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# Understanding Infant Feeding Practices among Chinese Mothers in New York City

Adele Lee

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## Abstract

As the fastest growing Asian subgroup, Chinese-Americans have received limited attention on their rates of breastfeeding versus formula feeding, and what factors influence that choice. For this qualitative study, semi-structured interviews were conducted with 23 Chinese postpartum mothers to explore factors that influenced feeding choices and the challenges they faced in raising young children in New York City. In order to examine infant feeding experiences and maternal health among Chinese mothers in the United States (US), this study explored the support Chinese mothers received at the hospital, at home, and at work.

Breastfeeding difficulties such as insufficient breast milk supply and problems with their infants latching on were among the most reported problems and post-hospitalization lactation support was found to be helpful for mothers who had access to the service. Maternal education related to the timing of introduction of solid foods was thought to be lacking or inconsistent. The tradition postpartum practice *zuo yuezi* was common and mothers reported both positive and negative aspects of this practice. Support from both husbands and elders was found to be important and mothers reported that husbands' support for achieving breastfeeding success was the most important. Some elders were in support of breastfeeding while others supported formula feeding in order to lessen stress and demand on the mothers. While previous studies have examined the impact of reverse-migration, or transnational parenting, on childhood and family development, its influence on infant feeding choices is explored here for the first time. The present study sheds some light on some of the current infant feeding and maternal postpartum practices among Chinese mothers in the US. These findings are intended to help guide future studies on developing educational and policy interventions in order to address the needs for improving breastfeeding experience among new Chinese mothers.

Understanding Infant Feeding Practices among Chinese Mothers in New York City

by

Lee, Adele

M.S., Syracuse University, 2013

Thesis

Submitted in partial fulfillment of the requirements for the degree of  
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## **Introduction**

Successful breastfeeding requires a mother to overcome barriers at many levels. Internally, it requires her to believe that breast milk is the best food for her infant and have confidence that she can successfully do it. At home, she needs a network of family and friends to help her when she encounters difficulties during the process. At work, she needs a supportive environment for a long-term commitment. Even when a mother is determined and ready to initiate breastfeeding, the lack of support in the hospital can still strongly discourage her to initiate. It is especially difficult for mothers to breastfeed today with the wide array of infant formula advertisements. Chinese mothers in the United States (US) may face even more challenges. A qualitative study is the first step to understand the potentially unique challenges of Chinese mothers related to their infant feeding practice.

## **Literature Review**

### **Background on Breastfeeding**

#### *Definitions*

The term breastfeeding originally referred to feeding an infant directly through a human female breast. Today, breastfeeding can also be done through breast milk expression. Since the discovery of the nutrient benefits and adequacy of breast milk for infants, researchers and breastfeeding promotions have been emphasizing the benefits of exclusive breastfeeding. While ‘any breastfeeding’ refers to an infant receiving breast milk with or without infant formula and other foods, ‘exclusive breastfeeding’ refers to feeding with only breast milk, with the exception of drops or syrups consisting of essential vitamins, mineral supplements or medicine (World Health Organization, 2012). ‘Ever breastfeeding’ refers to a child who has received breast milk with or without other types of infant food sometime in his or her life (Xu, Qiu, & Binns, 2009).

## Benefits of breastfeeding

The combination of all the nutrients in breast milk is unique and is irreplaceable by any type of infant formula (Nascimento & Issler, 2003). Breast milk provides all of the essential nutrients as well as immunological benefits (Nascimento et al., 2003). The beneficial effects of breastfeeding for both the infant and mother have well been established. Some of the benefits for infants, mothers, and economics are shown in Table 1.

**Table 1. – Benefits of Breastfeeding**

	Benefits	Studies	First Author, Year
Child	Infants born extremely low birth weight exclusively breastfed exhibited improvement in both oxygen saturation and temperature, compared to those with mixed feeding of breast milk and premature infant formula.	"Breastfeeding infants who were extremely low birth weight"	Bier, 1997
	Infants predominantly breastfed exhibited significant reduction in gastrointestinal tract infections, atopic eczema, and noneczematous.	"Predominant breast-feeding from birth to six months is associated with fewer gastrointestinal infections and increased risk for iron deficiency among infants."	Monterrosa, 2008
	At 6 to 9 month of life, breastfed children exhibited better regulation over energy intake than those infant formula fed.	"Adequacy of energy intake among breastfed infants in the DARLING study: relationships to growth velocity, morbidity, and activity levels."	Dewey, 1991
	Infants predominantly breastfed for 6 months exhibited a lower prevalence of overweight 9 to 14 years later.	"Risk of overweight among adolescents who were breastfed as infants."	Gillman, 2001
	Review on benefits of early skin-to-skin contact (SSC) of infants and mothers: Infant: reduced crying, grimacing and heart rate surges, stabilizing body temperature.	"Implementing skin-to-skin contact at birth using the Iowa model: applying evidence to practice."	Haxton, 2012
	Other benefits by a review article: <ul style="list-style-type: none"><li>- Prevent protein-calorie malnutrition among infants in developing countries.</li><li>- 50% lower risk of sudden infant death syndrome</li><li>- Allergy less common and severe in breastfed infants: asthma, eczema, Crohn's disease</li><li>- Less diarrhea, vomiting, common cold</li><li>- Child's cognitive prognosis</li><li>- Better scores in developmental tests</li></ul>	"Breastfeeding: making the difference in the development, health and nutrition of terms and preterm newborns."	Nascimento, 2003



<b>Maternal</b>	On 1-year follow-up of breastfeeding and formula-feeding of mothers, majority of mothers (75%) who took employment sick-leave did not breastfeed.	"Comparison of Maternal Absenteeism and Infant Illness rates among breast-feeding and formula-feeding women in two corporations."	Cohen, 1995
	Inverse association between total duration of breastfeeding and breast cancer and association between reduced risk and ever breastfeeding.	"Breastfeeding and reduced risk of breast cancer in an Icelandic cohort study."	<a href="#">Tryggvadóttir, 2001</a>
	4.3 to 5% decreased risk of breast cancer for every 6 to 12 months of breastfeeding.	"Breast cancer and breastfeeding: Collaborative reanalysis of individual data from 47 epidemiological studies in 30 countries, including 50, 302 women with breast cancer and 96,973 women without the disease."	Collaborative Group on Hormonal Factors in Breast Cancer, 2002
	Breastfeeding reduces the possibility of acquiring breast cancer while positive family history of breast cancer and history of using oral contraceptive pills maybe the epigenetic factors promoting the occurrence of breast cancer.	"Association between reproductive factors and breast cancer in an urban set up at central India: a case-control study"	<a href="#">Lodha, 2011</a>
<b>Economic</b>	In cost-analysis study, saving of \$10.5 to \$13 billion per year in healthcare system if 80% to 90% of all families in the United States breastfeed exclusively for 6 months. Diseases related to non-breastfeeding taken into calculation: <ul style="list-style-type: none"> <li>- Necrotizing <a href="#">enterocolitis</a> (EBD for 3-month: Risk ratio of 0.42)</li> <li>- Otitis media (0.77 for any BF, 0.5 for EBF)</li> <li>- <a href="#">Gastroenteritis</a> (EBF for 6-month: 0.36)</li> <li>- Hospitalization for lower respiratory tract infections (EBF for 4-month 0.28)</li> <li>- Atopic dermatitis (EBF for 0.68)</li> <li>- Sudden infant death syndrome (Any at 6-month 0.64)</li> <li>- Childhood asthma (Any for 3-month 0.73)</li> <li>- Childhood leukemia (Any for 6-month 0.81)</li> <li>- Type 1 diabetes mellitus (Any at 3-month 0.77)</li> <li>- Childhood obesity (Any at 3-month 0.93)</li> </ul>	"The burden of suboptimal breastfeeding in the United States: a pediatric cost analysis."	Reinhold, 2010

### Breastfeeding in China

Breastfeeding used to be prevalent in China for a number of reasons. Chinese mothers who were employed in factories, by the government, and in health or administrative positions were given 2.5 hour breaks during the workday to breastfeed their newborns (Raven, Chen, & Tolhurst et al., 2007). There were also many traditional practices which facilitated a mother spending more time and bonding with her newborn, such as the *zuo yuezi* period, which emphasizes a mother restraining from going outdoors and being home with the newborn (Raven et al., 2007). The breastfeeding rates in China have steadily declined since the 1950s (Xu et al., 2009). It was reported the average duration of breastfeeding in Tianjin, China had dropped from 25 months in 1932 to 13 months in 1972 (Xu et al., 2009). The decline was assumed to be due to reasons including the

popularity of infant formula, more women entering the workforce, redefinition of women's position in the modern society, and image of the breast as a sex symbol (Xu et al., 2009; Gottschang 2007; Nascimento et al., 2003).

Many efforts have been made to promote breastfeeding in China when the lowest point was reached in the 1980s (Xu et al., 2009). The Chinese government set the national goal for the exclusive breastfeeding rate at 6-months to be 85% (Xu et al., 2009). Since the Baby-Friendly Hospital Initiative (BFHI) was introduced to China in 1992, there have been over 6,000 Baby-Friendly Hospitals crafted in China as of 2012 (UNICEF, 2012). Other initiatives in China include women and child health protection legislation and various societal support and breastfeeding education programs (Xu et al., 2009).

#### *Breastfeeding Objectives in United States*

The breastfeeding objectives set by Healthy People 2010 for 'ever breastfeeding', 'any breastfeeding' at 6- and 12-month, and exclusively at 3- and 6-months were 75%, 50%, 25%, 40%, and 17%, respectively. With the rates being 74%, 43.5%, 22.7%, 33.6%, and 14%, respectively between 2007 and 2009 (Healthy People 2010), none of the objectives were achieved. While the World Health Organization (WHO) recommends infants to be exclusively breastfed for the first 6 months of life and continue with appropriate complementary foods for up to 2 years, the majority of infants in the United States are not breastfed at 6-months. Currently, there is no official breastfeeding rate available specifically for Chinese-Americans, but studies show that the ever-breastfeeding rate of Asian-American mothers was the highest (88.8%) among all other populations (Singh, Kogan, & Dee 2003). Yet the rate dropped more than half (39.2%) at 6-months, and was lower than the rates among non-Hispanic whites (40.2%) at 6-months who had

an ever-breastfeeding rate (77.3%) as well as being lower than the Chinese population (Singh et al., 2003).

The Asian population makes up 5% of the total population in the United States, and the population is expected to double by 2050 (US Census 2010). As the fastest growing Asian subgroup with a population over 3.6 million, Chinese-Americans have received limited attention in terms of interventions and strategies to improve the current low breastfeeding rates and no major study has been conducted to explore their breastfeeding practices in the United States (US Census 2010; Donaldson, Kratzer, & Okutero-Ketter et al., 2010).

### **Chinese Mothers in New York City**

New York City is one of the most ethnically diverse areas in the United States. The foreign-born population is three times (36%) the national rate (12%) leading Mayor Bloomberg to call New York City “the world’s home” (Department of City Planning, NYC 2005; Census 2010). Since the late nineteenth century, Chinese people began to migrate to New York City, forming large communities in Manhattan, Queens and Brooklyn (Muennig, Wang, & Jakubowski, 2012). Data from the 2004 New York City Health and Nutrition Examination Survey (a health and nutritional monitoring system adapted from the National Health and Nutrition Examination survey) found that those born in Mainland China were more likely to have less than a high school education and a lower income compared to all other Asian groups and New Yorkers (Muennig et al., 2012). As low income and education level are risk factors associated with using infant formula, the targeted population for the present study included those who were first-generation immigrants from China (US Census 2010) in order to explore the special challenges this population faces in breastfeeding (Wojcicki, Gugig, Tran et al., 2010; Hurley et al., 2008; Peterson & DaVanzo 1992).

## **Lack of Childcare Support**

Due to low educational levels and lack of English skills, many Chinese immigrant women in New York City work long hours in places like sweatshops that do not provide childcare support (Donaldson et al., 2010). After losing the large network of family support at home upon moving to a new country, a lot of the mothers find it difficult to afford childcare services and therefore are forced to find other ways to raise their children (Noble, Rivera-Todaro, & Hand et al., 2010). In response, many Chinese women in the United States practice reverse-migration separation or transnational parenting, a process of sending an American-born child to China to be raised by the extended families there (Kwong, Chung, & Sun et al., 2008; Bohr & Tse, 2009; Da, 2003). This has obvious implications for breastfeeding success among these mothers.

A survey done in 2008 on over 200 Chinese immigrant women receiving pre- and postnatal care in a community health center in Chinatown in New York City found that the practice was common within the two major Chinese communities (Manhattan and Flushing) affecting 57% of the population (Kwong et al., 2008). Factors that were found to be associated with the practice included “having to return work”, “not having enough childrearing experience”, “inability to afford childcare costs in the US”, and “immigrant status was a barrier to raising children in the US” (Kwong et al., 2008).

The prevalence of “reverse-migration” has significantly prevented a majority of the Chinese mothers (57%) in New York City from breastfeeding (Kwong et al., 2008). Besides missing the benefits of breastfeeding, Kwong et al., (2008) also indicated that maternal separation was associated with depression in both the mothers and children. Therefore, it is necessary to further explore the current prevalent practice of maternal separation among the Chinese communities. For researcher and social support services, this would also be helpful information in order to plan

and improve the availability of childcare services for working immigrant mothers in the United States.

### **Racial and Ethnic Disparities in Healthcare System**

In the healthcare system, all patients who are eligible to receive healthcare services should be afforded equal treatment regardless of their race and social status. However, disparities exist in the healthcare system in the United States (Cohen, 2005; Stryer, Weinick, & Clancy, 2002). The American College of Physicians reported a list of inequalities minorities face in the healthcare system (Cohen, 2005). It was reported, compared to non-minorities, minorities do not have the same access to health care, they have poorer overall health status, and they are less represented in the healthcare professions (Cohen, 2005). Another study that was based on reviews of newspaper headlines from year 2002 (including the New York Times; Washington Post and Wall Street Journal) also reported that women of Asian, African, and Hispanic descent tended to wait twice as long as white women for follow-up testing after having abnormal mammographies. Minority racial and ethnic groups were at greater risk of being untreated for cancer pain, and African-American and Hispanic-American HIV patients were half as likely as non-Hispanic whites to be invited for clinical trials of new medicines designed to slow the progress of HIV (Stryer et al., 2002). These inequalities may extend to prenatal and postnatal care and mothers' access to breastfeeding support.

#### **Negative Breastfeeding Experience among Minority Mothers**

In a qualitative study looking to understand breastfeeding experience among low-income African-American living in Brooklyn, it was found that the medical staff went against mothers' decisions to breastfeed by feeding their infants with infant formula (Kaufman, Deenadayalan, & Karpati 2010). A 35-year old mother expressed her intention to breastfeed to the medical staff but the

hospital staff fed her infant with infant formula (Kaufman et al., 2010). Among the mothers who intended to breastfeed, half of the African-American and several Puerto Rican women were provided with little or no breastfeeding information or instruction during their hospital stay (Kaufman et al., 2010). These practices created ambivalent feelings for the mothers as to why breastfeeding was not supported by the medical staff and whether breastfeeding was the right decision. Some even expressed anger towards medical staff for going against their wishes to breastfeed by using infant formula (Kaufman et al., 2010).

Kaplan (2010) reported a similar finding in another report; she found that only 37% of mothers in New York City who initiated breastfeeding at the hospital were shown how to do it, indicating that breastfeeding was not well supported by the medical staff even if a mother expressed her interest to breastfeed. In Kaplan's report (2010), she also included some compelling data from 2004 to 2005 that was unpublished regarding mothers' breastfeeding experience in the hospitals in New York City: 42% of the mothers who initiated breastfeeding did not have their babies room-in with them, 69% of them did not initiate breastfeeding within the first hour after giving birth, and 86% of them received a gift pack that contained formula (Kaplan, 2010). It is important to find out how Chinese mothers receive breastfeeding support during the hospital-stay.

### *Language Barrier*

The 2010 Census reported that over 70% of the Chinese-born population in New York City is not proficient in English (US Census, 2010). The language barrier Chinese mothers face could affect them when communicating with healthcare professionals about their infant feeding choices and challenges. The majority of first generation Chinese women in the United States, especially the ones who work in the Chinese communities in New York City, do not speak English. They

reside in the neighborhoods in Manhattan, Queens and Brooklyn, where languages other than Chinese are not necessary. As a result, they never learn to speak English even after living in the United States for a long period of time.

When it comes to breastfeeding in the hospital with mostly English-speaking medical staff, even if a Chinese-speaking mother intends to breastfeed during the prenatal period, she may have trouble communicating her intention to the medical staff without the help from an interpreter. Noble and colleagues (2008) found that one of the factors that influence the decision to initiate breastfeeding was when the decision was made prior to giving birth. However, in a situation where the medical staff is not cooperative with Chinese mothers to initiate breastfeeding and the mothers cannot speak English, breastfeeding may not be successful. Therefore, it is important to find out how the Chinese mothers receive breastfeeding support during the hospital stay, and how they perceive that support.

Due to the language barrier, Chinese-speaking mothers could also be hindered from receiving breastfeeding education available in the hospital. Breastfeeding brochures printed in the Chinese languages could be available in hospitals, but whether they are actively being distributed to the Chinese patients has not been evaluated. Based on the unsupportive breastfeeding experience reported by the African-American mothers in New York City (Kaufman et al., 2010), it is necessary to find out whether breastfeeding educational materials and other kinds of support are offered in Chinese languages and whether improvement is needed.

### *Experience of WIC among Minority Mothers*

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) is a federally funded benefits program that provides services to low-income mothers with a goal of providing support to mothers and children within 5 years of age who are at nutritional risk (WIC,

2012). Kaufman et al (2010) conducted a qualitative study in New York City to explore African American mothers' experience with WIC and they found that the way WIC assisted African American mothers through subsidies and distribution of infant formula created confusion and uncertainty among the mothers. One African American woman perceived WIC supporting the opposite of breastfeeding through the giving of infant formula (Kaufman et al., 2010; Cricco-Liza, 2006). In a survey study conducted particularly among participants in WIC, some of the major reasons for early breastfeeding cessation included, "fear of difficulty or pain", "infant breast rejection", "perceived insufficient milk", and "fear of embarrassment" indicating improvement is necessary in terms of breastfeeding education and support (Hurley et al., 2008).

The breastfeeding rates among WIC participants have increased over the years (Landau, 2011). However, when comparing WIC and non-WIC participants, it was found that more non-WIC mothers were breastfeeding at the hospital than WIC mothers (76.1% vs. 54.3%) and twice the number of mothers from the non-WIC group were breastfeeding at 6-months compared to the WIC participants (42.7% vs. 21%) (Ryan et al., 2006). The rates among Asian-American mothers showed similar patterns: more non-WIC participants were breastfeeding at 6-month than WIC participants (51.4% vs. 33.1%) (Ryan et al., 2006). The gap in breastfeeding rates between the WIC and non-WIC participants has steadily increased in the past 25 years (Ryan et al., 2006). This survey study provided a general view of the difference in breastfeeding patterns between WIC and non-WIC participants (Ryan et al., 2006). However, the risk factors that are associated with mothers who do not breastfeed, such as younger maternal age and having lower income and educational levels are also the common characteristics among the WIC participants (Wojcicki et al., 2010; Hurley et al., 2008; Ryan et al., 2006; Peterson et al., 1992). Therefore, it is not reasonable to generalize that WIC is responsible for mothers not breastfeeding.



There has not been a study to explore how Chinese mothers receive support from WIC and their experience with the program. In order to find out whether WIC has affected infant feeding choices among the Chinese mothers in New York City, a study similar to Kaufman's (2010) study on African-American mothers can provide more information. It will be important to see how Chinese mothers perceive WIC staff's perception towards breastfeeding.

### *Role of Healthcare Professionals in Breastfeeding Support*

Previous studies conducted on Chinese mothers in foreign countries have reported that a significant factor that strongly encouraged mothers to breastfeed was breastfeeding advice from healthcare professionals (Foo et al., 2005; Zhang, Scott, & Binns, 2004). A study conducted in Perth, Western Australia, found the breastfeeding rates among Chinese mothers were similar to those in China: between Chinese mothers in Australia and China, breastfeeding initiation was 88.5% and 86.6%, 74% at 3-months in both countries and 55.6% and 63% at 6-months, respectively (Zhang et al., 2004). These breastfeeding rates were higher than the Asian-American mothers in the United States where the 6-month rate was 31.8% (Pediatric Nutrition Surveillance 2010 by Center for Disease Control and Prevention). As breastfeeding support from doctors was found to be an important factor in encouraging Chinese mothers to breastfeed in the Australian study (Zhang et al., 2004), it is important for the medical staff in the United States to recognize their supportive role in breastfeeding as well (Kuan, Britto, & Decolongon et al., 1999).

While the perception towards healthcare professionals in breastfeeding support by the Chinese mothers has not been evaluated, some studies have reported that the breastfeeding duration was negatively associated with breastfeeding knowledge and advice given by the physicians (Chen, Johnson, & Rosenthal, 2011; Giuliani, Caiaffa, & Vogelhut et al., 1994). Even with both the American Congress of Obstetricians and Gynecologists and the American Academy of Family

Physicians formally supporting breastfeeding, physicians and midwives in the United States often report not having enough infant nutrition education (Weddig, Baker & Auld, 2010; The American Congress of Obstetricians and Gynecologists 2007; American Academy of Family Physicians 2008; Howard, Schaffer, & Lawrence, 1997). It is time to evaluate the quality of breastfeeding support received by the Chinese mothers during prenatal care, at the hospital, and from their doctors in the United States.

## **Recognizing Cultural Beliefs**

### **Cultural Beliefs in Breastfeeding**

Culture is defined as a set of learned “values, beliefs, attitudes, and practices” that are passed from generation to generation within a community (Kittler & Sucher, 2008). It is especially important for the Chinese immigrants to maintain their identity through engaging in cultural practices after migrating to a new country. Historically, in the Sui dynasty (581-681 AD), parents were encouraged to feed 30-day-old infants foods other than breast milk, and in the Tang Dynasty (618-907 AD), rice drink was given to 7-day old infants as medical advice to improve digestion (Donaldson et al., 2010). As these cultural practices have been passed on over thousands of years, rather than asking Chinese mothers to give up their traditions completely, it might be more realistic to incorporate cultural practices with breastfeeding to enhance their experience. But first, it is necessary to find out what cultural beliefs are currently being practiced among Chinese mothers who are breastfeeding in the United States and how these practices are affecting their experience. Then, intervention programs can be developed to improve infant feeding practices while respecting cultural practices.

Chinese people value and continue their cultural beliefs even years after migrating to a new country (Tsai, Morisky, & Kagawa-Singer et al., 2011). There have been studies conducted to explore the prevalence of cultural practices during pregnancy and the postpartum period among new mothers in China and overseas, but not in the United States (Raven et al., 2007; Cheng, 1997). In order

to improve infant feeding experience among the Chinese population, it is important for intervention programs to recognize these unique practices and their influence on mothers' infant feeding decisions.

Raven et al (2007) explored the prevalence of traditional practices during the postpartum period among new mothers in China and found that the practice of *zuo yuezi*, a custom that addresses 'the imbalance caused by blood and heat lost at birth' by emphasizing that the mother resting at home was still commonly practiced in both rural and urban areas of China. Another study found that these practices were prevalent among Chinese mothers in Scotland (Cheng, 1997). Some Chinese mothers practiced *zuo yuezi* out of respect for elders and traditions and cultural rituals that are important for childbearing, while others believed that these practices serve as a significant support in their transition to motherhood (Raven et al., 2007).

In order to encourage more Chinese mothers in the United States to breastfeed, it is necessary to conduct an in-depth discussion with the mothers to find out the existing cultural beliefs that are being practiced during the postpartum period and how these practices have affected their decision on infant feeding choices. To achieve a well-balanced breastfeeding experience that respects following traditions, interventions could alter certain beliefs to improve their compatibility with breastfeeding. For instance, instead of feeding infants with honeysuckle herb, mothers could be advised to bath the infant in honeysuckle soap. It will be important for the healthcare professionals and breastfeeding promotion programs to recognize, respect and incorporate identified cultural practices when designing interventions in order to help Chinese mothers in the United States achieve their breastfeeding goals and embrace traditions at the same time.

