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Infant-Feeding Practices of Low-Income Vietnamese American Women

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Abstract

Healthy People 2010 breastfeeding goals include 50% exclusive breastfeeding at 6 months. Santa Clara County WIC (SCCWIC) data indicated Asian participants had low (5.6%) 6-month breastfeeding rates. To examine infant feeding practices, Vietnamese breastfeeding peer counselors surveyed 133 Vietnamese SCCWIC participants (>18 yrs old, non-pregnant, < 28 months post-partum) using a structured questionnaire regarding intentions, attitudes and subjective norms towards breastfeeding. Results indicated 75% initiated breastfeeding in the hospital (33% exclusively, 42% partially); 25% exclusively formula fed. At survey time, 49% had terminated breastfeeding (average duration 4.4 months). Feeding intentions during pregnancy predicted feeding method used (p < 0.001). Most prenatal advice was from SCCWIC employees, friends and doctors who supported breastfeeding. Most postnatal advice was from nurses who supported breast and bottle-feeding equally. Stronger control beliefs, peer counseling and education was correlated with breastfeeding (p < 0.001). Improved post-delivery hospital advice may further increase breastfeeding initiation and duration.

Keywords: Breastfeeding, Vietnamese, Theory of Planned Behavior, Peer counselor, WIC

Introduction

Breast milk provides optimal infant nutrition and it is recommended that all infants be exclusively breastfed for the first 6 months of life, with continued breastfeeding for at least the first year. Despite this recommendation, national breastfeeding rates continue to be lower than even the Healthy People 2010 goal of 50% at 6 months. Data from Santa Clara County’s Special Supplemental Nutrition Program for Women, Infants, and Children (SCCWIC) (March, 2005) revealed at 6 months, only 5.3% of all Asian infant program participants continued to be breastfed without formula supplementation, 26.3% were fed both breast milk and formula, and 68.4% were formula fed exclusively. The WIC program is a federally funded program whose target population is low-income women, infants and children up to age 5 who are at nutritional risk. Benefits provided by WIC include supplemental nutritious foods, nutrition education and counseling, as well as breastfeeding promotion and support, which may include, as in Santa Clara County, a breastfeeding peer counseling program.

The decline in breastfeeding rates in the United States is striking, considering in Vietnam almost all infants are breastfed. However, after immigrating to Western countries, many are offered infant formula instead of breast milk. Many women who breastfed their Vietnamese born infants do not breastfeed their Western-born infants. Ghaemi-Ahmadi reported high breastfeeding and duration rates in Vietnam (e.g. of 95% of mothers who exclusively breastfed in Vietnam, 85% continued to breastfeed for > 5 months). However, after immigrating to the United States, breastfeeding rates dropped dramatically. Of the 32% who exclusively breastfed
their infant, only 14% breastfed exclusively for > 5 months, 38% offered both breast and formula, and 30% exclusively formula fed.\textsuperscript{10}

Reasons for the sudden shift in infant feeding practices are many. They include perceived inability to follow traditions of confinement, rest and consumption of a humorally balanced diet of ‘hot’ and ‘cold’ foods for at least one-month after delivery\textsuperscript{12} due to lack of social support, and absence of close relatives to cook required foods, resulting in beliefs that breast milk produced is nutritionally inadequate compared to formula\textsuperscript{6} or equivalent to formula\textsuperscript{12} for infant growth, weight gain and health.\textsuperscript{13} Additional reasons include economics\textsuperscript{6}, perceived convenience of formula,\textsuperscript{5} and returning to work.\textsuperscript{6,9,14,15}

There is limited recent research on current breastfeeding practices of Vietnamese immigrants. Research on breastfeeding practices of Vietnamese-Australian immigrants is out of date, primarily qualitative, and is based on small sample sizes.\textsuperscript{5,9,12,15,16,17} Studies of breastfeeding practices of Vietnamese-American immigrants also reflect practices of a limited number of women, and do not evaluate use of breastfeeding peer counselors.\textsuperscript{10,11,13,14,18} To ultimately increase breastfeeding rates in this population, understanding influences on infant feeding decisions is imperative.

