populations during the history of human evolution. In these populations ethnographers have noted that breastfeeding occurs frequently throughout the day in short spurts and that mothers continue to breastfeed their children for up to six years (Konner & Worthman, 1980)—much longer than the usual duration observed in most westernized societies.

Evolutionary models of healthcare advocate an adaptive explanation for infants' behaviors and breastfeeding. In the 2005 Policy Statement released by the American Academy of Pediatrics, we see a compelling argument for the superiority of breast milk as the only natural species-specific milk source especially designed to meet a baby's nutritional requirements. Breastfeeding and the practice of a mother sleeping with her infant have been linked to prevention of Sudden Infant Death syndrome (SIDS) and used as an explanation for Colic (McKenna et al. 2007). One such theory attempts to explain that colic, or a baby's periodic fits of crying and "fussiness," stems from adaptive behaviors designed to increase infant survival and fitness. Several theories exist behind this explanation of colic including the use of crying to signal infant distress due to separation from parents, to serve as a display of physical ability and therefore prevent the likelihood of infanticide, or to act as a tool to attract more parental care and thus enhance survival. A likely explanation stems from the observation that, historically, throughout human history and in many modern day non-agriculturalists, rural populations' babies were constantly carried by their mothers creating a state of continual physical contact between child and mother (Lummaa et al., 1998).

This need for infant- mother physical closeness has also been used a proposed preventative measure for SIDS (McKenna et al. 2007). Researchers argue that mother- infant separation throughout the night represents an entirely culturally based practice that is in reality at odds with both the mother's and the infant's needs. With this theory in mind, the proposed solution, co- sleeping, or the practice of having the baby sleep with the mother, would allow the infant to have physical contact with parents and would allow the mother to easily engage in nighttime feedings. Furthermore, data has shown that breastfeeding may reduce the likelihood of SIDS and that in countries where co- sleeping and breastfeeding is the social standard of practice,

the rates of SIDS deaths are low (McKenna et al., 2007). The evolutionary theories in support of breastfeeding base theories on the social interactions between infant and mother and on survival techniques that may have promoted infant survival in our evolutionary past.

### *Infant Nutrition and Healthcare*

The American Academy of Pediatrics (AAP) has created a breastfeeding curriculum for use in residency programs during the training of physicians. This curriculum offers teaching tools, evaluations, and learning objectives all working together to allow professionals to better communicate standards of care to new mothers. Greater support in primary care would allow practitioners to encourage the breastfeeding recommendations set forth by the American Academy of Pediatrics for optimal infant and maternal nutritional health. The AAP made several recommendations in a policy statement released in 2005.

Recommendations stipulate that exclusive breastfeeding is adequate to sustain an infant throughout the first 6 months of life and breastfeeding could be continued throughout the first year and longer if that is what the mother desires. Further, the academy statement explains that supplements should not be given to infants unless recommended by a physician due to a known medical condition. To facilitate feeding the academy also recommends direct skin-to-skin contact between the mother and child immediately after delivery to facilitate the first feeding; also, it is advised that mothers avoid giving infants pacifiers until after they are able to establish breastfeeding to avoid difficulty in initiating infant latch on. Mothers are advised that 8-12 feedings denotes the standard range for feedings in a given day during initial weeks of breastfeeding. The number of daily feedings may gradually decrease in number throughout the time that the mother is nursing (AAP Policy Statement, 2005).

The AAP also describes guidelines for support given to mothers in promotion of breastfeeding, stating that while in the hospital mothers should have daily records and evaluation of breastfeeding by caregivers. This care extends to a recommended visit to check the health of the infant 3 to 5 days after birth and again at 2 to 3 weeks of age to monitor the child's weight gain. In terms of nutritional recommendations, physicians suggest vitamin supplements of vitamin K and vitamin D for breastfed infants. Administration of vitamin K acts as a preventative measure against hemorrhage and vitamin D works to prevent rickets in growing children (AAP Policy Statement, 2005). The World Health Organization has worked to develop growth trajectory charts that adequately demonstrate the distinct growth pattern that breastfed babies follow when compared to formula fed babies (World Health Organization, 2000). Initially a breastfed baby may grow more quickly than a formula fed counterpart; however, the growth rate of breastfed babies gradually slows and drops below that of formula fed babies during the first year of life. In the past this growth pattern among breastfed babies was viewed as the child deviating from the usual growth trajectory. However, we now see that formula feeding and increased, sustained elevated birth weights have been associated with subsequent increased risk of obesity in adulthood (Colson, 2002).

Breastfeeding provides numerous health benefits to infants. Studies have shown that breastfed babies suffer lower incidence of certain infectious conditions including ear infections, respiratory infections, urine infections, and diarrhea. Additional health benefits include enhanced cognitive development, reduced likelihood of SIDS, as mentioned previously, and decreased likelihood of developing diabetes mellitus (both type 1 and type 2), obesity, asthma, leukemia, lymphoma, and Hodgkin's disease (AAP Policy Statement, 2005).

Besides the obvious benefits that mothers gain from having healthier babies, we see that breastfeeding also provides tangible health benefits to mothers—many of which are associated with improved recovery following labor and delivery. Through the release of the hormone oxytocin, breastfeeding simulates the involution of the uterus as it contracts and returns to its usual position following delivery. This contraction of the uterus reduces postpartum hemorrhaging thereby lowering the chances that a mother would develop anemia due to iron loss (Colson, 2002). Continuous, exclusive breastfeeding also suppresses maternal ovulatory cycles resulting in lactational amenorrhea. Lactational amenorrhea has been used to effectively space birth intervals by reducing the likelihood that a nursing mother will become pregnant (Colson, 2002, Vallengia & Ellison, 2009). Long- term benefits to mothers may result in a lower lifetime risk of developing breast cancer, ovarian cancer, and post-menopausal osteoporosis (AAP Policy Statement, 2005).

### *Current Statistics*

Several large surveys have attempted to gain a broad understanding of reproduction and nutrition in the United States. Some of these surveys have been conducted on a national level and have thus yielded data on breastfeeding practices from large samples of the US population. Some of these projects include (CDC online, accessed March 2010).:

- The National Health and Nutrition Examination Survey (NHANES) – this survey combines interviews and physical examinations in an analysis the health and nutrition of adults and children in the United States. The survey was conducted by the Center for Disease Control and Prevention (CDC). The program began in the 1960's and has been a continuous operation since 1999.