### Correct Misconceptions in Infant Feeding

Although the *zuo yuezi* period encourages the mother to spend more time breastfeeding her newborn, some of the dietary practices during this period could prevent the infant from being exclusively breastfed. There has been no study conducted in the United States to find out the prevalence of cultural practices during the postnatal period and how these practices influence the way a Chinese mother feeds her newborn. In-depth interviews will allow the Chinese mothers to share how the cultural practices in China compare to the ones in the United States. The information can be used to develop breastfeeding programs that target to correct misconceptions while respecting cultural beliefs.

Traditional beliefs influencing feeding practices in China and among Chinese mothers in Scotland included feeding an infant honeysuckle herbs, rice drink at 7-days, and adult foods at 30-days (Donaldson et al., 2010; Raven et al., 2007). There are also behavioral and hygiene taboos associated with the breastfeeding mother, such as avoiding tooth brushing and showering, limiting fruit and vegetable consumption, restraining from going outdoors, and restricting sexual activities (Liu, Mao, & Sun et al., 2009; Raven et al., 2007; Cheng, 1997). In one study, a Chinese mother expressed her reason for discontinuing breastfeeding was to resume sexual relations with her husband, as the couple believed 'sex and breast-feeding would be too depleting to her body' (Gottschang, 2007). All of these factors have yet to be investigated in the United States.

In 2009, a randomized controlled intervention study successfully improved breastfeeding rates for mothers in both urban and rural areas of Hubei, China by working to correct misconceptions common in the postpartum period (Liu et al., 2009). Mothers in the intervention groups in both areas received four postpartum counseling visits and two sessions of two hour health and nutritional education sessions. These sessions included lessons on the food guide

pyramid, importance of dairy, fruit and vegetable consumption, healthy menus, optimal hygiene, physical exercise during the postpartum period, and common misconceptions about nutrition and health problem concerns. The control groups were only exposed to the current normal standard of care (Liu et al., 2009). Compared to the assessment at baseline, the mothers in the intervention group significantly improved their knowledge compared to mothers in the control group. For instance, women in the intervention group responded more positively to the following statements: “colostrums be fed to the infant” (96.1% vs. 68.92%), “women can brush teeth and take shower during puerperium” (92.21% vs. 68.92%), and “women can eat vegetables and fruits during puerperium” (90.62% vs. 65.64%) (Liu et al., 2009). When assessing the actual daily intake of food, the mothers in the intervention groups also had a significantly higher consumption of fruits and vegetables than those in the control groups (Liu et al., 2009). The study also recorded the incidence of maternal health problems during lactation and found that the intervention program successfully reduced negative health outcomes, including constipation, anal fissure, leg cramps or joint pain, abdominal pain, dizziness, and most importantly, insufficient milk production (Liu et al., 2009).

The success of this intervention shows that an educational program that emphasizes a balanced diet and other beneficial behaviors can decrease misconceptions about breastfeeding and can help reduce negative health outcomes during the postpartum period that are caused by traditional misconceptions among Chinese mothers in China. To understand the current cultural practices among the Chinese communities in the United States, interviews with Chinese mothers who recently gave birth in the United States are necessary. In order to improve their breastfeeding experience, educational and breastfeeding programs can be developed to correct the identified negative behavior, while still respecting traditional Chinese cultural practices.

## **Importance of Self-Efficacy in Breastfeeding**

Breastfeeding used to be the only way for an infant to receive his or her nutrients. With the emergence of infant formula, when problems occur during breastfeeding, mothers with low self-efficacy can easily switch to infant formula and know that their infants will still receive sufficient nutrients. Chinese immigrant mothers are susceptible to using infant formula because they tend to have low education levels, low socioeconomic status, and lack social support which are the characteristics associated with using infant formula or early cessation of breastfeeding (Chen et al., 2011; Jones, Koganb & Singh et al 2011; Qiu, Zhou & Binns et al., 2009; Hurley et al., 2008; Noble et al 2008; Persad & Mensinger 2008; Celi, Rich-Edwards, Richardson et al., 2005; Singh et al 2003; Peterson et al., 1992). Successful long-term breastfeeding requires a mother to have strong self-efficacy. Breastfeeding education programs therefore should include techniques to improve a mother's problem-solving skills (Ingram, Cann & Peacock et al., 2008; Noel-Weiss, Rupp & Cragg et al., 2006).

In a qualitative study that aimed at understanding factors that influence new mothers' feeding choices in Beijing, China (Gottschang, 2007), it was found that mothers often gave up on exclusive breastfeeding and switched to infant formula as soon as they encountered problems. The mothers reported infant formula satisfied their infants more, and at the same time allowed their body to conserve energy and recover more efficiently from pregnancy (Gottschang, 2007). It happened even when the mothers were aware that breast milk was the best for the infant (Gottschang, 2007). On the other hand, one mother continued to breastfeed despite the difficulties in the early postpartum period (Gottschang, 2007). Her success relied on her persistence and strong self-efficacy that both the infant and her body needed time to adjust to breastfeeding (Gottschang, 2007). When the adjustment period was over, her baby was sleeping more regularly and her body was able to regain strength. She felt confident that she had acted as a good mother by providing breast milk as the best food for her infant and not infant formula (Gottschang, 2007). The story of

this mother showed that when a mother is determined to breastfeed, she can pass this transition period and achieve breastfeeding for long-term.

In addition to China, the concern that the infant was not satisfied by breast milk was prevalent among mothers in other countries who switch to infant formula due to breastfeeding difficulties (Kaufman et al., 2010; Hurley et al., 2008; Goel, House, & Shanks, 1978). Prenatal classes are offered at clinics in the Chinese communities of New York City. However, whether the curriculum included necessary problem-solving strategies has not been studied before. In-depth interviews with the mothers can explore whether the breastfeeding education attended by the mothers prepared them for when breastfeeding difficulties occur, and what can be done to improve the classes to help future mothers.

The switch to using infant formula due to breastfeeding difficulties is a common issue. One study suggested in order to achieve a successful breastfeeding experience, it is important to take into account both maternal and infant well-beings (Gottschang, 2007). Often times, interventions were designed with the emphasis on benefits for infants while neglecting maternal problems during breastfeeding, such as the mother's frustration during the process. As a result, once infants expressed more satisfaction by sleeping more and crying less after switching to formula feeding, mothers thought that infant formula was the better food choice for their babies and that breastfeeding was not needed (Gottschang, 2007).

Breastfeeding is not easy. There are many challenges involved in the practice and it requires determination and confidence in order to continue for the long-term. It is necessary to find out what challenges Chinese immigrant mothers face during the process and what they perceive as not sufficiently addressed in the breastfeeding education in order to improve future educational programs. As a needs assessment, a qualitative investigation can provide insights for

future breastfeeding intervention programs to address useful problem-solving skills so that the mothers feel confident about their decision to breastfeed and can achieve long-term success.

### **Achieving Long-Term Breastfeeding through Expression of Breast Milk**

The BFHI involves 10 strategies to increase breastfeeding rates within the hospital (UNICEF, 2012). In Beijing, China, the breastfeeding initiation rate at a Baby-Friendly Hospital increased from 56% to 63% to 83% in 1989, 1992, 1994, respectively (Xu et al., 2009). However, Gottschang (2007) reported from her qualitative interviews with working mothers in China that the BFHI was found to be only effective while the mothers were still at the hospital. In another study conducted in a Baby-Friendly Hospital in Hong Kong, China among mothers who intended to exclusively breastfeed for 6 months, only 14% were still exclusively breastfeeding at 6-months postpartum (Samuel, Thomas, & Bhat et al., 2012). One of the reasons for stopping breastfeeding was mothers returning to work (Samuel et al., 2012; Gottschang, 2007).

The findings from two studies revealed that although BFHI was effective in increasing breastfeeding initiation rates at the hospital through various strategies, it was only a short-term strategy. When a mother has to return to work, it requires different strategies to support her for long-term. One of the solutions that was found to be effective in helping mothers continue to breastfeed after returning to work was breast milk pumping (Win, Binns, & Zhao et al., 2006). However, how Chinese mothers in the United States perceive breast milk pumping as a tool in helping them breastfeed over the long-term has not been evaluated, especially given the hectic working condition reported in previous studies (Donaldson et al., 2010). A qualitative study can allow the mothers to talk about their experience with expressing human milk, share their feelings about pumping breast milk at work, and how their work environment can be improved to support long-term breastfeeding practices.



## **Underrepresented Chinese-American Immigrant Mothers**

In order to encourage and promote breastfeeding, especially among different ethnic groups, in-depth qualitative interviews have been conducted on African-American mothers to explore their unique challenges, and various intervention studies have been done among Hispanic mothers that were successful in increasing breastfeeding rates (Kaufman et al., 2010; Sandy, Anisfeld, & Ramirez 2009; Chapman, Damio & Young et al., 2004; Wolfberg, Michels, & Shields et al., 2004; Morrow, Guerrero, & Shults et al., 1999). Still, no similar studies have been conducted for Chinese-American mothers in the United States.

Studies among Chinese immigrant mothers in foreign countries explored breastfeeding practices and found various factors associated with breastfeeding (Hornbeak, Dirani, & Sham et al., 2010; Ingram et al., 2008; Poon, Ho, & Yeo 2007; Foo et al., 2005; Zhang et al., 2004; Li, Zhang & Binn 2003; Koh & Chir 1981; Goel et al., 1978). An intervention study conducted in Vancouver, Canada, developed a list of attributes that were found necessary to improve exclusive breastfeeding rates among Chinese mothers (Janssen, Livingstone & Chang et al., 2009). It was found that health services need to be provided in the Chinese languages, be culturally specific, be included with preventive measures, and be accessible to the extended family (Figure 1-Janssen et al., 2009). Although these were identified factors among Chinese mothers in Canada, they have not been evaluated in the United States. The Chinese mothers may face different barriers in different countries, and strategies found effective in other western countries may not apply to mothers in the United States. Therefore, it is necessary to design interventions based on the identified barriers Chinese mothers face in the United States in order to effectively improve the current low breastfeeding rates.

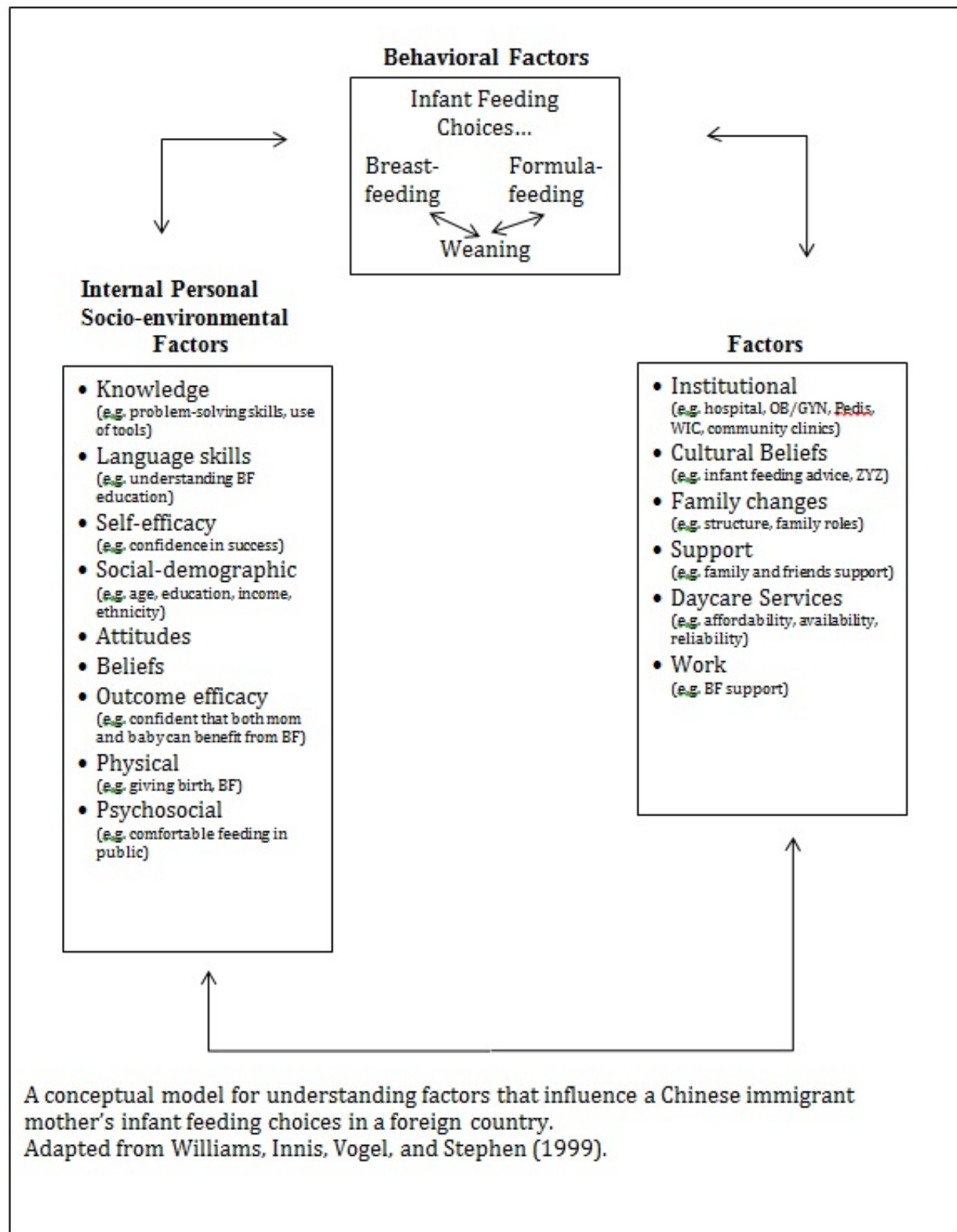
## **Second Generation of Chinese Immigrants in the United States**

Compared to the first generation, the second generation of Chinese in the United States is likely to have a better socioeconomic status due to higher levels of education and exposure to the western culture. Although the breastfeeding rates in the United States have steadily increased in the past years (Healthy People 2010), studies also found that among ethnic groups, those who had a longer residency and were born in the United States were less likely to breastfeed than those who were born in their home countries (Noble et al., 2010; Noble et al., 2008; Gibson-Davis & Brooks-Gunn, 2006; Celi et al., 2005). By increasing the breastfeeding rates and experience among the first generation of Chinese mothers, their positive experience may be helpful in encouraging more second generation to breastfeed their children as well.

## **Conceptual Model for Understanding Mother's Infant Feeding Decisions**

This study used the Social Cognitive Theory (SCT) to understand mothers' decision-making processes. The SCT is a theory that explains an individual as a product of three forces: intrapersonal features, environmental factors, and the behaviors engaged in (Bandura, 2012). The theory is helpful in understanding mothers' infant feeding decisions by demonstrating factors that play roles in the process. The conceptual model adapted from Williams, Innis, Vogel, and Stephen (1999) was tailored to understand infant feeding decisions of the Chinese immigrant mothers in the United States.

**Figure 1. – Social Cognitive Theory**



As illustrated in the model, *Socio-Environmental factors* are as important as a mother's *Internal Personal factors*. According to the theory, a change in any single factor can influence infant feeding choices as well as the mother's experience towards breastfeeding. At the same time, it requires all of the factors to be present in order to achieve a successful breastfeeding practice. As Williams et al. (1999) mentioned, some factors might have a stronger influence depending on what the decision is. For example, formula feeding was more likely to be the result of advice from healthcare professionals, whereas the decision to breastfeed was more based on a personal choice (Williams et al., 1999).

## **Research Objectives**

Through in-depth interviews with Chinese mothers who recently gave birth in New York City, this study will explore the following objectives: 1) perceptions of different types of infant feeding methods, 2) services within the healthcare system including government nutrition programs, 3) current cultural beliefs pertaining to infant feeding and maternal health, and 4) types of support mothers receive related to infant feeding after migrating to a foreign country.

## **Methods**

### **Protection of Human Subjects**

This qualitative research study was approved by the Syracuse University Institutional Review Board on June 29, 2013 and the first interview was conducted on July 14, 2013. The informed consent (Appendix 1 & 2) was read to each participant by the researcher and signed by each participant before the beginning of the interview process. Any information collected from the participants that could identify them was kept confidential and was de-identified by the researcher.

## **Recruitment Criteria**

To be eligible for the study, participants had to meet the following inclusion criteria: 1) first-generation immigrant mothers from China, 2) at least 18 years old, 3) have given birth to a live infant within the previous 12 months and 4) currently residing within the five boroughs of New York City. First generation immigrants were the desired participants as they were thought to face more challenges in making infant feeding decisions and raising young children in New York City due to their low socioeconomic status and language barrier (Muennig et al., 2012).

Limiting the age range of infants ensured the data gathered represented the current trends.

Through referral, one mother who gave birth nineteen months ago outside of New York City was introduced to the study. IRB revision was made to include her interview. Mothers were excluded if they had health conditions that prohibited them from being able to breastfeed.

However, the researcher did not encounter mothers with any of these conditions.

## **Recruiting Attempts**

Several local community organizations in the Chinatown area and one hospital were contacted to seek approval to recruit participants by attending events during the summer. These community organizations were thought to be able to refer potential participants for interviews based on their involvement in the community and locations in Chinatown. Offices of the four organizations were visited in May 2012. They were not able to assist in recruiting as the events were not well-attended by postpartum mothers.

Beth Israel Medical Center is located in Lower East Side of Manhattan. Based on a phone conversation in December 2011, the hospital had approximately 3,900 patients a year, of which 30% were Chinese patients. The initial plan was to recruit participants through the hospital's referral. Later, it was decided that the plan was not possible due to the fact that the

patients belonged to their individual obstetrician and not the hospital, as well as the liability and contracts that were involved.

Charles B. Wang is a non-profit community organization located in Chinatown in Manhattan and Queens that serves predominantly low-income Chinese immigrants (Kwong et al., 2008). The initial plan was to recruit participants in the pediatric clinic's waiting room once or twice a week for one month during the summer. After the site-visit with the registered dietitian and emails to the director of the pediatric department, the researcher was informed that they were not able to open for recruiting due to the lack of supervision during the recruiting process.

One of the objectives of the current study was to explore the assistance provided to Chinese mothers; therefore, the WIC program was selected as a recruitment site. After reaching out to them, the reply from the program director at the Gouverneur Hospital in May, 2012 was that it was an inconvenient time for their facility to assist in the study due to renovations taking place in the summer. Another director at WIC in New York City was contacted in July, 2012 to inquire about recruiting participants. The director was unable to assist due to the liability and contracts that were involved.

The Chinese-American Planning Council is one of the largest organizations that provides various community services for the Chinese communities in New York City. They have branches in Manhattan, Flushing, and Brooklyn. The approval was granted from the organization to put posters (Appendix 3) at their location in Flushing to recruit potential participants. However, this recruiting method did not draw any participants to the study.

The three recruiting methods successfully used for the study included referral through acquaintances, in-person introduction in public places, and snowball sampling through participants. Approved flyers were used (Appendix 4). Due to the specificity of the inclusion

criteria, three methods were used concurrently to secure a sufficient sample size for this study. The option of an in-person interview or a phone interview was given to help alleviate participants' burden as some of them were the primary caretaker of young children or working fulltime. Recruitment occurred over a period of 8 months from July, 2012 to February, 2013, yielding 23 interviews. No incentive was provided for participation.

The first few participants were recruited through acquaintances. Once potential participants were referred and agreed to be interviewed, the researcher scheduled a time and interview method that was convenient for the participant. All of the referred participants preferred a phone interview (n=8). As interviews continued, snowball sampling was used for current participants to refer among their friends, colleagues, families and other groups of acquaintances. This recruiting method drew two additional participants.

The IRB amendment was approved to recruit potential participants in the public areas such as parks and local communities. Potential participants were those who appeared to be Chinese and had a young child or an infant stroller. Once they were identified, the researcher approached them and introduced the study with the approved scripts (Appendix 5). Participation was always emphasized as voluntary and consent was obtained before the beginning of each interview. Most of the participants recruited through in-person introduction chose to conduct the interview on site while three others chose to do the interview at a scheduled time.

### *Pilot Test*

Prior to interviewing the full sample, interview questions were pilot tested with one Chinese-speaking mother who had given birth within the past 12-months in the United States. This was done to ensure questions were understandable and that the interviewee could interpret questions appropriately.

## **Interview Procedures and Data Collection**

### *Interview Procedures*

Each interview took approximately 30-60 minutes to complete guided by semi-structured interview questions. The semi-structured format allowed the researcher to probe and explore more as needed. An Olympus Digital Voice Recorder was used to record each interview.

### *Data Collection*

Data were collected from two sources: a demographic questionnaire and a semi-structured qualitative interview question guide (Appendix 6). Participants could choose to be interviewed in Chinese or English. All of the sources remained the same throughout the study.

The semi-structured interview guide contained questions related to 1) current feeding habits, 2) changes in caretaking of infant after mother returning to work, 3) feeding methods at birth, 4) education and experience in prenatal care classes, 5) experience at the hospital, 6) experience at WIC program, and 7) existing cultural practices and influence on infant feeding and maternal health outcomes. For those who stated in the demographic questionnaire that they had previously given birth in China, an additional set of questions asked were related to 8) feeding methods in China. For those who stated during the interview that they would be practicing reverse-migration separation, the additional set of questions included 9) the decision of sending their infant back to China, 10) concerns and benefits from the practice, and 11) time the mother reunited with the child.



## **Qualitative Analysis**

### *Transcription*

Upon completion of the interview, the researcher transcribed the data. For transcription of interviews conducted in the Chinese languages, translation was done at the same time. The process of transcription yielded 162 pages of qualitative data in 11-font size. The first 6 interviews were transcribed using iTunes and the following 17 interviews were done using Express Scribe with an Infinity Foot Control Pedal. All interviews were transcribed verbatim. Each interview was rigorously coded in English and then verified by a co-investigator. Data were further analyzed using qualitative methods.

### *Translation*

Based on the interviewee's preference, interviews were conducted in Mandarin (n=11), Cantonese (n=4), or English (n=8). After the transcription of interviews in Chinese was complete, efforts were made to ensure contents from Chinese to English were translated accurately with validation by one of the three translation validators. A Cantonese-speaking person validated interviews in Cantonese and interviews in Mandarin were divided between two Mandarin-speaking persons. A confidentiality form was signed by each person before they listened to the interviews (Appendix 7). Each translation validator randomly selected 20% of content from the interviews.

### *Coding*

Qualitative analysis in this study was done on the computer software program QSR NVivo (version 9). The software facilitated the coding process by categorizing, organizing and tracking interview data electronically, making the linkage between the codes and the original interview transcripts more accessible. The initial codes were guided by the objectives of the

study. The coding process generated 26 codes. As the coding process proceeded, additional codes and sub-codes were developed in order to capture emerging themes and perceptions. The grouping of the sub-codes under the same categories made the qualitative interview data organized. Under these initial codes, 135 sub-codes were further developed.

## **Results**

### **Demographics**

Twenty-three mothers were interviewed between July 2012 and February 2013. The majority of the participants (n=21) were born in China, with one born in New York City and one in Vietnam. More than half (65%) of the interviews were conducted in the Chinese languages: 48% (n=11) in Mandarin and 17% (n=4) in Cantonese, while 35% (n=8) were in English. Among all of the participants, 57% (n=13) of them were WIC users. Twelve participants (52%) were first-time parents. Twelve (52%) lived with parents, in-laws, other relatives, and/or roommates and eleven (48%) participants lived with husbands only. Among the 52% of participants who lived with parents, in-laws, other relatives, and/or roommates, three of them lived separately from their husbands. In terms of reverse-migration separation, three indicated that they were planning to send infants back to China. Demographic data are presented in the following page.