The objective of this study was to examine and document infant feeding practices amongst Vietnamese SCCWIC program participants.

\textbf{Methods}

\textit{Participants}

Participants (n=133) were recruited from a pool of low-income Vietnamese-American women who participated in SCCWIC between January and March 2006. A convenience sample was obtained by approaching women who came to the WIC office for their appointment. In addition, breastfeeding peer counselors used their database of recently delivered mothers to initiate phone contact. Women received a written agreement to participate, were told the study was designed to understand the infant feeding practices of Vietnamese Americans and that participation was strictly voluntary and anonymous. No effort was made to choose or eliminate participants based on method of infant feeding.

Inclusion criteria were Vietnamese mothers who delivered an infant in or outside the US within two years of the survey completion date. Mothers < 18 years of age, > 28 months postpartum, and/or pregnant were excluded.

\textit{Questionnaire Development}

The Theory of Planned Behavior was used as the theoretical framework guiding the breastfeeding questionnaire development and analysis. This theory, developed by Icek Ajzen, is a predictive behavioral model that addresses social subjective norms, attitudes, and perceived behavioral control of an individual,\textsuperscript{19} suggesting intention to perform a behavior is formed by one’s behavioral attitudes and beliefs, subjective norms and control beliefs.

The questionnaire, adapted from a similar study completed in Great Britain on Scottish mothers,\textsuperscript{20} was modified for content and reading level, translated from English into Vietnamese by a bilingual breastfeeding peer counselor. The peer counselor, though not a professional translator, was experienced in providing breastfeeding counseling using culturally competent
communication methods. Then, a bilingual WIC nutrition counselor translated the survey back to English. Backtranslation is the established method for establishing translation validity.21

Procedure

WIC breastfeeding peer counselors (former breastfeeding mothers of low-income status who received a 40-hour certification in lactation education) conducted in-person surveys at two county WIC offices, or telephone surveys, with a convenience sample of Vietnamese speaking WIC clientele, who provided verbal consent to participate and received a small gift for interview completion. Since 85% of these women had previously met with WIC breastfeeding peer counselors who provided prenatal and postnatal breastfeeding education and support (at the SCCWIC office individually and in groups, on the telephone, and/or at their homes), the peer counselors were trained to administer questionnaires without bias. Questionnaires were pre-tested on WIC clients at a non-participating remote WIC office. A key was used to record survey number and WIC participant identification number to ensure identification and exclusion of duplicate surveys (e.g. when duplicate surveys were identified, the higher numbered survey was excluded).

The IRB of Santa Clara County Health Services and the IRB at San José State University approved the research protocol.

Definition of Breastfeeding

In this study, exclusive breastfeeding was defined using Labbok’s22 guidelines which state exclusive breastfeeding infants consume only breast milk (although vitamin/mineral drops or syrups are permitted). Partial breastfeeding means that in addition to breast milk, infants may consume any other food or liquid, including formula.22 Infants exclusively formula fed in the hospital are referred to as formula fed.

Using these definitions, infant feeding behavior in the hospital after delivery was collected by asking, “When you were in the hospital, how did you feed your baby?” Answers were categorized as exclusively breastfed, partial breastfed or formula fed. The only information about infant feeding behavior at home related to duration of breastfeeding. Specifically, women who had stopped breastfeeding were asked how long they had breastfed their baby. Information about consumption of complementary foods or amount of formula consumed was not collected.

Statistical Analysis

Data were analyzed using SPSS version 13 for Macintosh. Descriptive statistics (frequencies and means) provided population information and important variables. Analysis included Pearson’s correlations, and cross tab analyses \((\chi^2)\) assessed relationships between breastfeeding behavior and test variables. Missing values were excluded.