- The Infant Feeding Practices Study II (IFPS II) – this study was conducted by the Food and Drug Administration (FDA) in conjunction with the CDC as a longitudinal study looking at infant feeding practices and maternal diet starting from the third trimester of pregnancy and continuing through one year postpartum. The original study (IFPS I) was conducted in 1993-1994 and this second one took place from 2005-2006.
- The US National Immunization Survey (NIS) – the original function of this survey was to examine vaccination rates for young children throughout the United States; however, since 2001 the survey has been modified to include questions about breastfeeding initiation and duration.
- The National Survey of Family Growth (NSFG) – also sponsored by the CDC, this survey obtains data from interviews with women and also with men starting from 2002. It asks whether the infant was breastfed, what other foods were given besides breast milk, and the duration of breastfeeding.
- The Pediatric Nutrition Surveillance System (PedNSS) – this study serves to monitor the health of infants from low- income backgrounds by looking at those families who receive assistance from federally funded nutritional programs such as The Special Supplemental Nutrition Program for Women Infants and Children (WIC), Head Start, the Title V Maternal and Child Health Program, and the Early and Periodic Screening, Diagnosis and Treatment Program (EPSTD).

In the year 2000 the surgeon general along with the Department of Health and Human Services released the *HHS Blueprint for Action on Breastfeeding*. In this document the HSS outlines some of the goals to promote breastfeeding according to the government sponsored health campaign

goal set for Healthy People 2010. The major goal of the campaign was to improve the quality of life and health in the United States and to reduce health disparities that we see among various ethnic groups, between genders, and among certain populations.

A baseline data set from 1998 Healthy People showed that 64% of all women breastfed their babies during the early postpartum period. This percentage dropped to 29% at 6 months, and 16% at 1 year. For Hispanic women the 1998 baseline data showed that 66% breastfed during the early postpartum period, 28% at 6 months, and 19% at one year. The Healthy People 2010 target set goals across all women to be at 75% breastfeeding during the early postpartum period, 50% at 6 months, and 25% at one year (Dept HHS Blueprint, 2000).

A more current Healthy People database based on information collected by the National Immunization Survey illustrates that these percentages have increased somewhat over time (CDC Healthy People Database, 2009). The percentage of all women who ever breastfed rose from 71% to 74% from 2000 to 2005. Breastfeeding at 6 months for all women also rose from 34% to 43% from 2000 to 2005 while breastfeeding at one year rose from 16% to 21%. Patterns among Hispanic women from this data show that while overall initiation of breastfeeding ever has shown little improvement, there seems to be an increase in mothers nursing for longer durations. From 2000 to 2005 we see that Hispanic women's breastfeeding rate went from 79% to 81%. At 6 months this value rose from 2000 to 2005 from 36% to 45%, and at 1 year the percentages rose from 17% to 24%. These statistics show definite improvement among all women and among Hispanic women at 6 months and 1 year postpartum; however, not all of the data reach the Healthy People 2010 goals. Analysis of more current percentages as they are released will ultimately decide whether or not the Healthy People Campaign to promote breastfeeding achieved most of its goals.

## *Promotional Campaigns*

One of the largest collaborative campaigns to promote breastfeeding involves a joint effort among the World Health Organization (WHO), the United Nation's Children's Fund (UNICEF), the Breastfeeding Hospital Initiative Feasibility Study Expert Work Group, and Baby Friendly USA (Dept HHS Blueprint, 2000). These groups have outlined 10 steps to promote breastfeeding initiation in the hospital after birth through the 1991 initiation of a program known as the Baby Friendly Hospital Initiative. These 10 steps follow guidelines set by the *Innocenti Declaration* developed by the UNICEF and WHO in 1990 as goals that hospitals around the world could adopt (Riordan, 2005). The 10 steps are as follows:

1. Have a written breastfeeding policy that is routinely communicated to healthcare 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 30 minutes after birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breast milk, 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.

Researchers have sought to test the effectiveness of the steps delineated to promote in-hospital breastfeeding. One such study conducted in 2008 by Grummer-Strawn et al. looked at associations between care practices that mothers may have experienced at baby friendly hospitals as a function of their breastfeeding practices. The data used in this study came from the IFPS II longitudinal survey conducted by the US Food and Drug Administration, which was given at multiple prenatal and postpartum stages. Although there are 10 steps to the Baby Friendly Hospital Initiative, this study focused on steps that they could most easily account for from the data including: initiation of breastfeeding within an hour after birth, rooming in, only breast milk given, feeding on demand, no pacifiers given to the baby, and providing information and support to mothers—while also analyzing the relationship of other care- practices to breastfeeding initiation and duration such as type of delivery, bringing the baby to the room in evenings for feeding, and the administration of pain medication (Grummer-Strawn et al., 2008).

The results of the study indicated that few women reported experiencing all 6 of the Baby Friendly steps addressed in the data and few women reported experiencing none of the Baby Friendly practices, so most commonly women experience some intermediate number of those practices but rarely all of them and rarely none of them. The outcome variable measured here was whether mothers terminated breastfeeding less than 6 weeks after initiation, and this variable most strongly correlated to 4 Baby Friendly practices as maintaining the most significant

preventative effect to early termination of nursing: initiating first feeding within one hour after birth, no pacifiers, feeding only breast milk, and feeding on demand (Grummer-Strawn et al., 2008).

Other care factors that influenced feeding practices included giving mothers pain medication and bringing the baby to the room for evening feedings when mothers were not rooming in. One reason suggested for this result among other care practices argued that evidence exists demonstrating that certain pain medications can cross the placenta thereby making both mother and baby drowsier and less alert after delivery. This may influence the infant's ability to quickly latch on for breastfeeding quickly after birth thus leading to the perception of difficulty in initiating breastfeeding and subsequent maternal discouragement (Grummer-Strawn et al., 2008).

Overall these results emphasize the contribution that baby-friendly practices make to breastfeeding outcomes while also identifying additional standard care practices that may influence likelihood of nursing. Surprisingly the results of the analysis did not find a strong association between the practice of rooming in and breastfeeding duration; however, they did note that most mothers who were not rooming in had the babies brought to their rooms for night time feedings, which allowed them to feed their babies on demand and essentially achieve the same intended result as rooming in. This finding implies a "dose-related" effect of the Baby Friendly initiatives indicating that the combined effect of these practices may be more significant than the individual steps by themselves (Grummer-Strawn et al., 2008).

A second major promotional campaign founded in the 1950's includes La Leche League International (LLL), which has been attributed to the reversal in negative breastfeeding trends

during the 1970's (Riordan, 2005). La Leche League acts as an official non-governmental campaign authorized to advise the United Nations and other national agencies on breastfeeding topics. The league offers support materials in 32 languages and trains counselors offering support groups and clinics especially geared toward low-income populations (Riordan, 2005). In their 2008-2009 Annual Report La Leche League solidifies their position as an international source of breastfeeding support by reporting their presence in 68 countries around the world. Other breastfeeding promoting organizations include: Healthy Mothers, Healthy Babies; International Baby Food Action Network (IFBAN), Wellstart, and the World Alliance for Breastfeeding Action (Baumslag and Michels, 1995).