**Table 2. – Demographic Data**

All	Total (n)	% of Total
	23	
Breastfeeding Rates		
Ever	19	83
Exclusive Formula	4	17
Age		
21-30	12	52
31-40	10	43
Not Disclosed	1	4
First-time Mother		
Yes	12	52
No	11	48
Marital Status		
Live with Husband Only	11	48
Live with Relatives and/or Roommates	12	52
Annual Household Income		
<20k	3	13
21-30k	5	22
31-40k	2	9
60k+	11	48
Not Disclosed	2	9
Occupation		
Stay-at-home (Temporary)	11	48
Stay-at-home	1	4
Service Industry	4	17
Non-Service Industry	7	30
Education Level		
High school or less	10	43
Associate Degree & College	8	35
Graduate or above	4	17
Not Disclosed	1	4
Years in US		
10+ Years in US	11	48
5-10 Years in US	3	13
<5 Years in US	7	30
Not Disclosed	2	9
WIC User		
Yes	13	57
No	10	43
Reverse-Migration		
Yes	3	13
No	20	87
Interview Language		
Mandarin	11	48
Cantonese	4	17
English	8	35

## Results

The results are presented in the order guided by the 4 objectives of the study: 1) perceptions of different types of infant feeding methods, 2) services within the healthcare system including government nutrition programs, 3) current cultural beliefs pertaining to infant feeding

and maternal health, and 4) types of support mothers receive related to infant feeding after migrating to a foreign country.

## **PERCEPTIONS OF BREASTFEEDING**

### **Benefits of Breastfeeding**

When asked the reasons why mothers chose to breastfeed their infants, participants stated 1) breast milk improved and strengthened an infant's immunity, 2) breast milk is the best and is irreplaceable, 3) special bonding, 4) good for mothers, 5) meeting all the nutritional needs, 6) settling infant at bedtime and traveling, and 7) gentle to infant's stomach. The sources of knowledge related to breastfeeding for mothers who breastfed their infants were mainly from the Internet and books; these data are also discussed in this section.

#### Breast milk strengthens the infants' immune systems

Almost half of participants (n=11) mentioned the reason for breastfeeding was for a better immunity for the infant, especially in early infancy. A second-time mother (31-40 y/o) believed breast milk was especially important early on:

*"To me, you know my baby just came to this world, and I wanted to give them something good to their body, to jumpstart their body, I didn't wanna get them formula."*

Despite the nipple pain from breastfeeding, a first-time mother (21-30 y/o) tolerated the discomfort because she also believed that breast milk was especially crucial for the first 2 weeks specifically:

*"In the beginning, on the first day, because I was hurt, it was painful, so I thought I could set a goal to bear for at least 2 weeks because breastfeeding for the first two weeks is very good for the baby's immunity."*

Seeing the positive results from the previous births supported some mothers to nurse their second infant again. A second-time mother (31-40 y/o) believed breast milk prevented her first child from getting illnesses and was supported by comments from her friends:

*“I think by seeing the benefits of breast milk for my first child also helped me to do this time too because um I mean I don’t know if for sure but he’s 2 but he’s been quite healthy, so thank goodness you know. So a lot of people do say ‘oh yah because he’s breastfed his immune system is stronger.’ Um while other kids might have a lot of other problems, he seems to be able to um... not get sick when they get sick. Like his immune system probably helped him to avoid certain illnesses that other friends get you know other babies.”*

One mother believed her caesarean birth would weaken her infant’s immune system, so she used breastfeeding to compensate that. She explained the knowledge was learned from her previous birth in China:

*“I want to first feed for 2, 3 months to enhance his immunity.... For children who were born with C-section, their immunity is not as good.... I have always known that since I was in China. Because I already had one, so I have the experience.”*

#### Nutrients in breast milk are irreplaceable

Breast milk was described as “the best” food for infants. A second-time mother (31-40 y/o) believed breast milk was the best and unique because it was made for human consumption:

*“I did my research and I know that breast milk is best because you know breast milk mainly... I mean it’s made for human, human babies and I know it had the best nutrients that formula cannot mimic at all. It might be similar in a way but breast milk is just unique.”*

Another second-time mother (31-40 y/o) who breastfed her infant also believed that the nutrients in breast milk were unique:

*“... there’re tons of nutrients that in the breast milk that are supposedly not in your know regular formula.”*

Similar belief helped a mother (21-30 y/o) to set the goal for exclusive breastfeeding for 6 months:

*“I would give birth, plan to breastfeed from the beginning... after all that, all that information breast milk is the best food for our kids instead of formula so that... that’s my mindset was to breastfeed her since I was pregnant...”*

### Special bonding between mother and infant

Some mothers experienced a special bonding with their infants while nursing. A second-time mother (35 y/o) described the feeling of closeness as something she had never experienced before:

*“... it’s a weird experience but it’s a it’s kinda funny like it... I can feel the let down when the milk really comes out after the first few sucks and then it’s this funny feeling that I feel like um... I don’t know it’s just a very real closeness with him and he’s looking at me and me looking at him and he’s snuggles in and it’s... and it’s especially when we’re skin to skin then it’s like... I don’t know it’s just very hard to explain but it’s this intense feeling of closeness and like love I don’t know but I’ve never felt it in any other way like in any... I don’t know... it’s really hard to explain but it’s definitely I guess bonding um... it kinda makes me feel when I’m nursing I get a little like tired too but... I don’t know it’s all these hormones that are released when you’re nursing and stuff but definitely it’s like an intense feeling of closeness. I guess that’s the best way I can explain it.”*

Another mother (31-40 y/o) hoped such bonding would increase her breast milk supply:

*“And I felt like this special bonding um with that experience as well as this having that direct contact we may increase the milk supply I don’t know if it’s true but I hope it will.”*

### Beneficial for Mother

Some interviewees believed breastfeeding was something good for the mother. A first-time mother (31-40 y/o) said the emerging trends to promote breastfeeding was that this practice was also beneficial for the mother:

*“I think there’s a real push for breastfeeding these days because a lot of the books, they really stress the benefits of the baby getting breast milk. It doesn’t only benefit the baby but benefit the mom as well.... I’m surrounded pro-breastfeeding.”*

Another first-time mother said breastfeeding along with a reduction in calorie intake helped her return to her pre-pregnancy weight:

*“Basically at 3-week, my weight returned to before I gave birth. Also because I’m breastfeeding, breastfeeding takes up a lot of energy, takes up a lot of calories. So breastfeeding plus the way I ate, soon my weight returned to before I gave birth.”*

### Meeting all the nutritional needs

A second-time mother (35 y/o) believed that the breast milk satisfied her infant in various ways and its composition changed according to the infant's needs:

*"... it's like all the perfect nutritional needs are met you know all the... whenever they're hungry then it's there, it's easy and then I've read that the composition of the milk changes according to needs of the baby and stuff too so and then there's like the foremilk and the hind milk and one is like crunching their thirst and then there's all the fats and nutrients and stuff."*

### Breast milk was better for digestive system

Even though seeing her nieces and nephews grown up healthy with formula, a second-time mother (31-40 y/o) who exclusively breastfed both her infants for at least 4 months noticed they were never constipated:

*"They [her nieces and nephews] never got breast milk, they're really healthy but one thing I know is they always get constipated. Yah, even after now they're... some of them are 8 years old, 10 years old, they still suffer from constipation."*

### **Benefits of Breast Pump**

The practice of using a breast pump was found among some mothers who were breastfeeding. Reasons included to 1) increase milk supply, 2) ease discomfort associated with engorgement, 3) visualize quantity infant received, 4) allow others to feed the infant, and 5) achieve long-term breastfeeding. The topic of pumping breast milk at work is discussed separately in the workplace support section.

### To maintain breast milk supply

A breast pump was reported to help mothers increase milk supply. A mother who originally planned to nurse directly found out she was not producing enough milk and decided to use a manual pump to increase her supply. Her hands were hurting from using the manual pump and also her daughter was dehydrated soon after discharge and had to come back to stay in the

NICU for two days. At the hospital, the nurse taught her how to use an electric pump to provide breast milk for the infant and also keep up her supply while her daughter was in the NICU:

*“So maybe that was when the first time I started using the pumping and then because she was not at home right away so there was a need for me to you know to try to enhance the milk supply by using the pump.”*

#### To visualize amount infant received

A first-time mother (31-40 y/o) experienced low breast milk supply from the beginning and also her infant tended to get tired of sucking very quickly. She decided to pump to know the amount of breast milk her infant received:

*“... she gets tired of sucking very quickly so I don’t have her teeth latched on... I had her latch on I think it was within the first hour that she she came out of me so she’s a good latcher, it’s just that she doesn’t continue to suck... but you know... there’s nothing or much coming out.”*

#### To allow others to feed the infant

The breast pump was perceived as a stress relief tool. A mother who suffered from tendonitis and carpal tunnel had trouble holding her infant. She pumped so others could do the feedings for her and allow her wrist to heal. As a stay-at-home mother, even after her wrist was healed, she still preferred to pump and have others do the feedings for her sometimes:

*“I just feel like I had more freedom to do it um... happy babies, mommy’s happy so... it’s a win-win situation for us.”*

#### To achieve long-term breastfeeding

In order to maintain milk supply and continue to provide breast milk for their infants after their maternity leaves, several working mothers pumped at work. A second-time mother who pumped for her first infant planned to do the same for her second one:

*“... if I don’t nurse for my day is 8 hours, an hour commute on each end so it’s 10 hours of being away from her or and him eventually um and if I don’t pump I wouldn’t be able to keep you know enough milk probably so.”*



## Decision to Breastfeed

### Setting goals for breastfeeding

All of the mothers who breastfed their infants at some point made the decision prior to giving birth. Whether the experience was a successful one, many mothers set goals for breastfeeding. Despite the pain, a first-time mother still set goals to continue to breastfeed:

*“If I could bear it [the pain], I would continue to breastfeed, for example, to the next goal of 6 months along with supplement. And then after getting supplement, see if I can stand for a year. I think around one year is about right. I don’t plan to breastfeed when the baby is too old. I think one year... one year is just right... for me. At one year, I will let the baby gradually stop.”*

A second-time mother (31-40 y/o) who exclusively breastfed her infant for around 7 to 8 months believed that most mothers set goals for breastfeeding:

*“... I guess it’s just um it’s a goal, I think all mothers... at least um... an educated mother um tends you know most... most... I don’t wanna generalize but I guess most of um... you know have a goal to breast breastfeed.”*

In order to achieve long-term breastfeeding after returning to work, a second-time mother (21-30 y/o) who successfully exclusively breastfed for 6 months started pumping 2 or 3 months earlier to get used to pumping:

*“I knew what I needed to do... so I was already pumping way before... way before I started back to work so I went back to work so I was already pumping to feed her the first 2, 3 months.”*

Another second-time mother (31-40 y/o) was expected to be travelling for work. In order to achieve her goal for breastfeeding for 8 months, she had stored a two months supply of breast milk in the freezer by the time her infant was 6 months old:

*“... with those, I’m hoping it will last another 2 months, you know, altogether for around 8 months. To my older daughter, she was you know on the breast milk for approximately 8 months... that just makes it easier that I don’t have to pump while I’m you know on the road.”*

Setting goals for breastfeeding was also used as a stress relief. A second-time mother (31-40 y/o) expected pumping to be difficult, so she set a maximum duration for herself:

*“... it’s not an easy job so I knew I was going to do it max 6 months. So just you know I said to myself ‘let me put my best foot first for 6 month.’”*

### Committed to Breastfeeding Despite Difficulties

The first-time mother (21-30 y/o) who experienced extreme pain continued to nurse her infant:

*“When I [the nipples] was wounded, I thought I could pump the milk so the baby didn’t have to suck if I pumped breast milk using the pumps. But because there’s already a wound there, the blood was pumped along with it and the color of the milk changed to pink. It was too scary. I fed until the baby was finished sucking and when he latched off, there’s blood all over his mouth.... If I could bear it, I would continue to breastfeed.”*

A second-time mother (31-40 y/o) recognized the challenge of pumping at work and felt it was easy to maintain once it got started:

*“... going back to work, you don’t have the luxury of home and then carrying the pumps around and um making sure there’s a refrigerator that you know to store the breast milk. You know all of that is a challenge in the in the work environment um but you know you just have to work through it and commit to doing it. Once you commit to doing it then you do it for as long as you can. But it’s definitely challenging I think I think all work mothers have a challenge.... It’s hard it’s hard to get started but once you do then it’s easy to maintain.”*

Even though she was able to exclusively breastfeed both infants for at least 4 months both times, another second-time mother (31-40 y/o) admitted that it took a lot of effort and therefore she understood why some mothers gave up and used formula:

*“It takes a lot of effort like at the beginning maybe the week you have to do it every 2 to 3 hours just to get a little bit supply so I could understand that some mothers they get really frustrated in the first week or so when they don’t see their milk coming out and they start freaking out and they want to supplement with formula and then they realize that ‘hey, I’ll give you formula so much easier than pumping it every 2 to 3 hours’, they might change their mind and they might start giving formula to the children, to their babies.”*

When asked how she managed to wake up every 2 to 3 hours at night to pump, she answered it was her commitment to maintain the supply of breast milk that helped her overcome the challenge:

*“I just did it because of the baby because I didn’t want to decrease my supply. Yah, that’s why I said... pumping it’s not for everyone, you really need to commit to it.”*

### Satisfaction from Breastfeeding

For those who met their goal for breastfeeding, some described the feeling as “happy”, “great”, “success”, and “proud”. A second-time mother (31-40 y/o) continued to pump at work despite difficulties and was satisfied to be able to achieve her goals both times:

*“... the challenge to book that room around other pumping moms and around meetings and so forth, but it was fine I did it um... made it to the close to 8 months mark, so I’m happy.” “... my goal was minimum 3 months... you know the first 6 months would be perfect and anything beyond 6 months is gravy so with my first daughter like I said I made it to almost 10 months and with my son I made it to about 8 months um exclusively breast milk so I think I’ve you know I succeeded my goal both times with both children.” “I feel great... I’m glad I did it um I’m glad for the second child that we do the same.”*

Another second-time mother (31-40 y/o) who nursed her first infant for over 12 months and was breastfeeding her second one at the time of the interview felt especially successful with the first child as it was a more challenging experience due to being a new parent. She was glad that she persisted and breastfed for as long as possible:

*“I felt like there’s success like I feel like especially with her (the first baby) ‘cause it was so hard when we first started but then it became such like a part of everyday and it was just nice.” “I’m glad I didn’t give up at the beginning you know when it was so hard so. Yah I’m really really happy with that experience... I’m glad we persevered ‘cause it wasn’t easy but it was totally worth it and I’m glad we did that.” “I’m glad we nursed for as long as we could too so. It was just right for both of us.”*

When asked about the motivation for her persistence, a second-time mother (31-40 y/o) described herself as a proud mother:

*“I saw my baby growing like so big and they were so chubby and I was so proud of myself because they were chubby because of the breast milk not because of the formula.”*

## **Sources of Knowledge for Breastfeeding Mothers**

Many mothers described using various sources of information to learn about breastfeeding. The Internet was a popular source. Some of the websites mentioned by mothers in this study included Dr. Sears, Kelly's Mom, Baby Center, Medline, and Mayo Clinic. Some mothers considered the Internet as the most influential source of knowledge for them. One mother explained: *"Because you can find all kinds of information on the Internet and then there could be a summary."*

Another mother said there were forums of infants born in certain month of the year so she liked to read and learn from other mothers with infants the same age. Books were also common. One mother said she read the book "What to Expect When You are Expecting" and one mother had the "Womenly Art of Breastfeeding" book by the La Leche League.

Although using the Internet for information was popular among the mothers, it was not always able to provide a personalized answer. A mother felt the answers she received on the Internet were not personalized to her questions: *"With the website, I have to look for it and may or may not you know be answering exactly what I was looking for"*. She filled in the knowledge through seeking advice from a lactation consultant she had access through work: *"... it's not so much about better or worse, it's really a big complement one another."*

## **Negative Factors related to Breastfeeding**

The breastfeeding difficulties reported in this study included 1) perceived low breast milk supply, 2) lack of breastfeeding experience, 3) latch-on difficulty, 4) physical discomfort, 5) interfered day-to-day activities, and 6) breast milk rejection after formula and solid were introduced.

### Perceived Low Breast Milk Supply

All of the mothers interviewed reported low breast milk supply at some point. One of the concerns was not being able to provide enough for the infant. A first-time mother (21-30 y/o) believed her caesarean birth delayed the production of breast milk:

*“If you had a natural vaginal birth, it might be easier for the breast milk I think. It might be more difficult because of the C-section, the breast milk might be slower.”*

A first-time mother (21-30 y/o) knew her infant was not full from her breast milk based on the measured amount: “... breast milk was only around 1oz, and he must drink 3oz, so I had to feed him formula.” Some identified it based on the infants’ sleep patterns. A first-time mother who was breastfeeding her infant for 2 months added formula and explained:

*“... my breast milk was decreasing and then he wasn’t full um sometimes I couldn’t tell whether he was full or not ‘cause sometimes he falls asleep in the middle of the feeding so I thought he was full but then he woke up earlier than he was supposed to so now I know it was because he wasn’t full then.”*

A mother (31-40y/o) judged her milk supply based on the size of her infant. Before realizing the infant was actually healthy, she felt guilty because she thought her infant was skinny:

*“I had a skinny baby before so I was like ‘eh’ and I somehow felt like I was not a good mother or something like that.”*

The concern of not making enough milk caused emotional stress for some parents. After trying for 2 months, a first-time mother (31-40 y/o) felt especially guilty the day she switched to formula and still questioned whether she had tried enough:

*“I sometimes think maybe if I tried even harder you know if I just... maybe pump more than I mean I did pump... but maybe if I increase the frequency even more... you know. And maybe things would have been different.”*

Since low breast milk was such a common problem around her friends, she also thought that it was impossible to have enough breast milk for an infant: “I don’t think it’s true that you’ll have enough to feed the baby.”

A second-time mother (31-40 y/o) who used mostly breast milk for 6 months for her infant and was breastfeeding her second child at 1.5 month noticed a decrease in her supply and was concerned:

*“... with my first baby for the first 6 months most of the time he was fed breast milk but I wasn’t pumping enough I didn’t have enough supply of breast milk so um... I was also doing the formula when there wasn’t enough. And the second one, um so far I have enough but the problem is that the last few pumps the less supply so I don’t know if eventually the supply will go down and you know I have to put him also on formula also.”*

A second-time mother (31-40 y/o) said to compensate with formula was necessary: *“If there’s no breast milk, then there’s nothing I can do.”*

### Problems latching-on

Difficulty latching-on was reported during interviews. A first-time mother said the extreme pain and eventual bleeding was caused by difficulties with latching on:

*“I didn’t know how to feed and the baby doesn’t know how to eat, which caused the nipple wounded, bleeding and stuff.”*

A second-time mother tried various positions with the infant but still had problem latching on. In order for her infant to get the breast milk, she had to use the breast pump and feed with a bottle:

*“I had no choice because he didn’t wanna latch on so um other than I would just do formula but I... I rather do breastfeeding so that’s why I use this method.”*

Another second-time mother who exclusively breastfed both her infants for 6 and 4 months respectively also had difficulties latching on, even during the second time:

*“... second one was easier, but you know what, even when you know it’s still hard to breastfeed. It’s really hard ‘cause sometimes you get frustrated because the baby can’t latch on.”*

### Lack of breastfeeding experience

Some mothers reported that the lack of breastfeeding experience was the reason for using formula. A first-time mother (21-30 y/o) planned to breastfeed her infant from the beginning but faced more challenges than expected:

*“In the very beginning, originally I wanted to feed breast milk, but at the hospital, still haven’t... because I didn’t have the experience and didn’t know how to breastfeed, that’s why I used the um... formula first.”*

When asked how the hospital staff helped her, she said that it was the practical experience that mattered the most:

*“... they just teach you by talking to you, it still relies on after you get home and do it yourself and then you’ll know it. In the beginning, I still didn’t know anything.”*

Another first-time mother described breastfeeding as “*difficult for the son and difficult for me*” as both she and the infant did not know how to cooperate with each other. A second-time mother who exclusively breastfed her first infant for 8 months had to often supplement with formula during the first 2 weeks: “... ‘cause it was my first child I was a little bit inexperienced um I didn’t really know.” The experience from the first time helped her initiate breastfeeding for the second infant:

*“But with my son, he was he was um... breastfed right from the beginning I was... like I said I was more experienced so I knew what to expect what to do.”*

### Physical discomfort associated with engorgement

Some mothers reported discomfort associated with breastfeeding. A first-time mother (21-30 y/o) described the pain associated with engorgement as “*hurt to death*”. She said the pain from this was more serious than during her vaginal birth, “*I didn’t even cry during labor, but I cried from bloating*”. She had to seek medication to make the bloating to go away:

*“And then the next day I went to the doctor to get the Western medicine. I took both Eastern and Western medicines. I ate everything.”*

Another second-time mother also experienced breast pain. Even though she was able to exclusively breastfeed for 6- and 4-months for both of her infants, she described the discomfort as something she never got used to it:

*“It was really really uncomfortable when you’re pumping or breastfeeding. I feel discomfort 24/7. It bothers me so much. Yah, a lot of people say ‘oh you’ll get used to it’, but you know what I never got used to it. Yah, it’s like it bothers you and the more you without pumping, like after the 3 hour mark, if you don’t pump you’ll feel really uncomfortable because your boobs are like getting bigger bigger and bigger and you just need to empty it to feel some relief.”*

A first-time mother (31 y/o) used the pump to release discomfort associated with bloating when it was not the time to feed yet:

*“... when I felt my breasts were very bloated and it wasn’t at feeding time yet, I would use breast pump to pump it first and then store it in the refrigerator.”*

#### Pumping interfering with day-to-day activities

While pumping released discomfort associated with engorgement for some mothers, finding a place to pump in public was not always easy. A second-time mother who pumped and fed breast milk to her first infant for 6 months was doing the same for her second child at 1.5 months at the time of interview. She remembered the reason she was able to pump when she went outside was because she knew people who lived in the areas she was visiting and allowed her to pump. It explained why pumping might be difficult for some mothers:

*“I had to pump like once or twice if I have to go to the doctor um well I was lucky ‘cause my doctor is in Chinatown that I could go up and say ‘let me pump before I go home’ because I feel very engorged so it’s very uncomfortable if I don’t pump. But I would think that if I had to go somewhere else that I don’t have a friend or relative around then it would be very difficult like I’d probably have to do it in the bathroom which is not very sanitary, you know.”*

After seeing her cousin looking for places to breastfeed, a first-time mother thought the practice was inconvenient:



*“... she used breast milk and then if she goes out with me for a day, if she breastfeeds it’s inconvenient. If it’s outside, she needs to breastfeed outside. I think it’s very inconvenient.... At shopping mall like that.”*

The way pumping was experienced differently between the summer and winter was reported by one mother. She explained the reason she was pumping less for the second one was because of the weather and the concern with keeping the milk fresh:

*“... I just couldn’t bring the pump with me because it was hot outside. So the milk would go bad and um... it was mostly because it was summer... I just wanted to be more outdoor and without coming home every 3 hours or so. Yah with my son it was different because it was in the winter.”*

Another inconvenience with using a breast pump was the time required to prepare the equipment. Although she was able to pump for 6 months for her first infant, the second-time mother (31-40 y/o) explained the procedure to sanitize the equipment took longer than the actual pumping, which was very time-consuming:

*“... the pumping itself might take 2 minutes, you know half an hour. But there’s a lot of preparation before that, you have to wash all the bottles, sterilized them, dry them, and you do the same thing afterwards. And then it feels like every time you turn around it’s time to pump you have to get all the parts ready.”*

A mother who had difficulty having her infant latch on to her chose to use formula because she felt that pumping was also time-consuming:

*“... it’s more convenient you know when using formula ‘cause breast milk you know like I said he doesn’t take it directly from my breast, I have to pump it every time. It’s too much time consuming.”*

### Restrictions during lactation

Other inconveniences associated with breastfeeding included breast milk leakage, maternal dietary restriction and inconvenience to others to take care of the infant. A first-time mother (21-30 y/o) who chose to use formula was told that breastfeeding was inconvenient for going out because lactation would cause unintentional leakage of breast milk:

*“... people said if you breastfeed, if you have to go out, it’s not very convenient, the milk will leak out, it’s not convenient.”*

Another first-time mother used all formula to avoid diet restriction and allow others to take care of her infant:

*“If you breastfeed, there’s a limitation on what you eat. If you let other people to take care of the baby it’s inconvenient too.”*

Another first-time mother who was exclusively breastfeeding, added formula at 6-months and explained going out was one of the reasons:

*“Also, sometimes I go out, walk and shop, breastfeeding is not very convenient, so I added formula for him gradually.”*

#### Rejection for breast milk after introducing formula and solids

The rejection for breast milk after introducing formula and solid foods such as infant cereal was reported. A mother said that her infant would not take the breast milk directly and only if it was mixed with cereal. In order not to starve the infant, she changed to use formula and infant solids completely, and added yogurt as substitution for milk:

*“... if it’s breast milk, he didn’t like it even though I let him be hungry for a while so there’s no other option so I thought in terms of milk once or twice a day breast milk and then during the day mixed the formula with solid foods, and then also added some yogurt for replacing the milk.”*

### **PERCEPTIONS OF INFANT FORMULA**

#### **Benefits of Formula**

The perceptions of formula were explored in this study. It was found that among some mothers, formula was perceived to be as healthy as breast milk and it contained nutrients that were not found in breast milk. Some expected cessation would allow lactating mothers to lose weight. Ready prepared formula was considered more convenient than powdered formula and formula was more convenient than solids.