Results

Study Population

One hundred and thirty-five surveys were completed; two duplicates were discarded. All respondents \((n= 133)\) were born in Vietnam. Demographic data for women and infants is presented in Table 1.

Intention to Breastfeed and Actual Behavior
During pregnancy, 43% of Vietnamese mothers planned to exclusively breastfeed their newborn infant, 45% planned to partially breastfeed and 12% planned to formula feed. After giving birth, 33% exclusively breastfed in the hospital, 42% partially breastfed, and 25% formula fed. The greater the intention to breastfeed, the more likely mothers were to breastfeed in the hospital (Spearman’s Rho r = 0.561, p < 0.01). Of mothers who intended to formula feed, 88% formula fed in the hospital. Sixty-five percent of mothers who intended to partially breastfeed, and 61% who intended to breastfeed exclusively, followed their infant feeding intentions ($\chi^2 < 0.001$, ± 1 degrees of freedom).

In total, 88% of all mothers had intentions to initiate any breastfeeding (exclusively or partially); 75% followed through with these intentions in the hospital. Forty-nine mothers who initiated any breastfeeding had stopped breastfeeding at the time the questionnaire was completed. These mothers had breastfed (either exclusively or partially) for an average of 4.4 months. The 66 women who were currently breastfeeding, exclusive or partially, planned to continue any breastfeeding for an average of 9.1 months.

**Attitudes and Beliefs About Breastfeeding**

Table 2 presents responses to attitude statements towards breastfeeding. Using a feeding method to help their baby gain weight quickly was considered very important to over half of respondents. Following the traditional Vietnamese diet after giving birth was very important to 52% of respondents; 34% felt it not at all important.

Table 3 presents responses to belief statements towards breastfeeding. Almost half (43%) strongly agreed with the statement “If formula was not available through WIC, I would have tried harder to breastfeed”, compared to 34% who strongly disagreed. The majority of respondents strongly agreed with the statement requiring them to eat traditional foods for their infant’s health; 30% strongly disagreed. In response to having to follow Vietnamese traditions to gain their strength back, 48% strongly agreed and 41% strongly disagreed with the statement. Responses to the statement that formula fed babies put on weight quickly were bimodal, with 29% stating they strongly agreed and 38% stating they strongly disagreed. Fifty-three percent strongly agreed with the statement that breastfed babies are healthier, 29% strongly disagreed. A majority (89%) of participants strongly agreed with the statement that breast milk provides better nutrition than formula; 3% strongly disagreed.

**Normative Beliefs in Predicting the Intention to Breastfeed**

Chi-square analysis indicated advice received by Vietnamese mothers during pregnancy was significantly different than advice received in the hospital (p < 0.002). During pregnancy, 5% received advice favoring formula feeding, 37% received advice favoring both formula and breastfeeding equally, and 57% received advice favoring exclusive breastfeeding. In the hospital, more mothers (22%) received advice favoring formula feeding; 46% received advice favoring both feeding methods equally, and fewer mothers (32%) received advice favoring exclusive breastfeeding. Only 39% of mothers who received advice during pregnancy favoring exclusive breastfeeding received similar advice in the hospital, 54% of mothers who received advice favoring partially breastfeeding received similar advice in the hospital and 86% of mothers who received advice favoring exclusive formula feeding received similar advice in the hospital.

The relationship between infant feeding advice received during pregnancy and feeding method in the hospital was similar ($\chi^2$ significant at p < 0.002, degrees of freedom = 1) (Table 4).
For example, 86% of mothers who received advice during pregnancy favoring exclusive formula feeding exclusively formula fed their infant in the hospital, 54% of mothers who received advice to partially breastfeed followed that advice, and 43% of mothers given advice to exclusively breastfeed followed that advice. Although advice received during pregnancy and during hospital stay was significant with hospital feeding method, there was a stronger relationship between advice received in the hospital and hospital feeding method ($\chi^2$ significant at $p < 0.001$, degrees of freedom = 1). Specifically, 66% of mothers who received advice in the hospital favoring exclusive formula feeding exclusively formula fed their infant, 63% of mothers who received advice to partially breastfeed followed that advice, and 51% of women given advice in the hospital to exclusively breastfeed followed that advice.