### *Social and Cultural Patterns*

Hispanic women in the United States, in contrast to African Americans of comparable socioeconomic status and education level, exhibit rates of breastfeeding that are roughly equivalent to those of non-Hispanic White women with overall higher education levels and socioeconomic status (Gibson-Davis et al., 2006; Singh et al. 2007). Unlike the rest of the population, Hispanic rates of breastfeeding correlate poorly with socioeconomic status. If factors like income and education levels are not determinates of breastfeeding behaviors, some other cultural mechanisms must operate among these groups of women. Research has found that immigrants of Hispanic descent are more likely to breastfeed than their nonimmigrant counterparts. Unfortunately, length of residence in the United States applied to both the mother and father is negatively correlated to breastfeeding initiation and continuation—each year spent in the United States reduces the chances of breastfeeding by 4 percent (Gibson-Davis et al., 2006).

Acculturation, therefore, plays a fundamental role in influencing the breastfeeding behaviors of women of Hispanic descent. Women classified as “highly acculturated” are least likely to breastfeed postpartum whereas women classified as “low acculturation” most likely to breastfeed at highest rates (Gorman et al., 2007; Gibson et al., 2005). Measures of acculturation vary depending on the study, but most studies gauged acculturation through identification of language spoken at home, self-identified ethnicity, and immigration status. A fundamental aspect of the American public’s perception of breastfeeding somehow discourages women from breastfeeding. Conversely, we may say that something about American culture encourages women to supplement infant feeding with formula or other foods.

When addressing social and cultural patterns of breastfeeding, we can look at the reported breastfeeding experiences of US mothers overall. One such analysis sought to examine patterns of specific nursing methods such as feeding at the breast, expressing milk, breastfeeding exclusively, and supplementing with formula among US women (Shealy et al., 2008). The results of the analysis found that while exclusive breastfeeding was the most common practice among women during the first three months postpartum, the practice declined rapidly after the third month. A very small percentage of mothers exclusively pumped milk, and among those women the duration of the practice was short (Shealy et al., 2008). Among those women who breastfed, researchers saw that exclusive breastfeeding peaked at 3 months, which was followed by a decline that occurred gradually characterized by longer time intervals between feeding sessions throughout the first year postpartum. The results also found that the length of feeding bouts in addition to the time intervals between feedings as infants aged differed from the commonly quoted advice given by healthcare professionals stating that infants should have 8-12 feedings per day; therefore, this analysis serves to point out that care providers should be more

aware of the variability of lactation experiences (Shealy et al., 2008). If women feel that their experience is not the norm or that they are not producing enough milk, which is a common reason for concern, they may be more likely to stop nursing their infants.

There are several reasons why US mothers may stop breastfeeding during their infant's first year of life. Research has shown that reasons for stopping vary by the child's age at the time that the decision is made (Li et al., 2008). Factors such as being young, uneducated, unmarried, primiparous, and lower income all contribute to early cessation of nursing infants (Li et al., 2008). For mothers who stopped breastfeeding within the first and second months postpartum, the primary reason surrounded difficulties with breastfeeding initiation such as trouble with infant latch on, or suckling, or the impression that the infants weren't satisfied and/or not getting enough milk. From 3 to 8 months the perception that the infants were not satisfied with the milk or not getting enough continued to remain top reasons why mothers stopped in addition to infant weaning to others foods besides milk. After 9 months reasons centered on babies no longer being interested in breast milk, infants beginning to "self-wean," and infants beginning to bite (Li et al., 2008). Overall, the idea that infants were not satisfied with nursing alone remained a top reason for termination of nursing at all stages during the first year. Generally, a lack of confidence in ability to satisfy their infant with milk alone contributes to early termination of the practice at any stage postpartum. Hispanic mothers are more likely to cite their infant's dissatisfaction with just breast milk as the reason for stopping. The age of weaning was also a significant factor in a mother's decision to stop breastfeeding (Li et al., 2008). Therefore, we see that while research has shown that during the early months after birth nutritional and lactation concerns were the most cited reasons for stopping breastfeeding, after the third month reasons associated with weaning became increasingly more important.



Throughout the first year of an infant's life, mothers transition from feeding babies milk to other foods. We can look at some of the distinct ways that US mothers wean their children. Using data from the Infant Feeding Practices Study II (IFPS II) one study showed that 82% of infants were breastfed, but as expected this percentage gradually dropped throughout the first year. Also 52% of infants were given formula while in the hospital, and at 4 months 40% of infants had also received cereal as part of their diet (Grummer- Strawn et al., 2008). Few of the babies in the study were fed water during the first month, yet the average age that an infant was introduced to baby cereal was approximately 4 months and other types of cereals were introduced at about 8 months on average (Grummer- Strawn et al., 2008). This early introduction shows that most babies are not being nursed exclusively during the first 6 months as the AAP recommends, but instead are being weaned on average at 4 months. Data showed that other solid foods such as fruits and vegetables were fed to babies at an average age of 5-6 months and meats at an average age of 8 months. Most infants were introduced to cow's milk and other dairy products later in age, at about 12 months (Grummer- Strawn et al., 2008).

Foods that doctors recommend should not be fed to infants including fatty or sugary foods were found to have been fed to half of the babies in the study by 12 months (Grummer- Strawn et al., 2008), so we see that chronic adult illnesses in babies who were not breastfed such as those associated with obesity or diabetes may result from not only early termination of nursing but also introduction of foods with high sugar and fat contents. Hospital initiation of breastfeeding was positively correlated with mothers of Hispanic origins and mothers with some college education, but negatively associated with mothers on WIC and older maternal age (>30 years). Medical recommendations that mothers not introduce the babies to solid foods until after 4 months were more likely to be followed by mothers who breastfed their babies in the hospital

than by those mothers who exclusively fed their infants formula in the hospital (Grummer-Strawn et al., 2008).

When we analyze rates of breastfeeding among different cultural groups, we can see that across populations immigration status has had a strong effect on nursing patterns. One particular study looked at the difference in breastfeeding initiation and duration among native versus immigrant women across different races including White, Black, and Hispanic. Overall their findings were that immigrant women across all races studied were more likely to breastfeed and do so for a longer amount of time than all of the native women across those particular racial groups (Singh et al., 2003). By looking at immigration status as a function of breastfeeding and influences of acculturation, we see the importance of evaluating patterns among immigrant populations, which have risen in the United States since the early 1990s (Singh et al., 2003). These cultural shifts in the US population should have significant implications on practices and behaviors related to these different cultures.