#### As healthy as breast milk

The perception that formula was as healthy as breast milk was reported. A first-time mother (29 y/o) expressed she had delayed production of breast milk. Even though she was planning to breastfeed her infant originally, she decided to use formula instead because the formula nowadays was good and that she used the type that was “*closet to breast milk*”. Her infant was experiencing stomach gas during the first two months but she described the different types of formula available to match the infant’s health condition was “*quite good*”. A mother (24 y/o) who chose to use formula from the beginning believed that formula was enough for her infant’s nutritional need. “... *formula is already 90% equal to breast milk, so it’s also enough*”. She evaluated the nutritional needs based on other children on formula and her daughter’s weight increase:

*“The children are quite healthy from eating it like my daughter she doesn’t have any discomfort from drinking the formula and also the weight is increasing.”*

Even though breast milk was considered to have more benefits than formula, a second-time mother (31-40 y/o) who breastfed both her infants believed formula was still good enough.

When asked whether she had concern adding formula to her infant at 3-month after returning to work, she said:

*“I have friends that um have babies only on formula exclusively... they’re doing well, so I mean even though there should be benefits from breast milk over formula but I think you know formula should be good enough.”*

#### Formula contains nutrients breast milk does not have

A first-time mother (27 y/o) who exclusively breastfed her infant and added formula at 7 month perceived formula and breast milk as something that “*balance each other*”. She added formula to her infant’s feedings at 6-months because she believed her breast milk was no longer enough for her infant. “*But now perhaps it’s not enough for him now, so I dissolved some formula milk and sort*”. She found out her infant needed more nutrients other than her breast

milk during their visit to the pediatrician's office when her infant was given a vitamin D droplet. She said *"So if it was formula, it doesn't need this"*. She planned to stop breastfeeding when the infant reached one year old as she expected her breast milk would not be able to satisfy her infant's need:

*"So around 1 year old, one is that he needs more nutrients, another is that my breast milk doesn't have anymore of what he needs. So that's why [breast milk] can be cut out"*.

Her decision to switch to regular milk at 1 year old was based on the perception that

*"breast milk is not that nourishing any more."*

#### Formula helped infant stay in sleep

A mother who experienced low milk supply believed formula helped her infant feel full and sleep longer:

*"I fed formula at night because... the baby sleeps longer at night when fed formula... easier to get hungry if she was on breast milk. So normally we feed formula at night."*

#### Ready prepared formula is most convenient

A first-time mother (22 y/o) thought that ready prepared formula was more convenient than powder when going out as it could be fed directly:

*"... if you go out, ready prepared formula would be more convenient, 'cause you don't need to bring water... just give him directly, don't need to heat it up, give him directly then it's okay. Formula powder, you need water... need to heat it up, not very convenient."*

Ready prepared formula was also used when her infant woke up in the middle of the night: *"He wakes up again after we go to bed, if hungry, we'll feed him ready prepared formula."* Another mother (32 y/o) also used ready prepared formula at night and described such a method as less time-consuming: *"Well you can just you know... get the ready-to-use one and you just feed him like that..."*

### Formula allows mother to lose weight

Besides the need for increased nutrients as the infant grows, a first-time mother (27 y/o) also mentioned the reason to add formula was because the diet she consumed during the lactation period was not helpful for her to return to pre-pregnancy figure. She also mentioned that other mothers she knew used formula instead of breastfeeding to keep their breasts from dropping.

### Formula as stress relief

For some mothers who breastfed their infants, formula was used as a stress relief. A mother who initiated breastfeeding chose to use formula at night at the hospital so that she could rest.

*“I breastfed my both babies from day one since they were born. But at the same I also um... did formula for night ‘cause I didn’t wanna keep the baby with me so I could rest at night time so I told the nurse that they could feed my baby formula”.*

She exclusively breastfed her first and second infant for 6 and 4 months respectively. She thought other mothers should not feel bad about using formula.

*“I know that some mothers they just feel really guilty and they wanted to kill themselves just because they give formula to their children but I really didn’t feel that way.”*

Another mother used formula as a stress relief associated with not having enough breast milk for her infant. She nursed her first infant for 8 months and was still nursing the second one at 3.5 months at the time of interview:

*“... the formula supplement um is there as the stress relief you know it’s just relieving the stress associated with the fact that I might not be producing exactly at 100%... it’s there so that you know one of his meal would be um with the formula so that... it doesn’t you know give me that added stress that every time I I pump or I feed him it has to be at the certain amount.”*

### **Negative Effects from Using Formula**

Negative effects from using formula were observed in infants fed with formula and some mothers developed a sense of guilt from using it.

### Guilt associated with using formula

Despite the continuous efforts and trials, a first-time mother who planned to breastfeed her infant for 6 months was still not producing enough milk for her infant. She developed a sense of guilt the day she switched to use formula:

*“I feel really guilty the day that I switched her to formula even though I wasn’t getting breast milk. Sometimes I still feel guilty that I didn’t give her 6-months breast milk”.*

Even though she tried, she still questioned herself:

*“maybe if I tried even harder you know if I just... maybe pump more than I mean I did pump but maybe if I increase the frequency even more... you know. And maybe things would have been better”.*

### Negative effects on infants

A mother (29 y/o) who had been using formula since early days observed some reactions from her infant which included bloating and gassiness of stomach, frequent bowel movements and prolonged feeding that lasted for 2 months:

*“Before 3 months, my son was not feeling well. At 1, 2 month, his belly had a lot of gas inside so he wasn’t feeling well. He was drinking the milk very slowly at around the first month... It took almost an hour to finish”.*

A second-time mother (35 y/o) and her husband suspected their infant had a milk protein allergy and thought it would drink more formula but turned out it was drinking less. She explained that was the reason she continued to nurse her infant at bedtime:

*“He hates the formula... we suspect he’s got a milk protein allergy so regular formula um he broke up the rash hives so we put him on soy formula um he hates it he won’t drink which the only reason why I’m continuing to nurse him at night. Um so I nurse him when I come home from work and even throughout the night he’s still waking up at night to nurse”.*

She exclusively breastfed for 7 months and added formula and solids as she began working again.

## Formula in the US vs. China

### Formula over breast milk

The perception that formula feeding was more common than breastfeeding in the US was reported in this study. A first-time mother who used formula since the beginning said *“In the US, normally all... other people they all drink formula”*. Another first-time mother developed a perception that as people live in the US longer, they tended to use formula.

*“I came to the park to chat with others, I discovered that a lot of them drank formula. Basically as long as you’ve been living here for a long time, they all... how to say it... the mom does it for body shape, because if you breastfeed, the breasts will drop, so it’s for body shape. Also the nutrition in formula in the US is very good.”*

She was exclusively breastfeeding but experienced low breast milk supply and added formula at 6-month. After knowing that many mothers she met in the park used formula, she described herself becoming more *“open-minded”* in terms of adding formula and that *“baby can still grow very well without breast milk.”* To compare breastfeeding between the US and China, her perception was that mothers only used formula in China if their health condition was not suitable for breastfeeding.

*“Here [US], basically it’s all formula milk directly they all basically don’t feed breast milk. Our side [China]... um... if... unless the mother’s condition is not well, they all use breast milk.”*

She said if she was in China, she would continue to feed breast milk exclusively and tradition was one of the two reasons. *“... it’s the traditional thinking that’s quite rooted, breast milk is considered the best”*. However, she also mentioned that safety was another reason. *“There’s too many problems with the formula powder in China, not trustworthy”*.

The reason to use formula in the US due to enhanced quality and safety was also reported by two other mothers who had previously given birth in China. They both breastfed their infants

born in China longer than the ones born in the US. Even though one mother recognized that: *“The nutrition of breast milk, nothing in any type of formula can compare to breast milk,”* she only nursed her second one born in the US for 20 days. She explained: *“I heard the formula in the US is very good, much much better than the ones in China, that’s why I just stopped. A lot of people are like that too.”* Another mother who also breastfed longer for her first infant in China was concerned with the quality of formula in China:

*“My first child was on breast milk for a year, right... ‘cause the formula in China is worry-some. So that’s why I breastfed longer.”*

The safety issue also concerned a mother who planned to send her infant back to China to be taken care of by relatives there, a practice called reverse-migration separation. The mother (24 y/o) who planned to send formula to her infant in China when the infant is sent back described the formula in China as *“inedible”*.

## **SUPPORT WITHIN HEALTHCARE SYSTEM**

### **Breastfeeding Support at the Hospital**

#### Breastfeeding support

The breastfeeding support was found available at the hospitals through education and patient care. A mother said the hospital where she stayed provided three to four breastfeeding classes with flexible schedules and these were mandatory for all postpartum mothers to attend before discharge. Infants were brought back to the mothers within two hours and they were recommended to stay together for a certain period. At bedtime, infants could either stay in the mothers’ rooms/maternity ward or be brought back to the nursery. A mother reported that all of the nurses at the hospital where she stayed were trained with lactation education and they helped her to get her infant in position for breastfeeding. Patient care was found to help initiate



breastfeeding. A first-time mother did not expect to be able to initiate breastfeeding within 1 hour after giving birth, but the nurse encouraged her to try and she succeeded:

*“I was still thinking maybe right after it was born there’s still no milk or not produced yet, and then the nurse told me to just let him suck it, and then there was more as he sucked more.”*

The hospital where a mother gave birth encouraged breastfeeding by bringing the infant to her room every 2 to 3 hour:

*“They would bring the baby to you according to the schedule and woke me up to nurse. When it was almost the time, they would take the baby back.”*

Besides when the infant was hungry, the hospital staff also brought the infant to her at night when it was hungry:

*“... when I sleep they bring the baby to the monitoring room and then if the baby is awake and looks like he wants to eat and then they would push the baby back to me and let me feed him.”*

A first-time mother was hurt from breastfeeding and the nurses provided assistance to her:

*“... because they knew I was breastfeeding, they had specialized medical staff to come and teach me how to do it.... Because my nipples were sensitive... it hurt when the clothes touched the nipples.... They provided some cream and also some covers that protect the nipple.”*

Education on using a breast pump was also provided at the hospital. A mother who originally planned to nurse directly found out that she was not producing enough milk and decided to increase her supply by using a manual pump. Later, her hands were hurting from using the manual pump and her daughter had to stay in the NICU for two days due to dehydration. At the hospital, the nurse taught her how to use the electric pump to provide breast milk for the infant and keep up her supply during those 2 days:

*“... my daughter had dehydration and so we had to go back to the hospital for her to be in the NICU for a couple of days and so those couple of days the nurse there um told... taught me to use the pump um to use the electric pump at the hospital um so that I can you know provide some milk supply for the baby, so maybe that was when the first time I started using the pump and then because she*

*was not at home right away so there was a need for me to you know have to try to enhance the milk supply by using the pump.”*

A mother reported the hospital where she gave birth provided a breastfeeding support phone number and she used the service once or twice after leaving the hospital when she encountered problems.

Another mother who planned to use formula prior to giving birth tried breastfeeding because she was encouraged to do it by an English-speaking hospital staff. When asked why she still tried breastfeeding if she already made the decision to use formula, she answered:

*“I feel bad to say I’m not going to try, she kept asking me to give her milk, she was making signs, I didn’t understand what she was saying, so I just approached the baby, she taught me, so I approached the baby... after I approached, I squeezed, kept squeezing, she kept crying, couldn’t eat it then I stopped giving.”*

Even though she did not understand what the English-speaking staff was saying, having the staff there to encourage her prompted her to at least try it. She continued to use formula at home.

Some other breastfeeding advice postpartum mothers received at the hospital included massaging breasts, having infant latch on to increase milk production and information such as “*breast milk is the best*”. A mother learned from the hospital staff that one way to prevent the reduction in breast milk produced was through frequent feeding:

*“They would teach... told me to massage... the breast... and then have the baby suck it... push and push would make more milk to come out. If you don’t feed there will be less. If you feed it everyday, there might be more milk to come out.”*

#### Availability of lactation consultants at hospital

Lactation consultants were generally available at the hospital for postpartum mothers with a few mothers reporting limited support. A first-time mother only received breastfeeding education on the third day, the day she was discharged because the lactation consultants at the hospital were only available on weekends. A mother received breastfeeding support from the lactation consultant for her first birth but noticed they did not visit her room for her second birth:

*“I remember the lactation consultant coming in sort of um very frequently in the beginning to make sure the baby was latching on right. So I remember with my first child like I said she came... I remember her coming the first day and I told her I wanted to breastfeed and she came back every 3 hours to make sure that when I was feeding that the baby was latching on correctly.”*

## **Factors against Breastfeeding**

### Policy

There were certain hospital policy and practices found to delay breastfeeding. A second-time mother was not allowed to eat for the first 48 hours for her first child born. The mother felt the policy made it hard for her to produce breast milk:

*“... the hospital had this rule where um mom C-section mom were NPO for the first 48 hours pretty much um which was which made it really hard cuz you’re not eating anything, it’s hard to produce milk um so um... my mom was bringing me Chinese soups and all that all the other um stuff that’s supposed to help nourish (po) you body (sen) you know your body and help you produce milk and all other stuff. So I was drinking um soups and stuff from the beginning but I was NPO couldn’t eat anything solids so I couldn’t eat rice couldn’t eat any foods pretty much... um... which made it hard...”*

The mother asked for food but was rejected due to the hospital policy.

*“I was healthy and I was starving, begging for food but they kept saying you know, ‘no, you have to be NPO for the first 48 hours’ well ‘you have to be NPO until you pass gas’ that’s what that was what their rule was...”*

Another hospital policy that delayed breastfeeding was the type of anesthesia used on mothers with caesarean birth. A mother told the nurse that she was allergic to a type of anesthesia but was told not to worry too much as it was a common problem:

*“... the nurse asked me if I had any concern for anything, I said I’m allergic to the anesthesia and I would vomit really bad and they said ‘oh, don’t worry, 90% of people also have the problem, no worries, it’s normal.’ So I said to them ‘oh, I don’t think mine was that normal’, and then she said ‘just trust me’... And then I started vomiting after I was brought out. In the beginning they said ‘it’s nothing, it’s nothing, it will be all good after vomiting out. But then it couldn’t stop and later basically I didn’t go about 10 minutes without vomiting. They saw me vomiting very bad every time they walked pass my room. Later they got worried, got worried because the stuff I vomited started to have color... greenish... And*

*then... they began to kind of... because they couldn't stop it then they called the doctor..."*

She was unable to initiate breastfeeding and felt that her allergy for anesthesia was one of the reasons:

*"Actually initially I wanted to breastfeed for the first meal of the baby after giving birth but my wound was still very painful and on top of that I was allergic to the anesthesia so I was vomiting very very badly after giving birth."*

Similarly, another mother also reported problems with anesthesia for her caesarean birth. The type of anesthesia put her to sleep for around 5 to 6 hours and missed the chance to initiate breastfeeding:

*"I was out so I was passed out for good 5 to 6 hours um I didn't get her I didn't... by the time I woke up it was... half the day had gone... so I think they they had fed her formula to um... you know compensate until I woke up and I was able to breastfeed her."*

#### Lack of support for postpartum mothers

Some mothers had unpleasant experiences during their stay at the hospital. A mother who was trying to breastfeed her infant by herself in the maternity ward got her infant taken away by a nurse who did not offer any help:

*"I wanted to breastfeed as soon as possible but they... I think I tried for like 10 minutes and I remember the nurse coming in and saying 'well this obvious isn't working so we'll try again later' and she took my baby away and didn't offer any help or whatever and like and even even to have them skin-to-skin... not breastfeeding, it's still better than... away.... They said they had to put her in a... in a warmer so she could warm up but I could warm her with my own body temperature..."*

Another mother also reported that she did not receive support for breastfeeding at the hospital where she stayed. When she was still recovering after her caesarean birth and her family was not there with her, her infant was crying but the nurse seldom attended to her:

*"When I finished the C-section, I couldn't get up. Because my family couldn't stay, my parents went home at night. I couldn't get up so the baby was crying and stuff and they seldom brought the baby to my side."*

For a mother who was encouraged to breastfeed her infant at the hospital, she felt the nurses were “pushy” and neglected her physical limitation after the caesarean birth:

*“I remember one of the nurses was really pushy... I just had a question about breastfeeding and she was just like get the baby naked and she put it on my breast and she just left.... I had C-section and I barely can move after my C-section um... I didn’t have any help ‘cause my husband couldn’t go that day to the hospital and she just got the baby naked and she just you know put it on my breast and I didn’t want the baby to get naked because I couldn’t really move you know what I mean like I was afraid that I couldn’t get the baby drift later on so I remember she just left.... I had all the IV stuck in my wrist and my baby was naked... I had to call her ask her to help me adjust the baby to a little bit here, there and there so. It was a bit tough.”*

However, even though she did not like the way the nurse left the infant on her body, she still felt that the nurse was very patient with her in other areas:

*“I couldn’t move too much and I needed her help I have to call her 10 times to come and help me and she did come at those 10 times.”*

One of the mothers described that the hospital setting in China was more supportive of breastfeeding when she gave birth to her first child than when she gave birth in the US:

*“There’s flyers promoting and advertising breastfeeding in the hospital rooms in China. There’s not that many in the US. So there’s less promotion in the US.... In China, babies are usually placed in front of the mother, they teach you how to breastfeed and stuff. They didn’t do it here in the US.”*

She felt that when there was more promotion for breastfeeding in the hospital: *“it will allow you to understand the benefits of breastfeeding.”* When she described her experience in the US it was more towards the use of formula. She said: *“In the US, the nurses don’t tell you, the doctors don’t tell you often either. It makes people think it might be okay to just feed formula.”*

### Language barrier

A number of Chinese-speaking mothers indicated that Chinese translation services were important to them. Chinese interpreter services and brochures regarding breastfeeding printed in Chinese were available at the hospital. On the other hand, some mothers still experienced

language barriers. A mother had to predict what the hospital staff said to her based on their body language. She indicated that she spoke Chinese at admission and felt that the hospital did not have enough Chinese interpreters:

*“We wrote ‘China’, they should use a Chinese person... They don’t understand what we say, we don’t understand what they say...”*

When asked about her infant feeding experience at the hospital, she did not understand why her infant was not brought to her after birth:

*“Perhaps they said my immunity was not good enough. They didn’t say much. They didn’t bring the baby to us to ask if we wanted to breastfeed.”*

She said that without translation at the hospital, “... even if we have any difficulty, we can’t communicate with them.”

#### Infant rooming issues

Many parents felt safer to have their infants stay in the nursery than in their room. A mother thought the way the nursery protected the infant during her sleep allowed her to sleep better:

*“Um room-in, no. I don’t know. For me, I felt like a little... um... I was also afraid that like something might happen to my baby when I was sleeping ‘cause I was sleeping very soundly. So I actually let the baby sleep in the nursery... I mean there were cases that baby being taken.... I was more at peace. I slept in peace um... when I had baby in the nursery but I think I would have not slept well if baby was room-in with me but room-in was encouraged at the hospital...”*

Similarly another mother also felt that the infant should not be in her room at the hospital while she was sleeping as she might not be able to provide care:

*“If I sleep he shouldn’t be with me. I might not be able to take care of him.... It wouldn’t be a problem for those 2 days because I was quite tired.”*

While some mothers felt a sense of relief for their infants to sleep in the nursery, a mother thought it was a good idea because she was still in pain from giving birth:

*“... if he wakes up at night crying, it can disturb my sleep. He doesn’t rest well and I didn’t know what to do also. But if he’s in the nursery, it feels relieved*

*‘cause they have experience how to feed him, how to change diaper for him, how to get him to sleep, it’s a relief.’*

Similarly, a mother also had an unpleasant experience with infant rooming at the hospital. She and her husband wanted to nurse the infant whenever needed so they chose to stay in a private room but regretted the decision. She described that she and her husband were “*miserable*” as they were not able to get any sleep:

*“... the lights don’t get turned off at the hospital so it was really hard and then on top of that I was trying to get um recovery from giving birth so it was just too much...”*

As her milk had not come in fully, the infant was found to have dehydration two days after discharged:

*“I felt so miserable because after we left the hospital um we felt like ‘oh, she was hungry because she was just crying so much’ and then we gave her a bottle of formula and she took in right away... and then to top it off the pediatrician called us back after we visited her during the day asked us to bring her back to the NICU because she was dehydrated and so I felt like I was not giving her enough um you know milk.”*

Based on the experience from the first time, the parents made the decision to let the nurse do the feedings at night to ensure the infant was getting enough milk and at the same time allowed herself to rest more:

*“... so this time around I felt that it was best that I let the nurse feed him during the night time so that at least I can get some sleep while at the hospital. I felt that there’s always more than enough time for me to nurse him when we get out and I was not worried so much about not able to get the sufficient breast milk if I hold off on feeding him during the night so that’s why I made the decision so that he would get enough milk during the night and I would get enough sleep while we were at the hospital.”*

#### Formula received at discharge

Most parents in the study, including both breast milk and formula users, received formula samples at the hospital and the pediatrician’s offices, while one also received formula during a

prenatal checkup. A first-time mother received formula during her prenatal checkup and believed it was given by the hospital as part of a promotion that was not ordered by the doctor:

*“... during the prenatal checkup was given and then later... the hospital gave also.... It was probably a promotion.”*

A first-time mother who experienced a delay in breast milk production at the hospital received formula and used it temporarily until her milk came in. She said the formula was helpful because she was homebound for 1 month to recuperate from giving birth and her husband was busy taking care of her.

*“... after leaving the hospital, it’s common to practice ZYZ, during the ZYZ period you don’t go out. Also my husband doesn’t have experience, he was just taking care of me at home, had no time to go out to buy. So formula could support for some time. And then I had milk, then gradually stop using formula.”*

After that, she breastfed exclusively for 6 months. Another first-time mother also used the bottles of formula given by the hospital as backup:

*“... they gave me some... for if I have difficulties at home or if my breast milk was not enough, I can add some formula milk...”*

She breastfed but added formula at 2-months due to low milk supply. A second-time mother initiated breastfeeding at the hospital and was offered formula. She did not accept it: *“The hospital asked us if we wanted but we said ‘No, thanks’.”*

#### Followed type of formula provided at hospital

Many parents who used formula indicated that they followed the type used at the hospital. Some reasons included: trusted the hospital, negative effects from changing and formula not rejected by the infant. When asked when the time the decision to use formula was made, the first-time mother who considered breastfeeding but used formula due to extreme pain from engorgement said:



*“She was already drinking that fluid milk at the hospital. And then when she came home she’s drinking that type. In the US, normally all... other people all drink fluid milk.”*

Another first-time mother followed the same brand of formula she received at the hospital. She trusted the brand used by the hospital and thought it was not necessary to change. She also wanted to prevent side effect such as constipation from changing to a different brand.