During pregnancy, doctors, WIC breastfeeding peer counselors, WIC nutrition counselors, friends, partners, mothers, nurses, grandmothers, and in-laws (ranked from highest to lowest frequency) advised pregnant mothers about infant feeding (Figure 1). Of these people, those who favored breastfeeding the most included WIC breastfeeding peer counselors, friends, doctors and WIC nutrition counselors, mothers and partners—all reported to be individuals whose opinions are important to mothers when deciding how to feed their baby. In the hospital, most advice was received from nurses, whose opinions were less reported as being important in deciding how to feed.

**Perceived Behavioral Control**

Of 24 mothers who perceived they could not breastfeed in the hospital, 83% formula fed, and 17% partially breastfed; none exclusively breastfed. Of 106 mothers who perceived they could breastfeed in the hospital, 12% formula fed exclusively, 46% partially breastfed and 42% exclusively breastfed. Chi-square analysis indicated significance at $p < 0.001$ for this relationship.

**Breastfeeding Class Attendance**

Women who attended a breastfeeding class had higher hospital breastfeeding rates and decreased formula feeding rates ($p < 0.05$). Of mothers who attended a breastfeeding class, 41% breastfed exclusively, 42% partially breastfed and 17% formula fed exclusively in the hospital, whereas 24% of mothers who did not attend a breastfeeding class breastfed exclusively, 42% partially breastfed and 34% used exclusive formula feeding in the hospital.

**Discussion**

Breastfeeding goals of Healthy People 2010 are to increase the proportion of breastfeeding mothers in early post-partum to 75%, to 50% at 6 months, and to 25% at 1 year. Achieving these goals are especially challenging for new immigrants whose adjustment to a new environment is often stressful due to language barriers, limited employment and formal education, environmental challenges, financial status, and lack of a sense of control. In addition, conflicts in cultural practices, inability to follow traditions and beliefs, and lack of social support may negatively affect breastfeeding rates. However, the present study suggests educational intervention and having positive subjective norms from WIC breastfeeding and nutrition counselors, health care professionals, family and friends may overcome some of these barriers, resulting in breastfeeding rates that meet or exceed Healthy People 2010 goals. In this study, 75% of new mothers initiated any...
breastfeeding. Of these, 50% continued to breastfeed after 4.4 months and planned to continue for at least another 4 months.

This study indicates an increased proportion of Vietnamese American mothers are breastfeeding for longer periods of time than previously reported. A 1998 study of Southeast Asian immigrants living in Northern California reported only 3 of 57 Vietnamese women breastfed their youngest infant for < 1 month and the rest did not breastfeed at all. Henderson reported breastfeeding rates of 15% and shorter breastfeeding duration of 1 – 3 months for American-born infants, in contrast to the 7 – 12 months for Vietnam-born infants. Previous studies have found US breastfeeding rates to be very low (3.5%) at 4 months of age, and even lower (1.5%) at 6 months.

The present study confirms intention to breastfeed is predictive of breastfeeding behavior for Vietnamese American mothers. The Vietnamese American population surveyed indicated 88% planned to exclusively or partially breastfeed, while 75% actually partially or exclusively breastfed their infant in the hospital. Other studies reported similar results, supporting the Theory of Reasoned Action, which suggests intention to breastfeed is a strong predictor of breastfeeding. The practice of partially breastfeeding infants, as observed in Vietnam, was also seen in these women.