Hispanic women who experience high rates of socioeconomic disadvantage including low education level and income tend to breastfeed at higher rates than socioeconomic status would indicate in other racial groups (Gibson-Davis et al., 2006; Sing et al., 2003; Gorman et al., 2007; Marewood, 2006). Hispanic and Blacks have similar poverty rates and Hispanics have almost twice the poverty rate of non-Hispanic Whites yet Hispanics breastfeed at rates comparable to Whites and much higher rates than Blacks, so some other determinant must be at work here that could be cultural in nature. Here researchers introduce the term “Hispanic Paradox,” which may indicate that a low level of acculturation among Hispanics buffers them against engaging in common behaviors in the United States that are detrimental to health (Gibson-Davis et al., 2006; Gorman et al., 2007). The fundamental premise of the Hispanic

Paradox is that socioeconomic factors alone have been proven insufficient to explain difference in rates of breastfeeding. Generally, we see that across races, Black and Native American mothers had the lowest nursing rates while Hispanic and Asian mothers have had the highest nursing rates (Singh et al., 2003; Marewood, 2006), and immigrant children with foreign-born parents have had the highest likelihood of breastfeeding across all immigration statuses in contrast to native mothers who were at an 85% disadvantage in odds of breastfeeding (Singh et al., 2003; Gibson-Davis et al., 2006). Despite this overall trend in immigration status in breastfeeding, we see that Hispanics still represent a significant deviation from the typical patterns—each additional year that a Hispanic mother spends living in the United States has been associated with a 4% decrease in odds of breastfeeding and for each year that a father was living in the US the likelihood of breastfeeding dropped by 5%. (Gibson-Davis et al.,2006). One study describes the trend seen among this cultural group in terms of acculturation:

“The impact of acculturation was most consistent among Hispanic women. Native Hispanic children with native parents and US-born Hispanic children with 1 foreign-born parent were the 2 most acculturated groups, with significantly lower breastfeeding initiation and shorter duration rates than the least acculturated and the newest immigrant group consisting of immigrant Hispanic children with foreign-born parents...Although higher household income was generally associated with higher breastfeeding rates for the 2 most acculturated nativity groups, higher income was related to lower breastfeeding rates among the least acculturated or the most recent immigrant group ” (Singh et al., 2003).

Another research study also confirms previous results indicating that less acculturated Hispanic women were more likely to breastfeed (59.2%) than more acculturated women (33.1%)

and White women (45.1%) (Gibson et al., 2005). In this study, researchers measured acculturation level based on language and determined that after controlling for education, age, and income there was no significant difference in likelihood to breastfeed between Whites and Hispanics. Also, highly acculturated women were less likely to breastfeed than low acculturated women even after controlling for age, income, and education (Gibson et al., 2005). Women who were less acculturated were more likely to cite a reason to not breastfeed related to the child's physical/mental condition whereas more acculturated women were more likely to cite that the child preferred the bottle as reason to not breastfeed (Gibson et al., 2005). The theory discussed in this study's findings is that there may be a general cultural discomfort with breastfeeding in the US or lack of confidence where mothers may perceive a lack of breast milk creating a gap between what they think they know and what is actually going on, which could be remedied through use of educational programs (Gibson et al., 2005). Given that formula is readily accessible through programs such as WIC and technically easier to initiate, increased education would make defaulting to formula feeding less common. The theory here is that while in other countries breastfeeding may be the norm, in the US it can be perceived as one of several options; therefore, women may then often choose not to breastfeed given the option to pursue other modes of infant nutrition.

Several studies have shown that Hispanics and whites show virtually no significant difference in breastfeeding rates (Gibson et al., 2006; Singh et al., 2003; Gorman et al. 2007). Therefore, we can now look for characteristic differences between these two cultural groups to identify some of the underlying features of this observation. One such study serves as an analysis of mothers' characteristics as they differ between Hispanics and non-Hispanic Whites with the goal of examining reproductive health outcomes of these two groups of women. The overall

findings were that Hispanic mothers are younger, of lower socioeconomic status, and less likely to receive early prenatal care--they smoke and drink less, breastfeed their infants more often, and report less preterm labor and hypertension during pregnancy, but may be at greater risk of gestational diabetes (McDonald et al., 2008). Hispanics in states with the largest increases in number of births by Hispanic women, probably due to an influx of immigrating Hispanic population, were more likely than non-Hispanic Whites to report healthy behavior such as continued breastfeeding and a normal BMI. However, they were more likely to report late prenatal care, hospitalization during pregnancy, and low socioeconomic status (McDonald et al., 2008). Overall, the findings were that Hispanic mothers most resembled non-Hispanic White women who live in states with fewer increases in births by Hispanic women – meaning that Hispanic women are comparable to White women in patterns of breastfeeding.

This study divided up analysis by states and compared states that have historically had low Hispanic populations but have recently experienced a dramatic increase in their population and those states that have had a significant Hispanic population historically and have seen relatively little change in their population (McDonald et al., 2008). The reproductive health profile of Hispanic women has shown clear trends with the foreign-born women showing positive health outcomes such as less alcohol, tobacco, and illicit drug use when compared to non-Hispanic white women despite lower socioeconomic status and less access to prenatal care. Also, in terms of reproductive health outcomes Hispanic women were less likely to report low infant birth weights, preterm labor, and high blood pressure during pregnancy than non-Hispanic White women despite their often later access to prenatal care (McDonald et al., 2008).

The profiles of infants were comparable among Hispanic women and non-Hispanic white women, but babies born from Hispanic women were more likely to be breastfed and for a longer

duration (McDonald et al., 2008). Hispanic mothers in general tended to be younger, less educated, and more likely to use public health care services than non-Hispanic White women; therefore, paradoxically, we would expect these seemingly more disadvantaged mothers to reflect poorer reproductive health outcomes, but in reality they did not. Outcomes by states indicated that Hispanic women in states that experience recent influx/ population increases by newly immigrated people tend to be most similar to non-Hispanic White women in states with stable population trends (McDonald et al., 2008). Therefore, we see additional evidence for the Hispanic paradox indicating that women of Hispanic origins, especially newly immigrated women may be buffered to certain health outcomes in the United States that usually accompany reduced socioeconomic status.

Some studies have found that, among the various Hispanic sub-groups, differences between non-Mexican Hispanics and Mexican Hispanics were not significant, and that the only significant difference was between non-immigrant and immigrant groups within each category defining immigration status rather than ethnicity as the more important factor in determining whether or not a mother will breastfeed, so the Hispanic paradox may be true among other ethnic groups besides Hispanics (Gibson et al., 2006).