*“The brand they gave me, I keep using the same brand, never change it. When the baby was first born they said... not to change it. Perhaps I think he’s used to his brand. If changed it, it might be troublesome. Also, in case he’s constipated.... One is that it’s provided by the hospital, I think it should be good. Also it’s not necessary to change... if another brand, I’m afraid the baby will have some reactions due to the difference in the nutrients or flavors in another brand. That would not be good to the baby.”*

Another first-time mother who used both breast milk and formula in the beginning explained the reason to use the same brand as the hospital was that the formula was not rejected by the infant:

*“Because from the beginning the baby was drinking it, he wasn’t really reluctant to it and then we decided we could feed him with this brand.”*

## **Breastfeeding Support from Doctors**

### Doctor supported breastfeeding

Doctors were found to support breastfeeding through various ways. They provided knowledge on the benefits of breastfeeding, taught strategies on how to increase milk supply, showed ways to hold the infant for breastfeeding, and gave advice on pumping at work. The information from the doctor that breast milk would enhance the infant’s immunity helped a first-time mother make her decision for breastfeeding. Some mothers also learned from the doctors, when breast milk was low, they should first feed their infants with breast milk before using formula in order to maintain or increase their milk supply:

*“So the doctor suggested to use less formula to maintain the baby’s need for milk, so it [production of breast milk] could go back anytime... still temporally possible to go back.”*

Besides the breastfeeding support for mothers through education and demonstrations, a mother also felt the breastfeeding support from her doctor was by not having formula in the doctor's office and objecting her decision when she told the doctor that she was practicing long-term breastfeeding:

*"... she said 'are you nursing?' I said 'yes, we're still nursing' and she said 'great' so she's... in a way like they're pro-breastfeeding but not like pushing it on you um... you know that's your decision kind of like she didn't say it was your decision but it was very like 'great' and that's it and like supportive but not um... intrusive or anything."*

#### Doctor as trusted source of information

Most of the mothers in the study valued the opinions from their doctors. When their infants were not feeling well, some mothers developed a sense of relief knowing from the doctors that the infants were healthy. An infant had milk coming out of his nose and the pediatrician told the mother it is normal once in a while:

*"I talked to the doctor, the doctor said, the pediatrician... actually said that you know maybe I overfed him... it's normal you know for... some baby once in a while that happens when you overfed the baby... so... yah..."*

The infant of another first-time mother had some digestive problems from drinking formula in the beginning but she was not concerned as her doctor said it was normal:

*"The doctor said it's normal that a lot of babies have sensitivities, have bloating belly with gas... but not to worry, it will be good after 3 months... I also changed a few types of formula. The doctor suggested me for this one, and switch to that one, just to try it, because s/he said after this [adjusting] period, it will be good naturally."*

Grandmothers were also reported to trust doctors' opinions. A mother reported that her mother trusted doctor's advice for breastfeeding being the best food for infants:

*"... she [grandmother] supported me to breastfeed because she followed the doctor's suggestion that breast milk was better. Breastfeeding was the best."*

A first-time mother (28 y/o) believed her parents would agree with her infant feeding methods from the doctor as they were scientific:

*“... our generation the way we raise kids is more scientific according to the doctor’s... that’s the doctor’s suggestions and the experience from many friends... so I think it’s better. So they support.”*

#### Influence on introducing solids to infant

Some mothers sought advice from their pediatricians in terms of the time to introduce new foods and water for infants during regular checkups. A mother said she added different foods to her infant according to the doctor:

*“We’re also according to what the doctor told us, at different month, you can add foods like fruit puree, meat puree step-by-step.”*

Another mother listened to her doctor to add solids at 3-months when the infant was able to sit still on its own:

*“After 3 months, the doctor would tell you, you can buy some rice cereal for the baby to eat because when the baby could sit still...”*

A mother who was exclusively breastfeeding added solids at 4-months. According to her doctor, the time her infant lost the spitting reflux was when solids could be added:

*“... we went 4<sup>th</sup> month checkup and the doctor said he was ready for solids to start trying some solids um because he lost the spiting things up reflux you know ‘cause if you put something in the baby’s mouth he’s not ready for solid foods they spit it out but he didn’t do that anymore plus he can hold his heads up and he was interested in food so the doctor said we could try if we wanted to so we just gradually, we started with very little and then increased it little by little each day and then now he eats about 3 tablespoons of the rice cereal one time a day mixed with breast milk.”*

#### **Lack of Support from Doctors**

##### Doctor never suggested on feeding method

While most doctors provided support for breastfeeding, some mothers reported the lack of support such as not advising them on feeding methods. A mother who nursed both of her children said that her pediatrician only asked her about her feeding method but no suggestion were ever provided:

*“They never really asked me how I plan to feed him um certainly not my OB, the pediatrician just asked as a matter of fact um whether it is breast milk or formula that we feed him on.”*

Another mother who used both breast milk and formula for 2 months also did not receive any information on infant feeding from her doctor: *“They didn’t teach me any knowledge on feeding.”*

## **Services in the Community Health Clinics**

### Woman, Infant and Children

One of the main objectives of the study was to understand the Chinese mothers’ experience at some of the nutrition assistance programs. The majority (13 out of 23) of the mothers in this study participated in the WIC supplemental food program. Among the WIC users in this study, the program was often referred to as the “Milk Coupon Department” and the financial assistance for purchasing foods they received as the “Milk Coupon”. The support mothers received through the program included financial assistance, education and knowledge on the benefits of breastfeeding, and advice on introducing new foods. A first-time mother said WIC was very supportive of breastfeeding and her decision was mainly due to WIC:

*“From the beginning, when I was still pregnant, when I first got pregnant, I went to WIC, they already encouraged ‘Hey you should try breastfeeding’. They would tell me ‘breastfeeding is good for this and this.’ That’s why I think I was very much influenced by them.... They strongly encouraged. They said no matter what, you should still try it.”*

WIC also provided problem-solving support for mothers who experienced engorgement from nursing: *“... like using the hot towel to cover it and then massage... a lot better”*. A mother mentioned WIC provided phone support for when they encountered problems.

### Influence on infant feeding & introducing solids

Mothers who were WIC users trusted the recommendations provided by the program and decided what to feed their infants based on the food lists. When asked how she decided on

feeding fruit puree, a mother said: *“They included this food in their program.”* Similar to the indicator for adding solids given by the doctors, WIC also recommended that it was appropriate to add solids when the infant could almost sit: *“Around 4 months you can feed this way. They said when your kids can almost sit, then you can feed.”*

A mother who had low breast milk supply considered the benefits from WIC very helpful for her family: *“It’s helpful because I don’t have enough breast milk. So it’s definitely better using some of that.”* On the other hand, a mother who was not qualified for WIC was feeding her 9-month-old son noodles and eggs and planning to change to formula when the child turned one. She used solids instead of formula as formula was too expensive:

*“I want to wait until he’s a bit older, almost 1 year old, I will try to switch to adult milk, our regular type... because we don’t receive the formula from the government, the milk coupon, so it’s quite expensive to buy the formula. So I’ll think about it, if until then he can eat more noodles, eat more adult eggs, it’s still okay.”*

#### Charles B Wang Community Health Center

Some Chinese mothers were patients at the Charles B Wang Community Health Center in either the New York City or Queens location. They were introduced to the WIC program, and received information on maintaining healthy weight during pregnancy as well as the benefits of breastfeeding. Through the health clinic, mothers had the chance to visit the hospital guided by Chinese nurse to be familiar with the setting. A first-time mother found the service helpful. She described the visit:

*“They arranged a nurse who speaks Chinese to lead us from the delivery room, and then from observation room and then to the delivery room, and to the baby room (nursery) and then I visited all.”*

During the tour, they were taught to request these special services at the hospital if needed given the fact that Chinese mothers might have different cultural habits than other mothers in the United States. For example, as hospitals usually provided cold drinking water, they could

request hot water instead. When asked about the experience, a first-time mother thought it gave her a sense of relief:

*“I think it’s very good. There’s nothing like this in China. It makes you feel relieved. It prepares you beforehand.”*

A mother thought the knowledge on infant care given by the community clinic was very helpful in terms of taking care of the newborn:

*“It was helpful it was helpful because sometimes in the beginning when I pat him after nursing him, he didn’t burp. They said it’s possible that he might spill the overflowed milk, they said that it’s actually very dangerous. It can suffocate him. So every time after feeding, no matter how long you pat him, you have to make sure he burps and then you can lay him down.”*

The mother was very satisfied with the program: *“There’s nothing I’m not satisfied or unhappy about.”*

#### Lactation consultant outside the hospital

Some mothers used lactation counseling services outside the hospital. During her second pregnancy, a mother found out about the lactation counseling service provided by a company through her work and contacted the consultant prior to giving birth. She felt the service was helpful when she encountered conflicting information on feeding schedules:

*“I had my relative my mom saying, ‘oh you know we should give him a set schedule you know every 3 hours every 2 hours whatever it is so that we’ll keep it at that setting’. But then I also feed her that we can feed we should feed on-demand so that we can increase the milk supply so because of all these conflicting suggestions... I need to call somebody who’s just more knowledgeable.”*

She followed the advice from her lactation consultant and fed her infant on-demand. The lactation consultant also suggested to her to have a period of direct contact with the infant before purchasing the breast pump as the product had only a 1-year warranty. Between the OB, pediatrician and lactation consultant, the mother said that it was the lactation consultant that

provided her useful advice in terms of infant feeding. When she described the first pregnancy without access to the lactation consultant: *“I felt like I was at lost...”*

A mother was given advice from a lactation consultant right after giving birth but she indicated that it was around 3 weeks when she had the most difficult time and almost gave up:

*“It took me like a good 3, 4 weeks before we felt like it was working you know. 3 weeks I remember thinking ‘I can’t do this anymore, I’m gonna stop’. But ‘cause it was really painful but it’s like just couldn’t get a good latch but then it just suddenly like I just remember feeling like ‘oh it doesn’t hurt anymore’ like we figured it out or something.”*

She found out about the breastfeeding support group on a bulletin board at her pediatrician’s office and it was the lactation consultant there that helped her the most:

*“... it was really the lactation consultant that I met later on and she was so great. she showed me different positions and she showed me how not to use the nursing pillow and that was really great ‘cause I felt like I was so dependent on the nursing pillow that I didn’t wanna go out because I felt like I had to take it with me. but she showed me just by showing me that the baby knows instinctively like what to do so I don’t need all that... I can just do it naturally so that was very freeing.”*

She described the knowledge she learned from the lactation consultant as *“life-changing”*:

*“She helped a lot too and she showed me how to do side, side-lying nursing, like lying down in bed and that was like life-changing ‘cause then I could lie down I guess and the baby could lie down too. That was amazing, that was awesome.”*

Besides positions for feeding, she also learned to use the scale appropriately to weigh her infant before and after nursing to find out how much it got each side of the breast:

*“... they weighted the baby before you nurse and then they weight the baby after, you actually get to see like um... how much the baby drank ‘cause we can like figure out the difference and they did it for each side you nursed um and I know some moms can get kind of hung up on weighting it and stuff but it was kinda reassuring to know that ‘okay, this time my baby got whatever 2oz or something.’”*

## CULTURAL INFLUENCE

### Elders' Influence

#### Influence on using formula

In this study, the terms elders and grandparents were used interchangeably to refer to the parents of the father or mother being interviewed. The elders were found to have influence on both the use of breast milk and formula. For some mothers, breastfeeding was perceived as a cultural practice passed down from generations. A first-time mother who breastfed said that the traditional thinking for her was that *“breast milk is the best.”* Similarly, another mother who breastfed also described breastfeeding as a Chinese tradition:

*“Because perhaps it’s a China tradition. Because from the older generation, they will educate the next generation to have kids, will tell you ‘breastfeeding is good, breastfeeding is good’, ‘breastfeeding would enhance the baby’s immunity, has influence on the baby’s health condition in the future’. So there’s... now in China, I think some families tend to listen to the older generations the elderly for this type of knowledge, they’re more considered experienced, so we would still listen to them.”*

Although some elders support breastfeeding, some encouraged mothers to use formula. A mother who experienced low breast milk supply tried to seek advice from the grandmother on how to increase her milk production. The grandmother told her to use formula as it was the method she used before:

*“... I asked her you know how I could get more milk more breast milk for the baby, you know, what should I eat and stuff like that, she’s like ‘nah, just use formula, formula’s good’.... ‘that’s what I fed you guys, I never breastfed you guys, I just used formula back in the days too.’ So yah...”*

Another mother planned to breastfeed but first needed to gain support from the grandmother as the grandmother thought the procedure required for breastfeeding was *“too much work”*:



*“She wanted me to go right to formula, she thought it was um too much work to um feed the baby breast milk um and pump and all that stuff so she’ll... she wanted me to go straight to formula with my daughter but I insisted.”*

After seeing the benefits of breastfeeding from several grandchildren, the grandmother was eventually supportive of breastfeeding for up to 6 months. However, the mother still had to negotiate for a longer time frame:

*“... of the opinion that it is beneficial to have breast milk. So, she’s... she was very supportive for up to about 6 months of mark... um... when she was like ‘okay, you know we’ll just switch to formula’ and then I just pushed a little bit longer...”*

She believed it was the “old-school” Chinese grandmother who lacked the education of the benefits of breast milk and said that it required efforts in “*keeping them educated and insisting on doing it*” in order for them to support breastfeeding.

#### Influence on introducing solids

In this study, many of the infants’ solid foods were traditional Chinese food. The type of solids varied by regions of China where the family originated from. However similarities existed. Rice based solids such as rice cereal and rice soup were mentioned the most by mothers. Other foods such as noodles, chrysanthemum drink, and fish were also reported. The perceived benefits from introducing traditional solids to infants included strengthened bone development, learning how to swallow foods other than milk, prolonged satiety, and improved digestive system based on the appearance of infants’ feces, and steady or accelerated growth. One mother mentioned the improvements were necessary for her infant, as it “*can’t stay at the same stage all the time.*”

The introduction of solids was influenced by the way the mothers were raised when they were younger. A mother from southern China explained that even though other people started solids at around the 8<sup>th</sup> to 10<sup>th</sup> month, she began feeding mashed solids of fish, meats, tomatoes

and carrots at 6 months. She explained that it was the way she and her other children were raised by her mother when she was in China:

*“Because we’re not that educated, I don’t know how to say. It’s okay to raise kids just based on our own methods.... My mom raised the eldest one, so I just followed her the way she took care of the eldest daughter. Now the eldest one is very tall/well-grown.”*

Similarly, another mother from northern China also let her mother feed her infant with noodles and egg yolk at around 5 months because it was the way she was raised in China. She explained it was tradition:

*“This is the tradition. My mom the elderly continues... when we were little, we ate like that. So she’s feeding my son this way.*

She believed the addition of solids would also enhance the infant’s bone development:

*“Because when the baby is older, if he eats more adult food, it might be better for his bone development.”*

Even though she considered rice and noodles to be the same, she chose noodles because that was the method used particularly in the region of China her family was from:

*“I know Guangdong people cook congee (rice soup) for children to eat. Because we’re from the North so we cook some noodles. But actually they’re the same.”*

Some mothers believed that solids could enhance the digestive system for the infants. A mother said that the improvement was seen by the “healthier” looking feces because it was “hard” when the infant was only drinking milk. She also said that her infant was satiated longer on solids. Therefore, even though she received financial assistance from WIC, it was still necessary to add solids to the feeding:

*“Because people here thinks that they have the milk coupons, the baby would be fed with milk. But in fact, for the baby, milk is fluid, they feel hungry very quickly, so milk is definitely given to her but you add some other foods that can make her feel full, nutritious foods. I also give her soups, boil some soups that is suitable*

*for her, carrots, meat soups that sort, not too nourished, clear ones. So, [the baby is] very easy to take care of now... That's why my daughter is very easy to take care of."*

A mother from southeastern China fed soft noodles at around 7 months believing that soft noodles would help expand the throat and prepare her infant to eat other adult foods in the future. She would shred the noodles before feeding:

*"Noodles... because it's quite thin, can eat that, [the baby] should start eating some, otherwise, people say if you let her eat too late, how to say it... our Fuzhou people said... the throat can be expended through eating so that they [the children] know how to eat thick stuff. Otherwise, eating too late... it would be too late to ask her to eat thick foods when she's 2 or 3 years old."*

She said that it required some time for the infant to get used to the new solids but she was not worried: *"In the beginning, she burped, but after getting used to it she won't anymore."*

Similarly, another mother from southern China also added solids such as rice cereal and fruit puree at the 4<sup>th</sup> month in order for her infant to learn how to eat and swallow foods other than just milk:

*"The baby can learn how to eat food. If only sucking milk naturally, babies would not eat by themselves.... The benefit is... learn how to swallow.... Not just to swallow milk."*

A mother said that feeding traditional Chinese solid foods was the only cultural influence on her infant:

*"The only the only influence that the Chinese culture has on what he eats is the traditional food the cultural good. So obviously he eats Chinese rice and jok [rice soup] and um you know even if he's now starting to eat staple foods..."*

## **Maternal Care**

### Reasons for postpartum practices

The postpartum practice of *zuo yuezi* (ZYZ) refers to staying at home for 30 days after giving birth. This practice emphasizes dietary and activity restrictions that are believed to help

postpartum mothers recuperate after giving birth, improve milk supply and prevent long-term illnesses. ZYZ was followed by both mothers who were feeding their infants breast milk and those who were feeding infant formula. In order for mothers to maximize recovery from giving birth and for the infants to receive necessary care, some grandparents, including those who lived in China, came to the US before the infant was born to prepare things during the ZYZ period and become the primary care provider. Mothers perceived both benefits and negativities from the practice. Some information on paid ZYZ services was also reported.

Mothers did the practice for health reasons that originated from traditional thinking. A mother said *“I’d like to believe that it had some influence on helping me recover better”*.

Another mother followed the traditional practices because her mother wanted her to recuperate well and prevent long-term health consequences:

*“... she was really worried that it has some really um some really adverse effects on me on my health down the road if I don’t recuperate well enough you know during this first month.”*

Another mother was also convinced by her mother that she needed to follow the practice in order to prevent long-term health problems:

*“... my mom was saying that I should be on this diet otherwise I will regret things you know later on ‘cause you know it causes problems.”*

Similarly, a mother also considered ZYZ practice as a tradition and something important for health:

*“The zuo yuezi is very critical to our Fuzhou people. We are serious about it.... Your health is your wealth.... as long as I’m healthy, nothing else matters. It’s true, that’s how I think.”*

Another mother even considered ZYZ practice as a tradition rather than a choice:

*“... because it’s tradition um it’s really not a choice, especially when you come from a Chinese, like traditional Chinese parents, it’s really not a choice... my mom already assume I was gonna do it.”*

#### Perceived benefits from dietary restrictions

Many dietary restrictions during the ZYZ period were reported. The “cold” foods that were considered harmful to the mother’s health and would decrease breast milk production included anything directly taken from the refrigerator. A mother felt better from drinking warm than cold water: *“... because it’s not good for the digestion and my body actually feels better when I drink the warm stuff.”* Many fruits and vegetables were also considered “cold”, such as watermelon, banana, bean sprouts, garlic chives, and spicy foods. A first-time mother could feel a significant decrease in her milk supply when she accidentally ate garlic chives once:

*“One time, I accidentally ate some dumplings that had garlic chives in it. I significantly felt that the milk volume was really not enough.”*

During the ZYZ period, mothers consumed more of the “hot” foods that were considered helpful for recovery and breast milk production. Some of the foods reported in this study included soups with ingredients such as chicken, ginger, fish, pork feet, pork bone, deer antler, black vinegar, peanuts, and dishes with ingredients such as “*chu gurk keung*” (pork feet with ginger), “*chang shou mian*” (longevity noodles), glutinous rice with papaya, pork cooked with “*tam har cheung*” (shrimp paste), and black mushrooms. The use of Mother’s Milk Tea and fenugreek tea was reported. Mothers who were breastfeeding believed their breast milk was affected by their diet. A mother described: *“... your breast milk is what you eat too.”*

A mother said her ZYZ diet that consisted mainly of soups low in fat and calories helped her return to her pre-pregnancy weight:

*“... because the foods were plain and simple and also low in calorie and also the oil was gotten rid of because I get rid of the oil. So basically the foods within the*

*zuo yuezi period... Basically at 3 week, my weight returned to before I gave birth."*

Similarly, another mother said the chicken soups and foods made with ginger also helped her return to her pre-pregnancy status:

*"... once I hit 1 month I went back to before pregnancy weight already.... when you after give birth your hands and feet are still a little swollen, it it um... with the ginger with all the chicken soup that whatever they put in there helped um recover and also you know return to normal."*

In terms of breast milk production, a mother saw improvement in both physical recovery and breast milk production:

*"I mean I felt pretty good, I recovered pretty fast and my milk came in pretty good. um... so it's... you know in I don't know if I believe any of that superstitious stuff..."*

Another mother noticed a small increase in breast milk from drinking soups cooked with soybeans and bones while the increase from the Mother's Milk Tea along with other efforts was reported by another mother:

*"I tried herbal stuff mother's milk ah mother's milk tea or you know and other things and it probably helped me increase the milk from 1oz. to 2oz. per 3 hours."*

To enhance her breast milk production, a mother who described herself as "picky" tolerated undesirable foods for lactation purposes: *"I'm pretty picky with what I eat as well. If it really helps with milk production which I care about..."*

While some mothers noticed an improvement in breast milk production, some still struggled with low quantity. A mother said her mother made her soup that was supposed to help for lactation but it did not help her in getting any milk:

*"Then after we got home, my mom wanted me to breastfeed, wanted me to do it for whole-month. But no matter how much soup I drank, I didn't have any milk."*

Another mother also did not see any improvement from drinking soups with traditional ingredients that were supposed to help to lactate:

*“She [my mother] made stew that was supposed to help me produce but that didn’t really help. She made you know fish peanut soup she made with pork feet peanut soup um the peanut was supposed to help with breast milk production and she put a lot of stuff that was supposed to help but didn’t so yah...”*

After much effort, a mother who still struggled with low breast milk assumed she was to blame for the problem:

*“I’ve had many kinds of soup... maybe because of the problem with my body’s condition, still my milk was very little.”*

#### Perceived benefits from activity restriction

Many activities were reported to be prohibited during the ZYZ period. Many mothers stayed at home to avoid catching the “wind” unless going out for doctor’s appointments. Any activities involving water were also prohibited, which included washing hair, bathing, and brushing teeth, with the exception of wiping down with warm boiled ginger water. Some mothers reported having their husband wash their hair for them. Mothers were told not to watch too much television as it was believed to affect their vision. Soft shoes as opposed to hard ones were recommended for bone health. Standing up for a long period of time and climbing stairs were considered heavy labor and should be avoided.

Many mothers felt that the ZYZ period allowed them to rest well, recuperate from giving birth, and prevent long-term adverse consequences to their health such as arthritis, bone and reproductive illnesses. A mother described that she was very tired after giving birth:

*“Just very tired... very tired after giving birth... I can rest well during zuo yuezi [period], don’t go to work... just not to do anything... just feels that I won’t be as tired, recovered faster.”*

One mother said without ZYZ, she would have to do more chores and not be able to rest as well:

*“I think there’s still some benefits... because if you zuo yuezi, perhaps what you need to do is less, it’s more relaxing... if you don’t zuo yuezi a lot of things you have to do by yourself.”*

One mother enjoyed being treated with “a lot of care” during the ZYZ period. Another mother who did not fully practice ZYZ except being served some traditional foods (glutinous pork pot, black vinegar and chicken soup) also enjoyed the feeling of being taken care of:

*“I thought that tasted really good. Again, I don’t know if it really helped or not but it made me feel um... like taking care of, like nourished and so. Those were the only two things.”*

With the help from her mother and husband, a mother described her feeling: “I was like in heaven.... I just stayed in my bed... I just recharged for 100%.”