The Theory of Planned Behavior states the intention to perform a behavior is determined by favorable subjective norms, favorable beliefs and attitudes, and a strong perceived behavioral control. In this study, subjective norms (e.g. people who influenced the decision to breastfeed) included friends, WIC breastfeeding peer counselors, doctors, partners, nurses and family members. These findings are similar to Rossiter’s who reported 124 Vietnamese Australian mothers valued the opinions of significant others such as husbands, mothers, mothers-in-law, friends, doctors and nurses. McLachlan and Forster found 73% of Vietnamese Australian women perceived their partner preferred breastfeeding. Although mothers-in-law primarily guide infant feeding decisions in Vietnam, the present study found that mothers-in-law were not as involved in making infant feeding decisions. Considering health care professionals and family members may influence the decision to breastfeed, it would be important for doctors and nurses to emphasize breastfeeding and also to involve family members at prenatal doctor or WIC visits to discuss the importance of breastfeeding. The positive influence of peer support is further demonstrated in a father-to-father breastfeeding pilot support program at a Texas WIC program, which has proven successful in increasing breastfeeding rates.

In contrast to Rossiter’s study, this study indicated nurses’ opinions were not regarded as important in deciding how to feed. Most advice received during pregnancy was from a variety of sources that did not include nurses and most advice favored exclusive breastfeeding. However, most advice received in the hospital was from nurses who primarily favored partially breastfeeding. Furthermore, a significantly higher percentage of hospital advice from nurses favored formula feeding, compared to advice received during pregnancy. The stronger relationship between hospital advice and infant feeding behavior indicates advice provided after delivery was more influential than advice received during pregnancy. That women in this study followed advice of nurses in the hospital, despite their statement that nurses’ opinions were not regarded as important in deciding how to feed is paradoxical. However, this paradox speaks to the importance of promoting and enforcing hospital based breastfeeding education and support so that women receive consistent messages to breastfeed. In this study, breastfeeding peer counselors who provided education and support before and after delivery likely influenced many
of the mothers not only to consider breastfeeding but to follow through on their intentions, despite the advice provided by nurses in the hospital.

Traditionally, breastfeeding is not initiated within the first few hours after birth.\textsuperscript{6} Colostrum is typically not offered, but discarded, as it is thought to be unhealthy for the baby.\textsuperscript{9} Nguyen et al.\textsuperscript{8} first documented in 2004 that 78.6\% of Vietnamese Australians initiated breastfeeding within the first 3 days after birth and gave their infant colostrum. McLachlan et al.\textsuperscript{30} recently reported breastfeeding initiation rates at 75\% amongst 100 Vietnamese Australians, with 64.9\% of women reporting colostrum to be as healthy as formula. This study found similar results, with 75\% of women initiating breastfeeding early in the hospital. This may be due to mothers being better educated about breastfeeding prior to delivery through the WIC program.

Furthermore, maternal beliefs and practices appear to be different than previously reported. In a study of 20 Vietnamese-Australian women who had previously breastfed all of their Vietnamese-born children for over a year, only 11 breastfed their Australian-born children for 5.18 months and the other women did not breastfeed at all.\textsuperscript{11} It was found that these women breastfed for a shorter period of time due to beliefs that if a traditional Vietnamese diet and a prolonged period of rest was not possible, then mothers would produce poor quality breast milk unhealthy for infants.\textsuperscript{9} This study indicates at least 50\% of women placed great importance on practicing traditions of rest and eating a traditional Vietnamese diet balanced with ‘hot’ and ‘cold’ foods for optimal health and recovery after birth.\textsuperscript{9,10,17,26} This may partly explain why many of the women partially breastfed over exclusively breastfeeding.

The bimodal distribution of responses to the statement that “if WIC did not provide formula I would have tried harder to breastfeed” supports Tuttle\textsuperscript{14}, who reported one reason Southeast Asians in Northern California did not breastfeed was because formula was available through the WIC program. On the other hand, the split response also suggests Vietnamese mothers in the SCCWIC program felt breastfeeding was important and that although formula was available at no cost, it did not deter them from breastfeeding.