Nonetheless, researchers continue to call for more specific definitions of Hispanic sub-cultures (Marewood, 2006). We have seen that it is now safe to dispel common misconceptions about low rates of breastfeeding among minorities since some of the highest rates of breastfeeding initiation are among Hispanics and Asians overall. However, we still do need to reform in our “one-size-fits all” terminology of race to define broad groups such as Black or Hispanic (Marewood, 2006).

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Some studies do address the need to have analysis of breastfeeding practices among cultural sub-groups. One of the earlier studies to speak to this need for analysis based on Hispanic sub-groups looks at patterns and theories about nursing practices including: hospital practices and how they affect mother-infant contact immediately postpartum, which influences breastfeeding initiation rates; the concept that married women are more likely to breastfeed depending on their cultural sub-group since husband support differs across Hispanic cultures as it may represent a sexual taboo; and the idea that need to work post-partum often leads to lack of breastfeeding initiation at all or early termination to return to work (Scrimshaw et al., 1987). This study compared two hospitals with different post-natal practices, asked women about the breastfeeding intentions and practices both pre-natal and post-partum, and measured acculturation based on questions about involvement in Mexican/US culture, language preference, self identification, number of years living in US, and urban/rural upbringing (Scrimshaw et al., 1987). The cultural sub-group identified here is women of Mexican origin.

Results found that those women at a hospital that allowed more mother-infant time together were more likely to initiate breastfeeding sooner. Results further confirmed the previously described cultural trend in which more acculturated women were less likely to initiate breastfeeding. Among this sample of Mexican women work plans were stated as a reason for not breastfeeding by 44% of the women who did not nurse. Other obstacles mentioned were no milk (10%), breastfeeding was difficult or painful (15%), husband was against breastfeeding (15%), the perception that the baby doesn't like breastfeeding (3%), and other miscellaneous reasons comprised the remaining percentage of reasons given. Reasons for breastfeeding centered on its perception as being healthier and better for the baby (83%) (Scrimshaw,1987). The conclusion that this study came to was that many of the domestic, factory, low skilled labor that most of



these women were employed as was incompatible with nursing, and that aside from work conflicts hospital practices also had a strong influence on whether or not mothers initiated breastfeeding (Scrimshaw, 1987).

Besides Mexican versus non-Mexican populations the Puerto Rican sub- population has also been observed. One study used peer counselors to support mothers and encourage exclusive breastfeeding, and the researchers divided women into 3 groups: Puerto Rican Hispanic, non-Puerto Rican Hispanic, and non-Hispanic. Results found that in the intervention group that received peer-mediated support, Puerto Rican Hispanics maintained the lowest breastfeeding rates even when compared to Blacks who have historically low rates nationally (Anderson et al., 2007). Furthermore, there were steep declines in breastfeeding rates at 2 months postpartum in this sample that had a study period of 3 months total (Anderson et al., 2007).

These results acknowledge a surprisingly low breastfeeding rate among Puerto Rican Hispanics given the high rate of breastfeeding among Hispanics overall. An earlier study accounted for this observed low rate of nursing among Puerto Ricans by developing a correlation between social capital and breastfeeding. Through the use of structured interviews researchers were able to gain information about lifestyle and nutritional norms within the family. Based on their analysis, these researchers defined social capital as a community level phenomenon that provides support to the individual members of the community especially during times of need (Anderson et al., 2004). While only approximately 50% of the Puerto Rican women reported breastfeeding, the element of social capital that this rate most positively correlated with was whether or not women exchanged goods and/or support with neighbors and relatives. Despite this difference in rates of breastfeeding when we compare Puerto Rican mothers to other Hispanic groups such as Mexican mothers we see that the reasons that Puerto Rican mothers

report early termination of breastfeeding are similar to other groups. Common reasons included: embarrassment, the perception that breastfeeding was difficult, and the idea that they were not producing sufficient milk for their baby (Anderson et al., 2004).

This phenomenon of low rates of nursing among Puerto Ricans may be due to the Puerto Rican population's strong preference for mixed feeding and exclusive formula feeding even in their native territory (Anderson et al., 2007). Researchers have further mentioned that Puerto-Rican grandmothers are generally not supportive of breastfeeding and many of the mothers involved in the study were not breastfed themselves as infants; therefore, social support, which can be influential when it comes to breastfeeding outcomes may not be as consistently present among Puerto Rican Hispanics as it is among other Hispanic groups (Anderson et al., 2007). Additionally, research has shown that the degree of acculturation does not stand as a good predictor of breastfeeding behaviors in Puerto Rican women as it has been in past studies with women of Mexican origin. This may stem from historically low rates of breastfeeding in Puerto Rico in addition to the idea that breastfeeding in public is indecent exposure within their native country. These results tell us that Hispanic sub-populations maintain distinct cultural perceptions of breastfeeding and deserve unique attention when designing promotional campaigns.

## **Attitudes and beliefs towards breastfeeding in a population of Hispanic women of mixed origin in South Florida:**

This analysis serves as research associated with a senior thesis in the department of Anthropology at the University of Pennsylvania. As a topic, analysis of breastfeeding beliefs and behaviors among Hispanic women works to blend cultural sciences with the evolutionary and biological aspects of nutrition and healthcare. These topics combine elements of cultural anthropology and biological anthropology and act as an appropriate culmination to an undergraduate course of study in these areas of anthropology in addition to providing an introduction to research methods and practices.

### **Methods**

For this analysis a convenience sample of 100 women were chosen from 2 pediatric medical offices in South Florida. The offices were chosen due to the large Hispanic population attending the practices with Spanish acting as the primary language spoken at these locations. With the assistance of doctors, medical assistants, receptionists, and office managers; women were verbally invited to complete a voluntary survey and questionnaire regarding breastfeeding. Surveys were given to each woman either before their visit or after. Most of the mothers completed the surveys while sitting in the waiting room or while sitting in the examination room before being attended to by the physician or medical assistant. Only mothers over the age of 18 were included in the survey. Each survey contained an introductory information sheet with consent information for participants followed by a page of demographic and breast feeding experience questions and two pages of vignettes used to evaluate breastfeeding attitudes. The consent process was conducted verbally for all participants, and Surveys were collected during a

6 month period from August 2009 until January 2010, inclusive. All personnel involved in administration of surveys were proficient in both English and Spanish, and all women were given the option of completing surveys in their preferred language either English or Spanish.