After seeing the benefits from their first experience, many parents did it again the second time. A second-time mother who suffered lower back pain believed it was due to the first time when she did not listen to her mother and climbed the stairs. For her second pregnancy, she decided to listen to her mother’s advice and stayed in bed for most of the time:

*“... well with my first baby, she [my mother] didn’t want me to go up and down the stairs too much, which I actually did and she got a little bit upset at me. Yah and sometime after having my first baby, I suffered a little bit from the lower back pain...”*

Seeing the benefit of getting rid of the “wind” in her body during her first postpartum experience by wiping down with boiled ginger, another second-time mother decided to do it again. Based on her experience, she believed the practice had legitimate reason:

*“I found it actually good. I mean it was uncomfortable ‘cause it was so hot but I think it was actually good for some reason the ginger made me feel good. Um... I think even with my first child um I decided to do this the second time because the first time I think it did help. For some reason when I was um... exposed to wind like with the fan I could feel the chill in my back so um... that’s why I thought there was some legit reason for the thing with ‘no wind’ um you know there was some cold water and stuff because I think with my first child also when I tried to*



*use cold water I could feel the sensation in my fingers and stuff so I don't know if there was really you know the bad side effect um but I find that suing warm ginger water did help it's just that it was just really hot."*

Some mothers adhered to the traditional practices but some did not. A first-time mother found the rules of ZYZ practices to be based on experiences that were "*vaguely concluded*" rather than science. On the other hand, the advice she received at the hospital were based on science and therefore she avoided carrying heavy stuff as it might cause the ovary to drop. She also explained that since the water was more sanitized nowadays than it used to be before, cleaning should be permitted for postpartum mothers:

*"I thought maybe it was a little bit outrageous because... because it was not okay to shower and wash hair before because the water they used before was not very sanitary. I think there's no such problem now."*

#### Potential negative practices

Although some mothers received benefits from their first experience and did the practice again for later pregnancies, some practices were discontinued or changed. A second-time mother noticed the diet during her first postpartum practice was not healthy as many types of vegetable were forbidden. She wanted to increase her vegetable consumption this time but first had to negotiate with her mother who was her primary caretaker during the postpartum period:

*"I told her that if I was just always eating ginger chicken rice and the papaya, you know jok (rice soup), the congee with everything else I was just intaking all those nutrients only and not enough vitamins and stuff so..."*

She was able to eat more variety of cooked vegetables by adding ginger, the ingredient that was considered as "*hot*".

*"... 'cause normally you're not supposed to eat vegetables and fruits and stuff but I did this time, not much of the fruits but um... the cooked veggies and cooked string beams you know um... cooked. And then I just told them to put some ginger in the veggies you know."*

She explained she was able to convince her mother because she was more determined during the second time:

*“With the second one I guess I had the more mind of my own and I was um... more determined and convincing her that ‘Look, I wasn’t intaking enough nutrients, not variety of nutrients but following the strict diet.’ So I convinced her pretty much and she was you know... she was accepting this time.”*

In a similar situation, another mother said that she was not able to do things she would normally do as her husband took on the role of reminding her: *“my husband will be ‘don’t do that don’t do that’ and I’m like ‘I normally do it.’”* She described the limitations as *“... whatever you do in the house, you’re being watched.”*

Some ZYZ rules were found to be more tolerable in the winter than summer and some mothers experienced health problems and emotional stress from some of the practices. Unlike the previous cases where the mothers had foods that were low in calories, one mother reported consuming a ZYZ diet that was high in fat. She developed high cholesterol and high blood glucose temporarily at 3-weeks postpartum:

*“After the check-up, my doctor said ‘wow your cholesterol is very high, very high, very... I want to teach you on how to eat. You don’t need medicine yet. You need to change the way you eat.’ I told him/her, I said ‘Don’t worry. I know because I’m currently zuo yuezi, so maybe it’s the soup I drink, or the oil and stuff, a bit too much... the fish... I know I might be eating too much that caused the high cholesterol.’ My glucose was a bit high too. But after a little bit over half year... I was normal on everything. Everything was very good, nothing much that was bad. So I think it might be because I was too nourished then.”*

The diets consumed by the mothers also affected a breastfed infant. The mother who was eating pork feet during the ZYZ period noticed her infant was uncomfortable after being breastfed:

*“... if I ate the pork feet then the baby would get um uncomfortable easily... so I was eating less pork feet.... It seemed like under a lot of circumstances colic pain... it seemed like it was caused by oily foods... and then he had a lot of gas and was feeling uncomfortable.”*

The emphasis on resting and avoiding the “wind” prohibited mothers from going outside.

A mother who stopped the practice early at 3 weeks shared her thoughts:

*“I was homebound for the whole month, meaning I was not supposed to leave the house and for the most part I didn’t um I was told that I should try to lie in bed as much as I could... I did for like 3 weeks maybe and the last week I did not... I... I just couldn’t help it.”*

Another mother stayed home for the full 30 days during her first postpartum practice in the winter but visited the outdoor area within her apartment’s property with her second child who was born in the summer:

*“... I did the full 30 days ‘cause um it was in the winter she was born in March so the weather wasn’t nice enough to like go out. Um but with my son... ‘cause he was born in September there were a couple days where it was kind of 70 degrees... sunny... and so I did sneak out and I didn’t sneak out far I just went to the... I have courtyard in my building, um so I just you know took the baby outside did a little loop um and just sat outside for able half an hour so that was my only cheating if going outside is cheating.”*

She explained that not being able to go out to get some fresh air was her biggest complaint:

*“I think just being trapped is probably the biggest complaint and most people would tell you not being able to go out to get some fresh air and um it’s it’s probably my biggest complaint...”*

Another mother who did the practice and adhered to the rules for 30 days in the winter, including staying at home, not washing her hair, and only wiping down except using ginger water, said that she would not be able to do it if it was in the summer: *“I can tell you right now, it’s impossible.”* A mother who considered herself from a traditional Chinese family said that she could not obey some of the rules:

*“... some people are really really traditional like extremely traditional like you cannot get bath and wash your hair for a whole month. Forget it, I couldn’t do that. I mean no way, my mom didn’t support it at all.”*

The emphasis on sedentary behavior during the ZYZ practice limited many day-to-day activities. A mother who enjoyed exercise complained not being able to do it was the rule she disliked the most. Another mother who used to have more help and was going out more during her first pregnancy had to take care of the newborn all by herself and be homebound with her second child. She described the recent ZYZ experience as stressful for her as an active person. On top of being homebound, the responsibility of taking care of the newborn affected her emotionally:

*“... the stress of taking care of the baby by myself and also um you know I can’t get out of the house you know ‘cause I’m a very active person I need to you know get outside and stuff like that it’s like whole month I can’t get out of the house...”*

The responsibility of taking care of her newborn along with being homebound prolonged her pain medication this time:

*“Within a week yah... off the pain medication but with this pregnancy it takes me at least like 3 weeks or more to be off the pain medication, it’s more painful for me too I don’t... I don’t know why... but... yah.... The walking and the being active yah... and less stress maybe that’s part of the yah... ‘cause the second pregnancy was just really stressful for me... yah.”*

Another mother who had helpers at home described it as a combination of being a new parent and homebound that affected her emotionally and caused a bit of fever for her:

*“... the fact that we were new parents um the help wasn’t really helping us with the baby um so and then to add on top of that you know I wasn’t able to like even go out and breathe a little fresh air and that was that made it really hard.... it affected my mental health, I don’t think it affected my physical health... I was just basically not doing much so um I think physical I was able to recuperate. Um... it’s just that because I was homebound, um I felt like... I had if I suffered quite a bit of having fever I felt like you know ‘I don’t get to go out and just breathe some fresh air, so that was that was tough so that was tough.”*

The only mother who did not do the ZYZ practice described being able to go outside with her family during the postpartum period as nice. Similar to what the previous mother experienced, she imagined being homebound would cause her ‘cabin fever’:

*“I found going out was really helpful and like getting some air walking around with x and x you know whenever I could. It was nice to get out.... I don’t wanna be home by myself all the time with the kids. Even if it’s just... you know ‘Hello’, to be out... I don’t know just feels good, instead of being cooped up... you get cabin fever.”*

Being outdoorsy also helped settle her children:

*“I found it settled the babies too like to have a change of scenery like if she was crying or if x is crying if I would go outside there’s all this to look at and they would be calm and... but alerted caution and like looking around and... I felt like they really liked it to get outside. So we tried to do that everyday even now... like get outside, walk around. Even though if we don’t make it to the playground if it’s a walk then.”*

#### Potential influence on breast milk production

The experience of sadness after giving birth was reported by a number of mothers. Some mothers felt the sadness affected their breast milk production. A mother said she had postpartum depression during the ZYZ period and believed that “it would have been so much better” if she was not homebound and could go out.

*“Breastfeeding really depends on the mood. If the mood is good there will be more breast milk.... If your mood is not good, no matter how nourishing the diet is, you don’t have breast milk.”*

Another mother who experienced low breast milk supply and sadness after giving birth found improvement after taking walks:

*“... after I gave birth I felt a bit depressed... because a lot of mothers are like that... have postpartum depression after giving birth. After I got home, I was taking walks... walked for about 5, 6 days, there was really some milk coming out. People say it stimulates the breast... the what mammary glands... then it will stimulate your... your milk to come... something like that. Because I hadn’t had it*

*before... around day 7... around 1 week, then the milk came... some milk came..."*

#### Information on paid ZYZ services

Some mothers hired a nanny to take care of them and the newborn. A mother explained the postpartum period was an important time for her family:

*"I think it's a big deal to have a baby and um I think it would be a lot to expect my husband to take care of the baby and help me recover as well and since we're not really experienced, you know it just makes sense."*

The benefit of having an experienced nanny at home gave some mothers a peace of mind. A first-time mother said:

*"... everything is still so originate so it's just that having the woman here gives me a peace of mind, you know making sure that everything is done properly, that x is well taken care of... that if there's anything wrong or anything that's not normal the other one would pick up and tell me um... the baby is so delicate... so fragile, having her here handling that postpartum I thought it would be, you know, really helpful and then I guess coming home from the hospital I was so sore and I was very uncomfortable and you know it's good not to have to worry about house chores, cooking or you know. It's nice for someone to help you while your body heal."*

Similarly, a mother hired a live-in nanny to lessen the workload for other family members. She hired a nanny for both pregnancies:

*"I think there was just way too much cooking to do... there's really the need to have someone who does the chicken or cooking just for me because all of the soup and you know other meals that would have to come along with it so that was why we felt that it was necessary to have the help for cooking."*

A mother whose husband worked out of state decided to seek postpartum care at a nanny's home. She reserved the boarding service 6 months prior to giving birth and paid a significant fee. She felt it was necessary. After living there for 30 days, the second-time mother described the care for the newborn as more important than the care for herself: *"She just*

*especially takes care of my baby and me. Adult is easy, it's for the baby mainly.*” She felt the nanny was very helpful: *“... after she helped me I felt much better. The baby was well taken care of too.”* In terms of the living situation, she described: *“Right, there's a room, 2 beds, 2 beds inside, she sleeps in the same room with us and takes care of us.... we give her [additional] money to cook.*

Another type of paid postpartum care reported in the study was the ZYZ center or maternity hotel. It was mentioned by one mother but she did not use the service due to the cost. She heard about the setting of the maternity hotel in New York City from other people:

*“... at the zuo yuezi center, they provide you with sunlight, enough sunlight, you can look out to the view that sort, your mood would be better.”*

#### Cultural influences on the decision to hire a ZYZ nanny

When it comes to hiring a ZYZ nanny for postpartum care, mothers tended to choose Chinese nannies with a cultural background similar to their own. Even though they were also Chinese, a mother explained the reason to hire someone from her hometown specifically:

*“... our diet is different.... we can communicate well... our lifestyles are the same... we'll definitely eat the stuff she cooks... we can get along well in various ways.”*

Similarly, another mother also said that the cultural difference was the reason why she chose one that was close to her own cultural background: *“we talk and think is somewhat different”*. In addition, a mother reported that it was necessary for her nanny to speak the same dialect as the grandparents in order for them to communicate well.

## SUPPORT FOR MOTHERS

### Work

#### Influence on infant feeding

Work was found to be the reason for some mothers to use formula. A mother who was a hotel housekeeper in New York City thought breastfeeding was not feasible at work: *“Once you come back to work, it’s very troublesome. The milk leaks. When you are working, your milk leaks.”* She said her coworker who was an American had to switch to formula when she returned to work: *“she was forced to switch milk because there’s no choice. It’s impossible to work.”* Another mother who was breastfeeding for about 5 months was concerned that she would not be able to pump enough after she returned to work so planned to add formula:

*“I don’t know if I’m gonna have enough breast milk to meet for him when I go back to work... so I wanted to try to introduce maybe like some formula so that we can combine it in case he doesn’t get enough just from the breast milk that I can pump.”*

Even though mothers in New York State had their right to breastfeed privately at work, a mother believed that people would not be able to do it if they worked in a hectic environment:

*“I think that’s why a lot of other moms maybe they can’t do that at work so they might wean early or something I don’t know so.”*

A mother who exclusively breastfed for 2 months stopped in order for her infant to get used to formula due to the uncertain work location: *“I had to go oversea or I had to work it would not be possible to feed him during the day so we had to let him get used to drinking formula.”* Another mother who was pumping for 10 months stopped due to traveling for work: *“I just kept pumping and giving it to her and it wasn’t until I had to travel for work that I couldn’t pump anymore.”* She recognized that: *“it’s hard to do it when you’re working.”*



Pumping at work was also found challenging even when lactation rooms were available.

A mother who was pumping at work explained the reason why she pumped in another private room other than the lactation room:

*“there is supposedly a lactation room that’s set up but it’s somewhere a little further away from here from my office so it’s not that convenient and as it is it will take me about like 20 minutes to do the pumping and cleaning and washing and do all that. so I don’t want to take even more time than it is so I just gave up on going to the room and they don’t make it easy enough that you know that it’s supposed to be, for the door from the security something you know to that effect and it’s just very inconvenient.”*

The stress associated with taking time off work for pumping was reported by one mother.

While her coworkers were very supportive of her taking time from work to pump, a mother still felt “guilty” for pumping three times a day at work:

*“I felt like ‘oh I hope they don’t’ think I’m just you know trying to get out of work or something like that’ because I’m not you know. And I would try to do work sometimes while I was pumping... ‘cause I’ve found I had to pump for at least 15 minutes each time to make it... um worth it kind of you know to keep up with my supply. I would sometimes say ‘oh sorry guys I have to pump again’ and stuff um but they’ve never felt like I was you know trying to get out of work. They always they would say to me ‘don’t you have to go pump? Go now.’”*

## **Family**

### Husband’s support

The support from husbands reported in this study included decision-making, feeding and watching the infant while mothers pump, and financial support. Some husbands took care of mothers during the postpartum period by preparing meals, bathing them, handling household work, and reminding mothers of the rules. A mother felt it was nice to have her husband to make decisions with: “... ‘cause if he wasn’t around I think I would have just felt pretty alone...”

Although they make decisions together, her husband supported her to make the final decision at the end for what she felt most comfortable with. She considered her husband as a good partner:

*“So he would like make informed suggestions but whatever I would want he would say ‘It’s okay, you know like we had to be comfortable with you know, we both have to be comfortable with what we were trying.’ So he’s good, he’s a good partner.”*

Another mother described the only person’s opinion she valued was her husband’s. Similarly, the husband supported her to make the final decision:

*“I mean the only person that I care their opinion was my husband. That was the only person I would actually like listen and really talk to... and decide what’s the best I want to do but ultimately it was my own decision because it’s my body.”*

The husbands’ support for breastfeeding was important to many mothers. The fact that her husband was supportive for breastfeeding even though he was not breastfed as a child meant a lot to the mother:

*“I think it’s great that he feels that it’s great to breastfeed, you know he realizes that the benefits of breast milk, I think it’s good.”*

A mother who was pumping had to bring the pump with her when she went out. Her husband never complained about carrying the pump and the battery in the summer time: “... *it was like a no-big-deal for him at all.*” She described she would not have been able to successfully breastfeed without his help at home and outside:

*“... if my husband didn’t support, most likely I wouldn’t have done it because you do need your partner’s support um just because you know pumping is not easy and sometimes you need to... it takes time so while you’re doing it you need him to help, to help you with your children or you know taking care of them so you could do it peacefully because if you are all stressed out you know that’s not gonna work out.”*

During the postpartum period, some husbands recognized the importance of ZYZ practices and took care of the mothers to enhance their recovery. A husband helped carry the

bucket of hot boiled ginger water to the bathroom upstairs for a mother even though he did not like the smell of ginger:

*“My husband really really disliked hate ginger, but he was so supportive that he even carried the whole bucket of ginger water to the bathroom and it’s so steamy that the whole house gets like ginger smell and he never complained.”*

One husband also acted as a mental support by being a good listener when the mother needed to talk. A mother who was homebound and experienced sadness during the postpartum period felt comforted by talking to her husband after he got home from work. Another mother described, between the grandmother and husband, the help from her husband was both mentally and physically more important:

*“ I think my husband’s help was more important um mentally physically I think it’s important... I mean my mom helped... with the cooking and um... I mean mentally and physically husband supporting you is important.”*

While some mothers valued the involvement of their husband, some husbands were less involved. A mother, whose husband lived out of state due to work, said he was not involved in making the decision on the feeding method: “... he didn’t say much, as long as the son is fed.” Similarly, another mother who considered her husband lacked experience with postpartum care, chose to use paid postpartum services instead said:

*“Originally I wanted my husband to help me. A lot of people here use their husband. But then I think, he’s a man... with no experience, what if he got me tired and he’ll be tired too you know taking care of a baby is more tiring than working. If you don’t sleep well at night, you don’t have energy during the day. So I told him to go to work and I asked the nanny to help me instead. At least she has experience she knows what and how to do.”*

She and her friend hired the nanny who her husband had never met beforehand. She described her relationship with her friend as “we do everything together.”

### Elders' role in take care of children

Many elders in the family took up the responsibility of taking care of the grandchildren because the mothers lacked childcare experience or had to go back to work. The grandmother of a family quit her job specifically to take care of the grandchild and allow the mother to go back to work:

*“My mom is working now but if I work, the baby will... she (the grandmother) will quit her job and help me take care of the baby fulltime.”*

Another mother only planned to return to work after the grandmother came to the US in 2 years:

*“Later after I bring my mom here.... But right now, I'm not planning to let others take care of my baby. I still plan to take care of it by myself.”*

One mother reported that the reason she had the 4<sup>th</sup> child was because her in-law offered to be the caretaker:

*“So now if she's willing to help me take care, then I will give her kids. My mother-in-law said she takes care for me, so I give her, otherwise why would I consider having so many kids, right?... She said 'have more kids, I'm retired, let me take care for you.'... So if you're willing to help me take care, 'cause I still need to work, if she's willing to help me take care then I would suffer for just 10 months. After 10 months then you take care.”*

Some grandparents in China visited the US and stayed for several months specifically to take care of the mother and the newborn. A first-time mother said her parents and in-laws took turns visiting them from China. When the grandmother was here, she stayed in the same room with the infants and helped feeding at night. Besides making sure the newborn in the US was well taken care of, the grandparents also had to care for the great-grandparents in China:

*“... because my grandma is 90 years old, she's still at home. So my dad went back to take care of grandma, look after my grandma.”*

Similarly, the grandparents of another family also take turn in visiting from China to take care of the newborn in the US: *“she’s going back at the end of August and then my father-in-law will come here for a while... until October.”*

#### Perceived benefits from elders’ support

Mothers perceived a sense of relief having grandparents as the primary care provider for their children during the day when they were at work. They believed that the grandparents would provide better care than nannies while a mother appreciated the grandparents’ role in maintaining Chinese culture for her two children. A mother who planned to return to work was debating between hiring a live-in nanny or moving into the grandparents’ house. She was leaning more towards the second option as she and her husband were not comfortable having a live-in nanny in their house and were more confident that grandparents would provide better care than the nanny. Similarly, another mother said having her mother-in-law taking care of her children made her feel *“safe”* as the grandmother was considered a part of the family:

*“still she’s a part of us, she won’t treat her own kind bad. If let others to take care of course I won’t feel safe, but it it’s my own people, then it doesn’t matter, I feel safe of course. It’s her grandchild, it’s impossible to do harms to her (the baby) or treat her bad, right? Also she really likes her, really likes kids.”*

Grandparents were also reported helping mothers achieve long-term breastfeeding after their maternity leave. A working mother who continued to breastfeed sent her infant along with pumped breast milk to the grandmother before going to work every morning:

*“I would send down I would pump during the day you know package the bottles and send it down with the baby in the morning and my mom would feed um...”*

She said having the grandparents was the *“best”* and believed she would not be able to do it without the help: *“it’s perfect. I don’t know what I would do without my parents. I think having having Chinese grandparents are the best.”*

Besides looking after the children while she was at work, a mother also valued the grandparents' presence in maintaining the Chinese culture for her children:

*“you know they’re gonna care about the kids um and and then keeping the culture and the language um so they speak to him in Chinese um both my kids. Um just to keep... It’s hard already... as ABC it’s you know American-born to even to keep some of the languages is hard, it’s gonna be even harder for second generation. So whatever they can, whatever they can keep or learn of their culture their language um they’ve gonna get from grandparents ‘cause they speak exclusively Chinese there. My parents don’t speak any English at all so if they wanna communicate with porpor (grandma) and gonggong (grandpa), it’s Chinese.... We’re trying to preserving as much as possible.”*

The help from grandparents was also a stress relief for some mothers. A grandmother flew in from China 1 month prior to the due date to get used to the household and stayed with the mother for 6 months after the birth for both of her infants. The second-time mother who was breastfeeding and pumping said having the grandmother around allowed her to rest:

*“When I decided to pump I knew that my mom or my husband can help me to feed the baby during daytime. My mom fed my kids breast milk during day time while she let me rest and sleep in my first few months...”*

She indicated that her mother loved taking care of her and the grandchildren; *“She loves doing it I mean, she loves this job that she... she grabbed on.”* She considered the help from her mother the second time was as important as the first time because there was additional demand from a toddler on top of taking care of the newborn. Similar to the previous mother, another mother also thought she could not have done it without the help of the grandmother:

*“Without my mom, I don’t think I could have done it.... Having 2 children is even harder so. Yah... so she was here the second time around with my daughter and it was tremendous help because I needed to cope up with a toddler we needed to spend time with him but then I had a newborn too and I was in pain so. I mean without my mom, I don’t think I could have made it at all, yah.”*

Another second-time mother lost the support from her family with her second child and found it overwhelming taking care of the newborn all by herself:

*“... with the first pregnancy, my parents helped me a lot so I don’t really need to like think ‘what am I going to do?’ you know... but with the second pregnancy it’s all by myself you know... don’t know what to do with the baby.... the baby was throwing up milk, and the milk was also coming out from her his nose... and I was like ‘I don’t know what to do!’ you know so... that’s yah I think right after that two days after I get discharged from the hospital, yah right after the second night I started crying because it was just too much for me like 24 hours with the baby yah...”*

## **Reverse-Migration Separation**

### Information on reverse-migration separation

One of the objectives of the study was to understand reverse-migration separation in the Chinese community as the practice of separating infants from mothers was believed to prevent breastfeeding. There were three mothers in this study who were planning to send their infants to relatives in China. The main reasons were due to work and the cost of daycare services. A mother who was planning to practice reverse-migration separation described the reason she came to the US was to focus on making money for her family while she still could:

*“... it’s that you came here to make money... if you keep taking care of the baby if you can’t make money later on then you won’t survive... you don’t have um... a government job, no high-income job... you only work at the restaurant and sort. So it can be said as ‘youth rice’.”*

She described “youth rice” as a type of job that had age requirement and typically only hired people who were young:

*“When you’re older, there’s no way you can work at restaurants... restaurants won’t want... when you’re older there’s nothing you can do anymore*

She said she had to work now in order to provide a “warm home” for her family and she trusted that her parents in China would provide the best for their grandchildren: “... because if anything

*happens, the parents would take care of him with their heart and soul.*” She planned to send the infant to China when he or she reached 1-year-old since she considered that was old enough for the infant to not get sick easily.