Another perception that may discourage breastfeeding among Vietnamese mothers is the belief that formula fed infants grow faster and are healthier than breastfed babies.\textsuperscript{11,13,15} This study indicates a majority of Vietnamese mothers perceived rapid weight gain to be important for infant growth. In Vietnam, Rossiter\textsuperscript{16} reported mothers felt breastfed infants had inadequate growth, or were more prone to sickness as compared to formula fed babies who were healthier and “fatter”, causing mothers to believe formula was superior to breast milk. The findings of the present study suggest mothers felt it important to use a feeding method healthier for baby, that they believed breast milk provides better nutrition than formula, and that breastfed babies are healthier. In contrast, Henderson\textsuperscript{11} reported 20 Vietnamese immigrants to the U.S. Pacific Northwest considered bottle-feeding healthier, even if breast milk was available. Different perceptions reported in this study may be attributed to the ongoing education and support provided by WIC breastfeeding peer counselors.

Reasons for formula feeding were not explained by plans to return to work as most participants were either unsure if they would seek employment or simply did not intend to enter the work force. Mothers who perceived they were able to breastfeed offered breast milk to their infants, and mothers who perceived they could not breastfeed, formula fed. Therefore perceived behavioral control over breastfeeding was an important factor to successful lactation. Dodgson\textsuperscript{28} found similar results in a study of Hong Kong mothers where perceived control and duration of breastfeeding had the strongest correlation. Empowering a mother with breastfeeding confidence can be a powerful tool in increasing the likelihood of breastfeeding.
Peer counseling programs are reported to be successful in increasing incidence and duration of breastfeeding among premature infants, the Latina population, women in Bangladesh, with father-to-father support, and in other low-income communities. Breastfeeding support provided over the telephone has also been reported to increase breastfeeding rates. At SCCWIC, the Vietnamese breastfeeding peer counselors provide education and support in person and over the telephone, at the WIC office and at the participant’s homes, during pregnancy and post-partum, as long as necessary. Cultural, social, communication and educational barriers can be alleviated with the involvement of Vietnamese speaking counselors. However, the influence of the Vietnamese-speaking breastfeeding peer counselors on breastfeeding rates was not directly measured in this study.

This study has a number of limitations. First, information was retrospectively collected, and therefore subject to recall inaccuracies. Since only low-income women participated, results may not be representative of all Vietnamese Americans. Finally, results may be biased with respect to participation in the study, as well as responses, as participants may have felt the need to “please” the interviewer (the Vietnamese WIC breastfeeding peer counselor) with their responses.

The importance of breastfeeding education and continuous support from Vietnamese speaking peer counselors is demonstrated by higher breastfeeding rates than previously reported in Vietnamese American mothers. Favorable subjective norms, stronger perceived control and a stronger intention to breastfeed influenced breastfeeding behavior. This study contributes to the body of knowledge about breastfeeding practices of Vietnamese American immigrants in Northern California. More research is necessary to further understand motivating factors that support long-term breastfeeding, to evaluate effectiveness of intervention programs, and to identify areas where public health employees can focus attention on further increasing breastfeeding rates of Vietnamese Americans to meet Healthy People 2010 breastfeeding goals.

**REFERENCES**

Figure 1. People Who Influenced Infant Feeding Decisions

People Who Influenced Feeding Decisions

Number of responses

Who provided advice during pregnancy
- Nurse: 78
- Doctor: 68
- WIC breastfeeding peer counselor: 48

People who favored breastfeeding
- Nurse: 86
- Doctor: 61
- WIC breastfeeding peer counselor: 63

People who provided advice in the hospital
- Nurse: 99
- Doctor: 50
- WIC breastfeeding peer counselor: 18

Whose opinion was important to them
- Nurse: 78
- Doctor: 77
- WIC breastfeeding peer counselor: 43

Legend:
- Nurse
- Doctor
- WIC breastfeeding peer counselor
- Family
- Partner
- Friends
- WIC nutrition counselor