The surveys used were adapted from the PROGRAMA LACTAR, a breastfeeding support and research program, conducted by Drs. Claudia Valeggia and Gail Herrine in Northeast Philadelphia (Herrine et al., 2009). The questionnaires used to evaluate breastfeeding attitudes are based on those developed by Kay Libbus for a study conducted in 1998, which sought to collect data on breastfeeding attitudes among Spanish-speaking women. Therefore, the questionnaire has been previously reviewed and back-checked for language and content validity (Libbus, 2000). Each questionnaire was composed of 14 vignettes (two more were added to the original Libbus questionnaire) that gave various scenarios that women may experience while nursing. The scenarios addressed topics such as breastfeeding in public, breastfeeding around friends, and breastfeeding support from others. Each vignette was scored using a 6-point Likert-type scale from 1 representing “strongly agree” to 5 representing “strongly disagree” (Libbus, 2000). The total scores on these vignettes could range from 14 to 70 with a lower score indicating a more positive attitude towards breastfeeding. Due to the use of this scoring method the values for vignettes numbered 1, 2, 7, and 9 were reversed to indicate the correct positive view of breastfeeding behaviors—with score of 1 actually valued as a 5, a score of 2 actually valued as a 4, and a 3 remaining as a 3. Women were not given an incentive for participating, the survey and questionnaire presented virtually no risk to them, and the option to complete the survey and questionnaire was entirely voluntary. When the questionnaire was first administered by Libbus and colleagues in 1998 they found that support from a mother and/or boyfriend was the primary significant predictor of breastfeeding initiation among Hispanic women. They also

only found a negative overall score associated with question number 4, which involves a vignette describing embarrassment and modesty associated with breastfeeding in front of others (Libbus, 2000).

## **Results**

### *Demographics*

Within this sample of 100 mothers, 21% completed the survey in English and 79% completed the survey in Spanish by choice. The average reported maternal age was 32.6 years with a standard deviation of 8.5—the maximum age that a mother reported was 60 years old. Only 82 participants reported their highest completed education level, and from those 82, the highest percentage of women had completed college. Approximately 43% of women had completed college. The second highest percentage of respondents, 32%, had completed high school. Mother's parity ranged from 1 child to 7 children with women, on average, having approximately 2 children. From those 63 women who reported whether or not they were currently in school, 10 or 16% said that they were currently in school while 56 or 89% reported that they were not currently in school<sup>1</sup>. Only four women chose to omit the question about marital status, so based on the 96 responses 68 or about 71% were married and approximately 28 or 29% were not married. For the demographic question that asked whether or not the women were involved in a stable union 62 out of 73 respondents reported that they were indeed in a stable union, which represents about 85% of respondents. On the other hand, 11 out of 73 reported that they were not in a stable union, which represents approximately 15% of

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<sup>1</sup> Based on this pattern from those who did respond, we can deduce that most of those mothers who did not respond were also not in school.

respondents. The 94 mothers who answered the question regarding employment demonstrated results that differed very little—51% of mothers were employed at the time of survey completion and approximately 49% of mothers were not employed. Most of the mothers reported living with their spouse/partner and child and most families exclusively spoke Spanish at home.

All mothers, with the exception of just one, reported their language spoken at home. Specifically, we see that 44% of families speak a combination of English and Spanish at home, 46% speak exclusively in Spanish while at home, and only 5% speak solely English while at home. In one of the responses, the family spoke only Portuguese at home, and in 3 respondents the families spoke Portuguese in combination with English and/ or Spanish. These language results are expected given the large percentage of mothers who chose to complete the survey in Spanish. We could use languages spoken at home as a proxy for measurement of acculturation level with exclusive Spanish speaking representing the least acculturated groups and those who speak a combination of English and Spanish and English exclusively as the more acculturated group with those who speak English only at home as the most acculturated group. A summary of demographic characteristics can be seen following this text (Table 1).

#### *Breastfeeding Experience, Attitudes, and Beliefs*

In terms of a measure of acculturation, we see that studies have found that immigrant or those women born outside of the US have a higher likelihood of breastfeeding their infants. In this sample of women from South Florida, 19 out of 96 respondents were born in the United States, thereby representing approximately 20% of respondents. Therefore a majority of the women who noted their country of birth, specifically 80%, or 77, women were reportedly born outside of the United States. Based on previous studies, we would predict that a higher

proportion of these non-native women would have chosen to breastfeed their children when compared to those women who were born within the United States; therefore, within this sample a higher percentage of women should have answered “yes” to the questions asking whether or not they had breastfed in the past or if they have breastfed the current child in roughly similar proportions to the immigrant/native sample ratio. In fact, 88% of the women sampled reported that they had ever breastfed, and 12% reported that they had never breastfed. This exceeds the expected ratio of women who were born in the US to those who were not. These results indicate that most of these women have breastfed at some point. Considering that this sample consists entirely of self-identified Hispanic women with 80% of participants choosing to take the survey in Spanish, indicates that these women are likely not extremely acculturated and therefore are more prone to engage in breastfeeding behaviors. When we examine those 12 women who reported never breastfeeding results show that 3 of these participants chose not to list their birthplace, 3 were born in the US, and 6 were born in a Latin American country. Proportionally, this means that while 16% US born Hispanic women in this sample never breastfed, only 8% of foreign born Hispanic women never breastfed. As listed in a table following this text, we can note the countries represented in this sample with the number of participants and participants’ mothers born in each country (Table 2). We can also compare the number of respondents versus the number of respondents’ mothers born in each country represented (Table 3). The country most represented in this sample, Colombia, shows roughly equal numbers of respondents and mothers born there, while as expected far more respondents were born in the US than were their mothers.

Looking at this sample’s breastfeeding attitudes and behaviors specifically reveals that mothers’ likelihood of exclusively breastfeeding is far less common than their likelihood of

simply initiating breastfeeding at some point. From the 89 responses received to the survey question asking mothers if they exclusively breastfed, 49% of mothers stated that they did breastfeed exclusively for a period of time, and 51% of mothers stated that they did not. Therefore, within this sample we see roughly equivalent rates of exclusive and non-exclusive breastfeeding. Women also reported an average duration of 8 months of breastfeeding that may or may not have been exclusive. Formula presented the most common type of supplemental food that mothers fed to their babies with 61% of respondents stating that they also fed their children formula in addition to breast milk. From this sample, 88 women responded to the question that asked them to rate their breastfeeding experience: 38% of the women stated that their experience was “very good” and only 5% stated that their experience was “bad.” This data on breastfeeding experience can be seen further graphically (Table 4). Only 12 mothers chose to elaborate on the reason why they chose not to breastfeed. Reasons for not breastfeeding and the number of women citing each reason included:

- “Baby did not like” ( 2 women)
- “Infection” (1 woman)
- “Baby was in NICU” ( 2 women)
- “Didn’t produce enough milk” ( 5 women)
- “Had difficulty” ( 1 woman)
- “Did not want to” (1 woman)
- “I was on medication” (1 woman)

The belief that they were not able to produce enough milk or that the baby was not satisfied in addition to medical complications such as the baby being in the Neonatal Intensive Care Unit (NICU) appeared on more than one occasion in these responses suggesting that a mother’s perceived milk production and health complications for both the mother and infant play



significant roles in early termination or lack of initiation of breastfeeding. Nonetheless, 80% of the women in this sample stated that they had breastfed all of their children at some point as compared to 20% who stated that they had not nursed all of their children. Furthermore, 89% of the women sampled had seen other women breastfeeding in public, 92% of women had seen others breastfeeding at home, 98% of the participants knew someone who had breastfed, and 79% of these respondents were breastfed themselves as infants. Almost all of the women in this sample had the support of their mothers and partners in their infant feeding choices. Data shows that 96% of the women had the support of their mothers and 98% of the women had the support of their partners or spouse.

After participants completed the survey questions they were presented with a series of vignettes describing various scenarios associated with breastfeeding. These vignettes, adapted from those used in a study conducted by Kay Libbus in 1998, were scored on a scale ranging from 1 to 5 with a lower score indicating a more positive attitude towards breastfeeding. Since there were 14 vignettes possible overall scores could have ranged from 14 to 70 for each question. I have presented the scores for each vignette (Table 5). The total scores for each participant actually ranged from 31 to 70. In terms of individual vignettes, question 13 yielded the most negative response with an average value across all participants of  $4.3 \pm 0.9$  (Table 5).

## **Discussion**

Although this sample of mothers is non-random and likely not statistically representative of the Hispanic population, we can see that the patterns of breastfeeding behaviors and beliefs often parallel those found by previous studies. This particular group of women serves as a primarily low-acculturated group. Most of the women and their mothers were born outside the

United States, all participants self-identified as Hispanic, and Spanish served as the primary language of choice both for completing the survey and for speaking at home. Women belonging to this low-acculturated group represented several countries though too few of each country was represented to do individual analysis, we see that these varied sub-populations generally feel positively toward breastfeeding as reflected in the high rate of breastfeeding in this sample overall. The notable negative result to this study was that few women chose to breastfeed exclusively; therefore, formula remains the supplemental food of choice for infants even across a cultural group that historically breastfeeds at high rates when compared to minorities. Also one of the vignettes, number 13, yielded the most negative view toward breastfeeding. The situation presented in the question describes a woman whose husband chooses to discourage breastfeeding due to the perception that it will make the woman's breasts unattractive and unshapely. This negative response on the part of the participant demonstrates that there may be some concern about the effects that breastfeeding have on female appearance especially in regards to the opinion and support of her male partner. This perception, however, could easily be remedied with increased education of both men and women about the true effects that breastfeeding may or may not have on a woman's breasts. These overall results, nonetheless, support previous studies' findings that low acculturation corresponds to high rates of breastfeeding among mothers of Hispanic descent. These primarily Spanish-speaking and mostly foreign born women demonstrate positive attitudes toward breastfeeding and high rates of initiation, lending support to promotional campaigns that seek such results. Future campaigns should emphasize education about the physiology of breastfeeding with the intended goal of maintenance of these breastfeeding outcomes as an eventual step toward higher rates of exclusive breastfeeding across diverse minority groups.

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## Tables

**Table 1. Sample Population Characteristics**

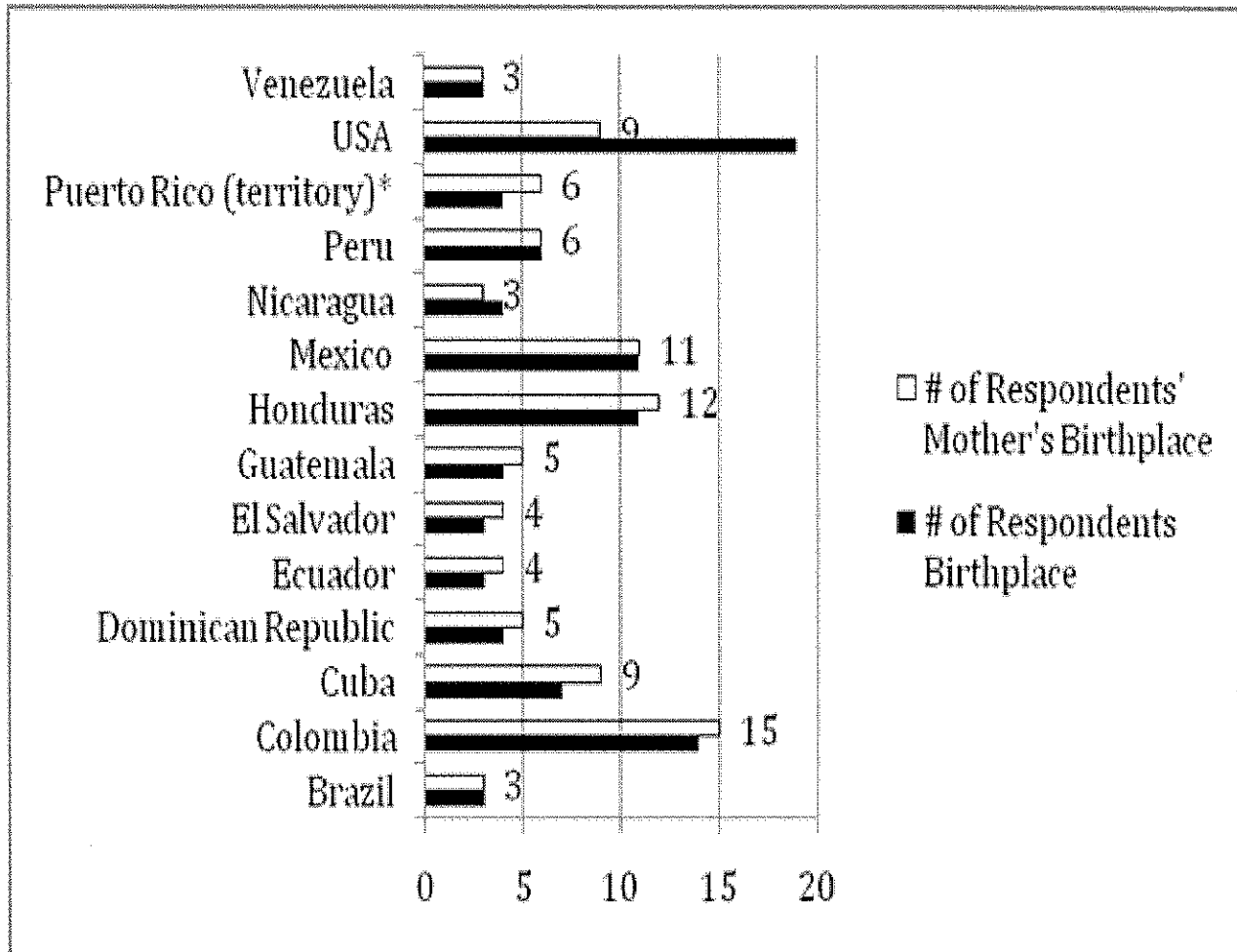
|                                |                 |                       |                 |
|--------------------------------|-----------------|-----------------------|-----------------|
| <b>Survey Language</b>         | English 21%     | Spanish 79%           |                 |
| <b>Age</b>                     | Average 32.6    | St Dev 8.5            |                 |
| <b>Highest Education Level</b> | Post Grad 14.6% | College 43%           | High School 32% |
| <b>Parity</b>                  | Average 2       | St Dev 1.17           |                 |
| <b>Currently in School</b>     | Yes 16%         | No 89%                |                 |
| <b>Marital Status</b>          | Yes 71%         | No 29%                |                 |
| <b>In Stable Union</b>         | Yes 85%         | No 15%                |                 |
| <b>Employed</b>                | Yes 51%         | No 49%                |                 |
| <b>Language Spoken in Home</b> | Spanish 46%     | English & Spanish 44% | English 5%      |