Finding affordable daycare services was an issue mentioned by both mothers who practiced reverse-migration separation and those who did not. A mother was planning to send the younger child back to China. She described the difficulty in getting into a government subsidized daycare center:

*“... for us, the low-income family, there’s a wait list for the government ones.... it’s hard to apply for government assistance. If it’s through private, it’s too expensive.”*

When asked to describe “*warm home*”, this mother described it using her current living situation:

*“... to give him a warm home is like the place we are renting now is very small, so of course we would give him a big house, a place that belongs to us, it’s spacious and can let them be free. Our apartment right now is very small. It’s just a one-bedroom. He doesn’t even have a space to walk or crawl.”*

She believed sending the infant back to her mother-in-law in China could relieve some stress associated with the fact her husband was the only source of income for her family: “... *we can go to work, to relieve the pressure... because there’s a lot of pressure, so the baby is definitely going back to China.*” She planned to reunite with the child in the US when it reached the age for kindergarten because: “*he can go to kindergarten and I can go to work for a few hours.*”

Similarly, a mother who raised the older child in the US also planned to practice reverse-migration separation for her youngest infant when it reached 6-month, when all the vaccines were due. Even though the grandmother lived together with her family, she said she was too busy taking care of the older child. She described the benefit of reverse-migration separation:



*“... you see, if you go to work, the salary is around \$2,000. If you bring the baby back to China for them to take care of it, you send a few hundreds every month. That’s money saved.”*

The effort in keeping in touch with her mother-in-law, the child’s primary caretaker in China, was to teach them how to video-chat on the Internet.

The difficulty in enrolling in a daycare center was also reported by mothers who did not practice reverse-migration separation. A mother said: “... *I put my name on when I was still pregnant there was just no way for me to get a spot.*” Another mother (not practicing reverse-migration separation) had to increase the chance of enrollment by applying to a few centers at the same time:

*“... you have to do it very early to enroll and um also you have to... a lot of people actually enroll in different ones a few of them at the same time and be on the waiting list and it’s quite costly ‘cause the one that I’ll be enrolling my son in costs about \$850 per month.”*

#### Influence on infant feeding

Some mothers who planned to practice reverse-migration separation used formula while some breastfed. While the use of formula was for different reasons, one mother indicated the reason she used formula was particularly for reverse-migration separation:

*“Why didn’t I want to breastfeed... because in the beginning I thought if I would send the baby back to China then I didn’t want to breastfeed.”*

#### Concerns with separation

A number of mothers, including both practicing reverse-migration separation and those that did not, reported the grandparents suggested they send their infants back to China. While some mothers decided to do it, some chose to take care of their infants in the US. A first-time mother and her husband were in school when they had the infant. Since there were still uncertainties about their work location upon graduation, their parents in China suggested they

practice reverse-migration separation and offered to help take care of the infant. The parents considered it but eventually decided to raise the infant in the US for several reasons. These reasons were also reported by other mothers. First, the parents did not want to miss the chance to watch their child grow. They were afraid there might be a lack of affection between them and the child for being apart for too long. They were concerned that at an old age, it might be difficult for the elders to take care of the infant and also worried the methods the elders used might spoil the grandchildren. The mother called this an “*uncontrollable*” situation:

*“... the way the elderlies take care of the baby might be somewhat different, by then there might be um... some uncontrollable situations happen.”*

She gave an example of what might be “*uncontrollable*” when the child was raised by the grandparents:

*“the elderlies might spoil the child, and then... don’t let the child to do a lot of things, causing the child not to develop in some areas”*

Similarly, a mother who was planning to practice reverse-migration separation also thought children were not able to learn to be independent growing up in China:

*“he might be more independent if he grows up in the US. In China, kids are spoiled nowadays. They might be worse than the kids in the US in terms of independence.”*

She explained the reason why it was necessary for her child to be independent: “... *he has to be able to do anything, his parents are not going to be with him for his whole life.*”

Similar concerns were in fact experienced by a mother who came to the US by herself when her older child was in middle school in China. She noticed a lack of affection between her and her child:

*“... he doesn’t like to talk to me anymore, ‘cause we don’t see each other in person. We’re not as close as we used to be before. It’s a lot worse...”*

She believed her child developed a bad temper from being spoiled by the grandparents:

*“I’m very worried and also the grandparents in China you know they spoil their grandchildren. They gave him whatever he wanted. His temper got worse so I’m worried.”*

She decided to have her newborn stay in the US since her parents were in their 60’s and 70’s and also the fact that she had more experience now.

A first-time mother was offered by her parents in China to take care of her infant. After seeing her roommate and their child reunited following reverse-migration separation, she decided to have her infant stay in the US even though she and her husband had to save up for a few years:

*“When the baby was back at 5 years old, it’s very obvious that the baby was not familiar. So I didn’t want to separate from my baby.”*

Besides the influence from her roommates, it also became difficult to separate as she and her husband watched their child grow:

*“They affected some and my baby also. He’s getting cuter and cuter, and it’s harder and harder. You develop love after a period of time...”*

## **Community**

### Perceived benefits from meeting other mothers met in the park

A number of mothers visited the park during the day to learn about infant feeding methods from other mothers. In this study, the influence was found to be towards formula feeding and adding infant solids. A mother who moved to a new neighborhood found various benefits visiting the park with her two children, including the newborn:

*“To feel like part of a community kind of... to connect with people who are going through something similar... you can feel isolated when you’re looking after a baby all day and by yourself... With a newborn baby and it’s so demanding and stuff... it’s kind of nice to get a break from that and talk to an adult... and not just talk to a baby who doesn’t respond at all to you for the first couple months um... except crying... I guess that’s why... you wanna make friends with people.”*

She described the experience of meeting other mothers in the park as “dating”:

*“It’s like ‘do you wanna hang out?’ like you meet in the playground sometimes and it’s a little awkward and... you don’t wanna come on too strong but you wanna make friends kind of.”*

Similarly, a first-time mother visited the park near her residence during the day often to learn from other mothers’ experiences. She developed a sense of relief knowing her method was similar to others: *“I realized I was feeding enough.... it calmed me from inside.”*

Although the number of visitors was greatly reduced compared to summer, some mothers continued to visit the park in the winter. A mother explained: *“I have to get out to breathe some fresh air.”* The mother considered people from the same village in China as relatives in the US: *“when you’re not home, they’re like your family here, right?”*

## **Discussion**

The discussion section will follow the same order as the results section using the four major objectives of the study: 1) perceptions of different types of infant feeding methods, 2) services within the healthcare system including government nutrition programs, 3) current cultural beliefs pertaining infant feeding and maternal health, and 4) types of support mothers receive related to infant feeding after migrating to a foreign country. While some findings are similar to the current literature, some findings are discussed here for the first time. Following the SCT, mothers’ decision-making process for infant feeding methods will be discussed at the end of this section.

### **PERCEPTION OF VARIOUS INFANT FEEDING METHODS**

#### **Benefits of breastfeeding**

All of the mothers in the study recognized the benefits of their infants having an improved immune system and digestive health from consuming breast milk over infant formula. Additionally, they felt that breast milk was the best source of food for infants. Some mothers

also perceived special bonding between themselves and the infants during nursing. These findings are similar to the current literature on the benefits of breastfeeding (Monterrosa, Frongillo, & Vasquez-Garibay et al., 2008; Haxton, Doering, & Gingras et al., 2012; Nascimento et al., 2003).

While several benefits of breastfeeding were recognized by the mothers, some other documented benefits were not mentioned, including lowering the prevalence of type-2 diabetes, decreased risk of overweight for infants and children, and reducing the risk of breast cancer for mothers (Dewey, Heinig, & Nommsen et al., 1991; Gillman, Rifas-Shiman, & Camargo et al., 2001; Cohen, Mrtek, & Mrtek, 1995; Tryggvadóttir, Tulinius, & Eyfjord et al., 2001; Lodha, Joshi, & Paul et al., 2011; Reinhold & Bartick, 2010). It is unclear whether mothers were aware of these benefits.

### Breastfeeding difficulties

The most common breastfeeding difficulties encountered by the mothers were insufficient breast milk supply and problems with their infants latching on. These problems have also been reported to be prevalent among Chinese mothers in China and other foreign countries (Kaplan 2010, Kaufman et al., 2010; Xu et al., 2009, Li, Zhang, & Binns, 2003, Hurley et al., 2008; Koh & Chir, 1981; Goel et al., 1978). The problems such as “Not producing enough milk”, “Breast milk doesn’t satisfy baby”, and “Baby had difficulty breastfeeding” were previously found to be the three main reasons mothers who initiated breastfeeding discontinued (Kaplan, 2010; Gottschang, 2007). Some mothers reported lack of experience, pain from engorgement, and concern with milk leakage. These consistent findings suggested that mothers are not receiving the support they needed and improving these problem-solving skill is necessary.

### Perception that infant formula is preferred over breast milk in the US

While many mothers recognized the benefits of breastfeeding, some perceptions were inconsistent. A number of mothers reported their decision for formula was due to the impression that, when compared to breast milk, the quality of infant formula was better and more popular in

the US than China. While there have been several safety issues with infant formula reported in China in the past (Griffiths & Afanasieva, NBC News April 11, 2013; Ko, Global Voices March 4, 2011), the beliefs that the formula in the US was “*as healthy as*” or “*90% equal to*” breast milk were misconceptions. Some Chinese mothers also thought that mothers in the US tended to use formula rather than breast milk. According to the National Immunization Survey by the Centers for Disease Control and Prevention, the ever breastfeeding rates in the US have increased from 70.9% in 2000 to 74.6% in 2008 and the rate at 6-month has increased from 34.2% in 2000 to 44.3% in 2008 (CDC, 2010). Some mothers believed feeding infant formula instead of breastfeeding could help them lose weight.

The misconceptions of formula seemed to have developed into an ideology and belief among the mothers in the study as the ideas were consistently mentioned during interviews in the community. It was found that, for mothers who had previously given birth in China, the breastfeeding durations were shorter in the US. It is likely that, with these perceptions, even if a mother plans to breastfeed her infant, she would switch to use formula while still thinking her infant is getting all the nutrients from formula as if it is from breast milk. It is possible that through improved knowledge on the benefits of breastfeeding and awareness of the increased rates in the US, educators could help to reverse these misleading ideas and help to create a more supportive community for breastfeeding.

#### Early introduction of solids

Early introduction of solids to infants before 4-months of age was found in this study and the two main reasons were following traditions and following recommendations by healthcare professionals. For mothers who followed traditions, the perceived benefits were prolonged satiety, strengthened bone development, improved digestive health, and assisting infants to learn

how to swallow. Some mothers were also told by the pediatricians and WIC consultants that they could introduce solids when their infants were able to sit upright on their own. Often times it was before 6 months old. A study published in 2010 found the practice of early introduction of solid foods for infants to be common and that prolonged satiety at night and doctors' recommendations were among the most common reasons (Clayton, Li, & Perrine et al., 2012). The study also found that mothers who fed formula to infants were more likely than mothers who fed breast milk to introduce solids prior to when the infant was 6-months old (Clayton et al., 2012). Early introduction of solids to an infant may increase the risk of certain chronic diseases, such as diabetes, obesity, eczema, and celiac disease (Clayton et al., 2012). The recommendation of introducing solids to infants set by the American Academy of Pediatrics was revised in 2012; the time has increased from 4 months to 6 months. As it was also reported in the present study that some infants rejected breast milk after introduced to solids, it is important for health professionals to educate mothers by following these recommendations and be aware of those who might be more susceptible of introducing solids early.

## **BREASTFEEDING SUPPORT WITHIN THE HEALTHCARE SYSTEM**

### Policies against breastfeeding

The lack of breastfeeding support and discouragement at hospitals has been previously reported (Kaufman et al., 2010; Cricco-Liza, 2006). In the present study, breastfeeding was found to be supported at the hospital with some policies reported to cause delays in breastfeeding initiation. The first one was the anesthesia used on mothers who had cesarean births that caused either a strong allergic reaction that led to severe vomiting or put mothers to sleep for hours after giving birth and missed the opportunity to initiate breastfeeding early. Another was the NPO policy for mothers who had cesarean births. The mother in this situation believed that the lack of calorie

intake for 48 hours before delivery made it hard to produce breast milk. While the restrictive diet for cesarean births may be necessary to prevent aspiration (The American College of Obstetricians and Gynecologists, 2009), the delay of breastfeeding caused by anesthesia is preventable by taking more careful measures when considering each patient's health condition.

### Language barrier

It was found previously that Puerto Rican and African-American mothers were not supported to breastfeed while in the hospital after giving birth (Kaufman et al., 2010; Cricco-Lizza, 2006). For example, hospital staff went against some mothers' wishes for breastfeeding and fed infants formula instead (Kaufman et al., 2010). Given the Chinese mothers' limited English-speaking skills, one of the study's objectives was to explore whether they received the necessary language support during their stay. It was found that a language barrier existed. Some Chinese-speaking mothers requested interpretation service but did not receive the support at the hospital. A previous study that assessed cultural competency among healthcare professionals found that the majority (77%) of hospital staff did not achieve a desirable score on cultural competency (Noble et al., 2008). An intervention study that compared healthcare professionals who received continuing education in cultural diversity and those who did not found that the cultural competency scores were significantly higher among those who received the training (Noble et al., 2008). These findings indicated that healthcare professionals could benefit from enhanced training in order to address the necessary need for providing more culturally competent care for patients with ethnic backgrounds.

### Baby-rooming and safety

Most mothers in the study were encouraged to have their infant sleep in their room at the hospital. However, some mothers preferred having their infants sleep in the nursery at night as



they felt it would give them time to recuperate from giving birth. Some mothers were also concerned about the safety of the infant due to the reports of infant abduction in the past. Besides certain measures that can be done to reduce infant abduction at the hospital (Vincent, 2009), infants can be kept in the nursery at night for safety and sent to mother for feeding from time to time. A mother in the present study also felt that her infant should not be with her when she was sleeping in the hospital at night. Even though her infant slept at the nursery, the hospital nurse sent the infant to her room at certain hours and whenever the infant was hungry. This sharing from the mother provided insight as to what hospital staff can do to allow mothers to rest and recuperate while at the same time also supporting breastfeeding.

#### Formula given by hospital

Infant formula given at discharge was reported by most mothers in the present study. Some mothers who planned to breastfeed continued to do it even though they did use the formula in the early days while most mothers who used infant formula made the decision prior to giving birth.

#### New emerging initiative during the time of study

The “Latch On NYC” is a hospital-based initiative developed by the New York City Health Department of Health and Mental Hygiene (NYCDOH) to support mothers who wish to breastfeed. It was previously found that New York State ranked next to worst in terms of mothers receiving infant formula in the hospital and the initiative was created to provide a supportive environment for breastfeeding practice through reduction in distributing infant formula to breastfeeding infants unless those who are medically indicated (NYCDOH, 2012). The initiative was established on May 9<sup>th</sup> 2012 and was voluntarily joined by 23 hospitals within the five boroughs (NYCDOH, 2012). While the present study did not evaluate the implementation of the

initiative, it would be interesting to see how hospitals are doing now, especially since a number of second-time mothers reported seeing improvements at the hospital since their previous births.

#### Support for breastfeeding from doctors

It was found in a previous study that a mother was not supported for breastfeeding of her infant in the NICU (Cricco-Lizza, 2006). Factors associated with shorter breastfeeding duration (less than 2 months) were found to be associated with breast pump education from physicians, physician assistants, nurses, nutritionists and WIC staff (Chen et al., 2011; Giuliani et al., 1994). At the same time, obstetricians reported the lack of infant feeding education (Howard, Schaffer, & Lawrence, 1997). For these reasons, this study asked how mothers perceived the breastfeeding support from their doctors. It was found that a mother was taught by a nurse on how to use an electronic breast pump to maintain her milk supply while her infant was in the NICU. While breastfeeding was generally supported by doctors, improvements were still needed as some mothers did not receive any advice on infant feeding and one mother was even discouraged for practicing long-term breastfeeding.

#### Post-hospitalization lactation support

While the breastfeeding rates for Chinese mothers in the US are not available, the initiation rate among ethnic groups tends to be higher but declines more compared to Caucasian mothers (Health People, 2010). In the present study, when mothers were asked how their prenatal education or classes at the hospital prepared them for problem-solving at home, even though some knowledge was “*helpful*”, most mothers expressed it was the practical experience of actually feeding an infant that mattered. A number of mothers who were breastfeeding also indicated that it was the time at approximately 3-weeks postpartum when they encountered the most challenges. Noble et al (2010) reported that when it comes to promoting breastfeeding

among ethnic groups, a new strategy was necessary since these communities might not be able to identify or afford lactation consultants.

Among the mothers in the study who were breastfeeding, it was found that the ones that did not have access to lactation consultants during their breastfeeding period struggled more than those who had access to these services. When comparing to her first breastfeeding experience without help from a lactation consultant, a second-time mother described that she was “*lost*” and the private lactation consultant she found through work during her second breastfeeding experience was “*tremendously*” helpful. For mothers who participated in WIC where lactation consultants are available through the program, most mothers interviewed in the present study seemed to only use the service for prenatal education and supplementation of infant formula but not the lactation support when they encountered difficulties. These assistance programs should encourage and follow up with mothers who plan to breastfeed to use their post-hospitalization lactation support services when necessary.

## **CULTURAL INFLUENCE**

### Elders’ influence on infant feeding

A number of working mothers in this study who were breastfeeding counted on the elders to feed expressed breast milk to the infants during the day. While some mothers were encouraged to follow the tradition to breastfeed, some mothers needed to negotiate with the elders in order to gain their support as elders believed that breastfeeding was “*too much work*” for the mothers and wanted to lessen their stress by using formula. Some mothers believed that although elders were concerned about their workload expressing breast milk while working fulltime, they were also not fully aware of the benefits of breastfeeding, which was likely due to the fact that the Chinese grandparents are not educated on the benefits of breastfeeding. It is also

possible that after migrating to a foreign country, the fact that elders have limited or no English skills to access new information made them more susceptible to using formula.

The support from the elders is important for mothers who wish to breastfeed, especially for a culture like Chinese that values traditions and the involvement of elders in the extended family. A previous study also found that, based on the time in China, elders became more involved in childcare upon migrating to a new country (Da, 2003). The perception on infant feeding was found to be two-sided for elders. While some grandmothers encouraged mothers to breastfeed, some mothers had to negotiate with grandmothers who insisted on using formula. But some mothers revealed that even though the elders insisted on using infant formula in the beginning, they became more supportive for breastfeeding after seeing the positive results of their grandchildren on breast milk. Therefore, it is likely that the grandparents who are supportive of formula could benefit from improved knowledge and increased awareness of the benefits of breastfeeding. Based on the findings from this study, it is recommended that elders should be included in prenatal or breastfeeding education to understand the benefits of breastfeeding. Instead of encouraging the use of formula to lessen the stress for working mothers, elders who are supportive of breastfeeding can work with mothers as a team to achieve breastfeeding success together.

#### Potential harmful practices

*Zuo yuezi* (YYZ) is a 30-day long postpartum practice that consists of dietary and activity restrictions that are believed to help postpartum mothers recuperate after giving birth, prevent long-term illnesses, and improve milk supply through regulating the homeostasis in the body (Chien, Tai & Ko et al., 2006). Most mothers in the present study followed the traditional practice, which is similar to the literature that Chinese people valued and continued their cultural beliefs

even years after migrating to a new country. The ZYZ practice was also found to be prevalent among Chinese mothers in China and other foreign countries (Tsai et al., 2011; Raven et al., 2007; Holroyd, Lopez & Chan, 2011; Chien et al., 2006; Cheng & Pickler., 2009; Xie, Yang & Liao et al., 2010; Cheng, 1997). Since the purpose of the practice is for the mother to recuperate her strength from giving birth, “cold” foods, such as many types of fruits and vegetables were considered harmful and avoided. On the other hand, mothers were advised to consume more of the “hot” food but many of the “hot” foods also tended to be higher in fat and calories. From her diet, a mother reported that she developed abnormal blood lipid panels temporarily for 3-weeks postpartum.

Besides the dietary restrictions, mothers were advised to rest and prevent from catching “wind” by staying home during the entire ZYZ 30-day period unless going to doctors’ appointments. Due to being homebound, many mothers experienced extreme sadness during that period and some even said that it affected their breast milk production and believed the sadness could be alleviated if they were allowed to go outside for walks. There have been a number of studies exploring the ZYZ practices among postpartum mothers. When measuring the level of adherence and depression among Chinese mothers in Taiwan, it was found that the adherence levels were negatively associated with the degree of depression, indicating the practice was helpful for reducing depressive symptoms (Chien et al., 2006). On the other hand, a study that investigated the outcome of ZYZ practice among 152 mothers in the US found that more than half of the mothers experienced certain levels of depressive symptoms (Cheng et al., 2009). The outcome of the practice seemed to possibly differ by the location of where the mothers’ ZYZ practice takes place. As social support and family involvement are a big part of this traditional practice, it is likely that, after losing a network of family and friends upon moving to a new

country, mothers who cannot afford paid ZYZ services might experience sadness more easily from staying at home all day to take care of the newborn by herself without help.

#### Influence of cultural practices on infant feeding

There were two factors reported to affect infant feeding: the gastrointestinal discomfort felt by the infant caused by drinking breast milk of the mother who was on the ZYZ diet and the decrease in breast milk production potentially caused by possible depression. While it was previously reported that certain traditional practices affected the types of food infants received during the first 30 days, such as feeding infants honeysuckle herbs, rice drink at 7-day, and adult foods at 30-days (Donaldson et al., 2010; Raven et al., 2007), mothers in this study did not feed their infants for traditional reasons during the ZYZ period.

### **SUPPORT FOR MOTHERS**

#### Husbands' support for breastfeeding

Most mothers perceived the support they received from their husbands as the most important and as being necessary for achieving breastfeeding success. The support from the husband included decision-making, feeding, watching infants while mothers express milk, postpartum maternal care, being a good listener, and financial support. Similarly, a qualitative study that looked at the influence of the husband on breastfeeding also found that the support from husbands was both physically and emotionally important (Nickerson, Sykes, & Fung, 2012). When interviewing mothers whose husbands participated in breastfeeding education, it was found that husbands might benefit from breastfeeding education and support and lactation counseling (Nickerson et al., 2012). Similarly, a randomized controlled trial study that compared breastfeeding rates between fathers who participated in breastfeeding promotion classes and those who did not also found the breastfeeding initiation rate to be higher among the intervention group (Wolfberg,

Michels, Shields et al., 2004). These similar findings indicate that with more education and training in problem-solving, husbands can make the decision for breastfeeding with the mother and provide hands-on assistance when needed.

#### Experience of expressing breast milk at work

The current recommendation set by WHO is for mothers to exclusively breastfeed for 6 months. A number of working mothers in the present study understood that after returning to work, they needed to express several times at work in order to maintain their supply. Under the New York State Labor Law § 206-c, employers are not required to pay mothers who take time for expressing milk. It is understandable why working mothers, especially those with lower educational attainment and those who work in hectic environments such as restaurants, said that expressing breast milk at work was not possible for them.

The experience of expressing breast milk at work was explored among some working mothers in the present study. The practice was found to be unsupportive even for mothers who worked in offices where lactation rooms were available due to the inconvenience of lactation room location and room-reservation arrangement. Based on the findings from the present study, as a need assessment, it is necessary to explore the current lactation support at work.