**Table 2. Reported Birthplaces**

| <b>COUNTRY*</b>          | <b># of Respondents<br/>Birthplace</b> | <b># of Respondents' Mother's<br/>Birthplace</b> |
|--------------------------|--|--|
| Brazil                   | 3                                      | 3  |
| Colombia                 | 14                                     | 15   |
| Cuba                     | 7                                      | 9  |
| Dominican Republic       | 4                                      | 5  |
| Ecuador                  | 3                                      | 4  |
| El Salvador              | 3                                      | 4  |
| Guatemala                | 4                                      | 5  |
| Honduras                 | 11                                     | 12   |
| Mexico                   | 11                                     | 11   |
| Nicaragua                | 4                                      | 3  |
| Peru                     | 6                                      | 6  |
| Puerto Rico (territory)* | 4                                      | 6  |
| USA                      | 19                                     | 9  |
| Venezuela                | 3                                      | 3  |



**Table 3. Comparison of Respondent Vs Mother's Birthplace**



**Table 4. Rate Breastfeeding Experience**



**Table 5**

| <b>Vignette</b>   | <b>Average Score</b> | <b>Standard Deviation</b> |
|---|----------------------|---------------------------|
| 1. Juanita, who just gave birth a while ago, is breastfeeding in the living room. Her neighbor woman friend has come to visit. Juanita covers her chest and baby's head with a shawl and finishes breastfeeding her child while the two adults chat. Do you think Juanita did the right thing when she continued breastfeeding? | 3.92                 | 1.323                     |
| 2. Estela is breastfeeding her baby in the living room. The neighbors, a man and a woman, arrive to visit. Estela covers her breast and baby's head with a shawl and finishes nursing while they chat. Do you agree that it was right that Estela continued to nurse?   | 3.9                  | 1.24                      |
| 3. Marta is eating lunch with her friends at McDonald's. When the baby woke up and seemed hungry, Marta decides to breastfeed the baby under her blouse. Do you agree that Marta should have taken her baby from the public area to nurse?  | 2.8                  | 1.4                       |
| 4. Catalina is lunching with friends at Dairy Queen. When her baby wakes up she decides to breastfeed him under her blouse. Her friends are embarrassed. Then she leaves to go to the car to breastfeed. Do you agree with Catalina's decision to take the baby out to the car to nurse?  | 2.7                  | 1.37                      |
| 5. Ana and her husband take their baby to church. When the girl became hungry, Ana took her to the bathroom to breastfeed. Do you believe it is necessary to carry the baby outside the church to breastfeed?   | 3                    | 1                         |
| 6. Maria and her husband take their baby to church. When the baby was hungry, Maria breastfeeds under her blouse. Also, she covers the baby's head with a shawl in case her blouse doesn't cover the baby. Do you believe Maria should have taken the baby outside the church to breastfeed?                                    | 3.4                  | 1.3                       |
| 7. Claudia is pregnant with her first baby and wants to breastfeed. Claudia's mother says that no one in the family could breastfeed because all women have small breasts and can't produce enough milk. Claudia decides to breastfeed anyway. Do you agree with her?   | 4                    | 1                         |

|   |      |       |
|---|------|-------|
| 8. Aurora is pregnant with her first baby and wants to breastfeed. Her husband wants her to use a bottle because breastfeeding is shameful and old-fashioned. Aurora decides to use the bottle in place of breastfeeding. Do you agree with Aurora's decision to not breastfeed?  | 4    | 1     |
| 9. Laura is pregnant and her doctor says she ought to breastfeed. Laura had wanted to bottle feed but changes her mind. Do you agree with Laura's decision to follow the doctor's advice?   | 4.19 | 1.06  |
| 10. Elena is counseled by a nurse to breastfeed because "human milk is best for newborns". Elena decides to bottle feed in place of breastfeeding because her friends say cow's milk is equal to human milk. Do you agree with Elena's decision not to breastfeed?  | 4.22 | 0.871 |
| 11. Yolanda is pregnant with her first baby and will give birth soon. She was considering breastfeeding, but she decides to give a bottle because she wants to return to work when the baby is 6 months old. She believes the baby won't take a bottle if she nurses. Do you agree with Yolanda's decision not to breastfeed? | 3.88 | 1.03  |
| 12. Carla is pregnant with her second baby. She's been told that breastfeeding is best for her baby. She decides to bottle feed. She tried to breastfeed her first baby but stopped because the baby lost weight in the first week. Do you agree with her decision not to breastfeed her second baby?                         | 3.9  | 1.1   |
| 13. Gabriela would like to breastfeed her first baby. Her husband tells her to use the bottle instead because he thinks Gabriela's breasts will lose shape and will not be attractive to him anymore. Do you agree with Gabriela's husband's decision?  | 4.3  | 0.9   |
| 14. Marcia decided not to breastfeed her first baby because she thinks breastfeeding in public is indecent and may attract unsolicited sexual approaches from men. Do you agree with Marcia's decision not to breastfeed?   | 4.28 | 0.821 |