#### Support from elders in relation to reverse-migration separation or transnational parenting

Reverse-migration separation or transnational parenting has been found to be commonly practiced among Chinese immigrants in the US and other foreign countries (Kwong et al., 2008; The Globe and Mail January 2, 2007; Bohr et al., 2009; Da, 2003) but most studies in the past have focused on understanding the impact of reverse-migration separation on childhood development and parent-child relationship. Since the separation has potential implications for breastfeeding success, one of the objectives of the present study was to explore its influence on infant feeding. It was found

that some mothers' decision to use formula was influenced by the practice due to the concern that the change from breast milk to infant formula might cause digestive problems and the potential rejection of formula by infants.

In the present study, mothers who planned to practice reverse-migration separation indicated returning to work and not being able to afford childcare services were the main reasons. Although mothers were concerned about how the separation would impact their children's development, the pursuit of financial security in providing a "*warm home*" for the family seemed to outweigh everything else. A concerned mother who planned to practice reverse-migration separation also said, "*because there's a lot of pressure, so the baby is definitely going back to China*". Similar to a previous study on the prevalence of reverse-migration separation among a sample of low-income Chinese immigrants (Kwong et al., 2008), the mothers in that study also indicated returning to work was one of the reasons but the majority (81.5%) of participants indicated that they would keep children in the US if they had access to affordable and reliable childcare (Kwong et al., 2008).

While returning to work to make money for the family seemed to be a factor for practicing reverse-migration separation, Da (2003) suggested that the practice was also about the cultural implications related to grandparents' involvement in raising grandchildren. Even though some mothers in the present study were concerned about children being spoiled by grandparents, they perceived a peace of mind with elders being the primary caretaker and were worried about having their infants taken care of by nannies. One mother also reported her appreciation for the role of elders in maintaining Chinese culture for the next generation. The findings from the present study suggested that although the availability of elders provided a sense of relief and possibly prevented reverse-migration separation for some working mothers, the importance of



their role could also possibly encourage some mothers to send their infants to China to be taken care of by the elders in China.

## **SOCIAL COGNITIVE THEORY**

The present study used the Social Cognitive Theory to understand the mothers' decision-making process on infant feeding. Based on the theory as well as some of the findings from the present study, the below discussion illustrates how the internal and external factors influence the outcome of breastfeeding.

According to the internal personal factors, mothers can recognize the benefits (both for them personally and the benefits to their infants) of feeding breast milk to their infants. It promotes that mothers have the language skills in order to understand breastfeeding education and problem-solving materials. She also includes the factors of maternal confidence in her decision to breastfeed and the positive outcome of the practice.

Under the social-environmental factors, the healthcare system plays an important role in breastfeeding support and assisting mothers when they encounter physical discomfort from giving birth and breastfeeding. Healthcare professionals need to support mothers' decisions to breastfeed, provide culturally competent services to mothers with different cultural backgrounds, and recommend the introduction of solids following appropriate guidelines. The support from both husbands and elders is physically and emotionally important for mothers who wish to breastfeed.

## **STRENGTHS, LIMITATIONS AND IMPLICATION FOR FUTURE RESEARCH**

The current study is, to our knowledge, one of the first to explore this topic with Chinese immigrant mothers. One strength of this study is that the open-ended questions allowed more in-depth discussions between the researcher and the participants as well as new findings to be

explored. Additionally, the locations where the participants were recruited included two Chinese populated boroughs, Chinatown in Manhattan and Flushing in Queens. By recruiting in these Chinese population-dense areas, it increased the chance of recruiting the targeted Chinese population and as a result, increased the chance of exploring unique barriers immigrant mothers face in breastfeeding. The way the interviews were conducted in the Chinese languages helped establish trust with the Chinese-speaking mothers when sharing their stories. For example, some mothers have expressed that they perceived a sense of comfort sharing their own stories with the researcher and some participants voluntarily asked if they could refer other postpartum mothers who might be interested in being interviewed.

This qualitative interview study is not without limitations. The first limitation includes representativeness of the sample. Among all 23 participants, three of them (23%) practiced reverse-migration separation. This number is lower than the findings in a previous study (rate = 57%) conducted in two community health clinics (Kwong et al., 2008) but higher than the range (rate = 10-20%) reported in another Chinatown health center (Sengupta, New York Times; September 15, 1999). The ever breastfeeding rate among the Chinese mothers in this study was 83%, which is slightly lower than the overall rates of 88.8% among Asian in the US (Singh et al., 2003). Since some mothers were interviewed in early days postpartum, the breastfeeding rates at long-term were not available. In terms of WIC users, the percentage (57%) in this study is slightly higher than the national rate of 53% of all mothers in the US (WIC, 2012).

Second, the results are from a small sample of 23 participants that were recruited through convenience sampling and snowball sampling methods. These methods limited participants within a small circle of a community. In order to include mothers from different communities, the recruitment was done in various public areas in two separate Chinese populated boroughs.

Third, since all of the participants resided in an urban setting, their experiences and practices might not be the same as mothers in other rural settings. Due to these limitations, results are not generalizable for the overall clinical practice of healthcare professionals and the overall infant feeding experience of Chinese mothers in the US. Therefore, future research on exploring infant feeding practices among Chinese mothers should utilize a larger sample size and expand the recruiting locations to include a more nationally representative sample.

## **Conclusion**

Breastfeeding success is dependent on many factors. With the redefinition of the role of women in the workforce, wide array of infant formula on the market, and a possible lack of a support system, the success does not rely solely on the mother. When it comes to improving the experience for Chinese mothers after they migrate to a new foreign country, they face even more barriers to initiate or continue breastfeeding.

This qualitative interview study examined some of the current infant feeding and maternal postpartum practices among Chinese mothers in the US. Among the mothers who had previously given birth in China, it was found that the breastfeeding durations were shorter in the US due to the perception of enhanced safety and quality of formula in the US. Breastfeeding difficulties were common and post-hospitalization lactation support was found to be helpful for mothers who had access to the service. Potential delay in initiation of breastfeeding due to the lack of support and language barrier was reported at the hospital. The timing of introducing infant solids was found inconsistent and/or different from the recommendations set by the American Academy of Pediatrics. Mothers who adhered to the traditional postpartum practice *zuo yuezi* reported both positive and negative outcomes in which the negative outcomes potentially affected the production of breast milk. Support from both husbands and elders was

considered important and necessary for breastfeeding success. Reverse-migration or transnational parenting was reported to influence mothers' decision on choosing formula over breastfeeding.

This study sheds light on understanding some of the challenges Chinese mothers face in infant feeding, postpartum practices, and raising young children in the US. These findings are intended to help guide future studies on developing educational and policy interventions to address the needs for improving breastfeeding experiences and increase breastfeeding rates.

## Appendix 1. – Informed Written Consent



### **Department of Public Health, Food Studies and Nutrition**

426 Ostrom Ave, Syracuse, NY 13244

(315) 443-5573

#### *“Understanding Infant Feeding Practices among Chinese Mothers in New York City”*

My name is Adele Lee, and I am a Nutrition major graduate student at Syracuse University. I am inviting you to participate in a research study. Involvement in the study is voluntary, so you may choose to participate or not. This sheet will explain the study to you and please feel free to ask questions about the research if you have any. I will be happy to explain anything in detail if you wish.

As a Chinese student studying abroad, I am interested in learning more about infant feeding practices among the Chinese mothers in New York City and find out what can be done to help to increase the breastfeeding rates and improve the breastfeeding experience among the Chinese mothers. You will be asked to participate in an interview. This will take approximately 40 minutes of your time. All information will be kept confidential. This means that your name will not appear anywhere and your specific answers will not be linked to your name in any way.

Audio-recording will facilitate the process during the interview. With your permission, I would like to audio-record the interview but it can be turned off anytime you want. If not, I will take notes. The audio-record will be used only for data analysis purposes, and records will be erased when the study is complete.

The benefit of this research is that you will be helping us to understand infant feeding and childcare difficulties Chinese mothers face in New York City. This information should help us to develop necessary improvement and programs to better assist the Chinese mothers in the United States with necessary assistance.

The risk to you of participating in this study is that questions might make you feel uncomfortable. But you don't need to answer questions you don't want to and end the interview at anytime.

If you do not want to take part, you have the right to refuse to take part, without penalty. If you decide to take part and later no longer wish to continue, you have the right to withdraw from the study at any time, without penalty.

#### Contact Information

If you have any questions, concerns, complaints about the research, you can reach me at (315) 935-6618. If you have any questions about your rights as a research participant, cannot reach the

investigator, have questions, concerns, or complaints that you wish to address to someone other than the researcher, contact the Syracuse University Institutional Review Board at 315-443-3013.

All of my questions have been answered, I am 18 years of age or older, and I wish to participate in this research study. I have received a copy of this consent form.

☐ I agree to be audio recorded.

☐ I do not agree to be audio recorded.

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Participant

\_\_\_\_\_  
Signature of Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Researcher



**Department of Public Health, Food Studies and Nutrition**  
426 Ostrom Ave, Syracuse, NY 13244  
(315) 443-5573

*“了解中国母亲在纽约婴儿喂养的经验”*

我叫李圆，是一名来自雪城大学营养专业的研究生。我邀请您参加一项调查研究，此次活动完全处于自愿，您可以自由的选择加入或者退出。这份文件将会向您解释本次研究的内容，如果您对任何部分有任何问题，请告诉我，我会为您详细解释。

作为一个中国留学生，我对学习中国母亲在纽约婴儿喂养的经验十分感兴趣，我希望能通过此次研究找出该如何帮助这些母亲提高母乳喂养率以及改善母乳喂养经验的方法。您将被邀请参加一个约为30-40分钟的采访。所有相关的信息都会被保密，您的姓名不会以任何形式出现在调查问卷上。

在得到您的允许后，录音设备将会在谈话过程中被使用到，你可以选择在任何时刻停止录音。录音材料只被用作方便于后期的数据分析，所有的录音资料都会在调查研究结束后被安全的抹去。

这项研究的好处是，你将帮助我们了解到中国母亲在纽约所遇到喂养和育儿的困难。这些信息和经验，将会帮助我们去建立和改进一些相关的项目，以便能更好的为在美国的中国妈妈提供相关的支持和帮助。

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您可以选择不参加此次活动，或者在谈话中的任意时刻选择终止此次谈话，您可以在任何时刻选择退出此次活动，这些行为，不会因为您在此份文件上的签名而有任何责任追究。

联系信息

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本人所有的问题都以得到回答，本人已年满18周岁，并且愿意参加此次调查研究，本人已收到此文件的复印本。

\_\_\_\_\_ 我同意使用录音设备  
\_\_\_\_\_ 我不同意使用录音设备

\_\_\_\_\_  
参加者签名

\_\_\_\_\_  
日期

\_\_\_\_\_  
参加者姓名

\_\_\_\_\_  
研究员签名

\_\_\_\_\_  
日期

\_\_\_\_\_  
研究员姓名



## Appendix 2. – Informed Oral Consent



### **Department of Public Health, Food Studies and Nutrition**

426 Ostrom Ave, Syracuse, NY 13244

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\_\_\_\_ I agree to be audio recorded.

\_\_\_\_ I do not agree to be audio recorded.

\_\_\_\_\_  
Printed Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Researcher



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*“了解中国母亲在纽约婴儿喂养的经验”*

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\_\_\_\_\_ 我同意使用录音设备  
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\_\_\_\_\_  
参加者姓名

\_\_\_\_\_  
日期

\_\_\_\_\_  
研究员签名

\_\_\_\_\_  
日期

\_\_\_\_\_  
研究员姓名

### Appendix 3. – Recruitment Posters



## ♥ Infant Feeding Practice Sharing ♥

We're conducting a research study to understand infant feeding practices among Chinese mothers in NYC area.

Did you give birth within the last 12 months?

We would like to hear about your experience!

Participation will involve an interview and will take approximately 30 to 40 minutes of time at a location that is convenient for you.

This research study aims to improve infant feeding experience among Chinese mothers in New York City. If you're interested in participating in the study, or would like more information, please contact

**Ms. Lee at (315) 935-6618.**

**Both Cantonese- and Mandarin-Friendly**

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Ms Lee	(315) 935-6618
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<http://www.tapestryyouth.org/about-us/>



<http://gesweinfamily.com/?p=1964>

## ♥ 嬰兒餵養經驗分享 ♥

我們正進行一項研究，以提升對  
中國母親如何在紐約嬰兒餵養方面的了解，  
您是否在過去的十二個月內生過小孩？  
我們誠懇期待來自您的方法和經驗分享。

活動包括一次30-40分鐘的採訪在  
你方便時間和地點下進行

本次活動旨在幫助在紐約的中國母親改善嬰兒餵  
養經驗，如果您對本次活動感興趣，或需要諮詢  
更多相關信息，請致電  
**李小姐 (315) 935-6618。**

**粵語和普通話都可作為您對話時使用的語言**

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李小姐	李小姐	李小姐	李小姐	李小姐	李小姐	李小姐	李小姐
(315) 935-6618	(315) 935-6618	(315) 935-6618	(315) 935-6618	(315) 935-6618	(315) 935-6618	(315) 935-6618	(315) 935-6618

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## Appendix 4 – Recruitment Flyer



### ♥ 嬰兒餵養經驗分享 ♥

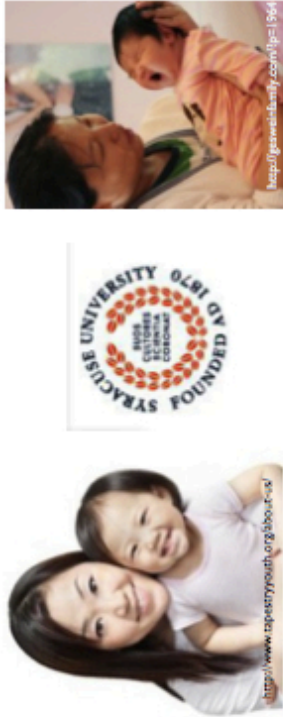
我們正進行一項研究，以提升對中國母親如何在紐約嬰兒餵養方面的了解，您是否在過去的十二個月內生過小孩？我們誠懇期待來自您的方法和經驗分享。

活動包括一次30-40分鐘的採訪在  
你方便時間和地點下進行

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Participation will involve an interview and will take approximately 30 to 40 minutes of time at a location that is convenient for you.

This research study aims to improve infant feeding experience among Chinese mothers in New York City. If you're interested in participating in the study, or would like more information, please contact

**Ms. Lee at (315) 935-6618.**

**Both Cantonese- and Mandarin-Friendly**

## **Appendix 5. –Scripts for In-Person and Phone Invitations**

### *In-Person Invitation Script (English)*

Hi, my name is Adele Lee. I'm a nutrition graduate student at Syracuse University. I'm conducting a research study to understand infant feeding practices among Chinese mothers in New York City and I know that you recently gave birth. I was wondering if you would like to participate by sharing your experience? The participation is voluntary. It will involve an interview and will take approximately 30 to 40 minutes of your time. Location will be at where it is convenient for you.

### *In-Person Invitation Script (Chinese)*

我叫李圆，是一名来自雪城大学营养专业的研究生。我正在进行一项研究去了解中国母亲在纽约喂养婴儿的经验, 我知道你最近生了小孩, 想问你有没有兴趣分享一下你的经验? 此次活动完全处于自愿，你可以自由的选择加入或者退出。你的参与是一个约为30-40分钟的采访在你方便时间和地点下进行。

### *Telephone Invitation Script (English)*

Hi, my name is Adele Lee. I'm a nutrition graduate student at Syracuse University. I'm conducting a research study to understand infant feeding practices among Chinese mothers in New York City and I know that you recently gave birth. I was wondering if you would like to participate by sharing your experience? The participation is voluntary. It will involve an interview and will take approximately 30 to 40 minutes of your time. Location will be at where it is convenient for you.

### *Telephone Invitation Script (Chinese)*

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## **Appendix 6. – Semi-Structured Qualitative Interview Question Guide**

### Participant Information

Name:

Phone number:

Email:

Address only for those who have oral consent:

Pre-Interview Questionnaire

Age:                18-20                21-30                31-40                41-50                50+

Income:           below 20k                21k – 30k                31k-40k                41k-60k                60k+

Place of Birth:                China                Hong Kong                Taiwan  
If in China, province:

Years in United States:

Previously gave birth in China/Hong Kong/Taiwan?    Yes                No

Age (in months) of the youngest US-born child:

Marital Status: Single                Married                Separated  
If Married:                Live together                Live Separate

Household Size:

Household demographics:                Husband                Other relatives

Religion:

Education level:

Work

Work Status:                (hours)/per week

### Main semi-structured interview questions

1. How do you feed your baby now?
  - a. When did you start?
  - b. How did you decide on feeding your baby this way?
    - Family/Friends/Prenatal/Hospital/OBGYN/WIC/Media/Others?
  - c. Tell me other foods you are feeding your baby besides this ...?
  - d. Tell me what have been supporting you to feed your baby this way?
  - e. Any challenge or difficulties when feeding your baby the way you want?
  - f. (If BF before but no longer) Tell me the reason you stopped breastfeeding?
  - g. What is your next plan in feeding your baby?
2. How is your baby taken care of when you have to return to work?
  - a. How did you decide on the change?
  - b. How did it affect the way you feed your baby?
  - c. How did the change help?
  - d. What do you think about childcare services in the US, in terms of price and availability?
  - e. (If use daycare or helps other than relatives) Were there relatives/neighbors nearby available to help?
  - f. (If BF) How do you feed your baby while at work?
  - g. How did you make that decision? Who support?
  - h. What do you think about expressing breast milk at work? Why/not?
    - Overall experience
3. Tell me how you started feeding your baby at birth?
  - a. How did you decide?
    - Family/Friends/Prenatal/Hospital/OBGYN/WIC/Media/Others?
  - b. Tell me other foods you fed your baby at birth besides?
  - c. How long did you use this method for?
  - d. Tell me what was supporting your method then?
  - e. (For both BF and non-BF mom) Did your family support you to breastfeed? How?
4. Tell me about any prenatal care classes you attended.
  - a. Infant feeding covered in classes? What was discussed?
  - b. Where?
    - Hospital/Community center/Other places?
  - c. When (at month)?
  - d. Language of classes?
  - e. Number of classes?
  - f. Did you have company to go with you?
  - g. How big are the classes?
    - Approximate number of moms/ teachers
  - h. How was the experience, in terms of receiving attention from the instructor and asking questions in class?
  - i. Tell me how the classes influenced the way you feed your baby.
  - j. How did the knowledge you learned help you when you have breastfeeding problems?
  - k. Anything you liked or disliked about the class?
    - Understanding of class material?

5. Tell me about any experience at the hospital, how have they influenced your feeding choice.
  - Diets prior to giving birth?
  - Shown instruction on how to breastfeed? Formula given at discharge?
  - a. Any suggestion in feeding your baby?
  - b. Was your decision supported by him/her?
  - c. When was your baby brought back to your room after doing check-up's?
  - d. Was your baby room-in with you while you were in the hospital ?
  - e. How did you choose your doctor?
    - OBGYN/Midwife
6. Did you use WIC?
  - a. How did you find out about any **government assistance** program?
  - b. How have WIC influenced your feeding choice.
    - Breastfeed / Formula
  - c. Any infant feeding suggestion given WIC?
  - d. How did they suggest you to feed your baby for when you return to work?
  - e. Tell me any class you attended at WIC?
    - Did you find them helpful?
7. Tell me about any Chinese traditions and practices you followed in the postpartum period.
  - a. For how long?
  - b. Any traditional knowledge influence the way you feed your baby?
  - c. How did/do they influence?
  - d. Tell me where you received these traditions knowledge and advice about feeding your baby?
  - e. How did the traditional practices influence you regular day-to-day activity?
  - f. How did the traditional practices influence your health? mood?
  - g. What are the reasons you follow the traditional practices?
8. How did other mothers influence the way you decide to feed your baby?
9. Did the media (including magazines, televisions, advertisement) influence the way you decide to feed your baby? How?
10. What do you know about the practice of mothers sending US-born babies back to China?
  - a. What do you think can be done to help the parents to raise children in US?

Additional semi-structured interview questions for mothers who had previously given birth in China/Hong Kong/Taiwan

1. Tell me how you fed your baby when you were in China/Hong Kong/Taiwan?
  - a. How did you decide on how to feed the baby before?
  - b. Who supported? How?
  - c. (If BF) How long did you BF for?
  - d. Were there any difficulties in China/Hong Kong/Taiwan in feeding the baby the way you want to?
  - e. Compare to when you were in China/Hong Kong/Taiwan, what are the differences on feeding your baby in the United States?

Semi-structured interview questions for mothers who experienced “reverse-migration”

1. How did you make the decision to send the baby back to ‘hometown’?
  - a. Who supported you through the process?
  - b. What are the reasons for not starting the family until later (when more financially stable)?
2. When did you decide to send the baby back to ‘hometown’?
3. How old was the baby when he/she was back to ‘hometown’?
4. How did you feed your baby before separating?
  - a. (If BF) How long did you BF for?
  - b. (If Formula) How did you decide?
  - c. Where did you get the feeding advice?
5. How was your baby brought back to ‘hometown’?
6. Are there any concerns you have for the child being separate from you?
  - a. How is the baby taken care of in ‘hometown’?
  - b. How do you support the expenses of raising the child there?
  - c. How often do you get to see him/her?
  - d. How often do you contact the family who took care of the baby?
7. What is the biggest benefit of raising the child in ‘hometown’?
  - a. US?
8. When are you planning to reunite with him/her?
  - The child coming to US / You moving back to ‘hometown’?
9. What do you think can help you raise children in the US?

### Participant Information

姓名：

電話：

電郵：

口頭同意參與者的地址：

Pre-Interview Questionnaire

年齡： 18-20                      21-30                      31-40                      41-50                      50+

收入： below 20k                      21k – 30k                      31k-40k                      41k-60k                      60k+

出生地：                      中國                      香港                      台灣  
如果在中國，省份：

年在美國：

以前在中國/香港/台灣生過小孩嗎？                      是                      否

最年輕的美國出生的孩子的年齡：                      月

婚姻狀況：                      未婚                      已婚                      分開  
如果已婚：                      一起居住                      分開住

住戶人數：

家庭人口：                      丈夫                      其他親屬

宗教：

最高教育程度：

工作：

工作狀態：                      (小時)/ 每周

### Main semi-structured interview questions

11. 你現在用什麼來餵養寶寶
  - a. 什麼時候開始?
  - b. 如何決定用這種方式餵養寶寶?
    - 家人/ 朋友/ 產前/ 醫院/ 兒科醫生/ 婦科醫生/ WIC/ 媒體/ 其他
  - c. 現在除了... 之外還有用什麼食物來餵養寶寶
  - d. 是誰在幫助你持續的使用你想用的這種方法餵養寶寶
  - e. 可以告訴我, 在你用你想用的方式餵養寶寶時遇到的困難
  - f. (If BF before but no longer) 什麼原因停止使用母乳餵養?
  - g. 下一步餵養寶寶的計劃
12. 當你要回到正常工作的時候, 是誰照顧寶寶?
  - a. 如何決定?
  - b. 變化如何影響餵養寶寶?
  - c. 變化如何幫助?
  - d. 你怎么看待在美國的托兒所, 從價格和需求兩方面說說
  - e. (If use daycare or help other than relatives) 你附近有沒有親戚或者鄰居能幫你照顧寶寶?
  - f. (If BF) 當你工作的時候你會如何餵養寶寶?
  - g. 如何決定? 是誰幫助你?
  - h. 你怎麼看待上班的時候使用擠乳器來擠母乳? 為什麼可行/ 不可行?
    - 整體體驗
13. 可以告訴我寶寶剛出生時你是用什麼來餵它的
  - a. 如何決定用這種方式餵養寶寶?
    - 家人/ 朋友/ 產前/ 醫院/ 兒科醫生/ 婦科醫生/ WIC/ 媒體/ 其他?
  - b. 當時有餵別的食物?
  - c. 用這種方法多久?
  - d. 是誰幫助你用的這種方法餵養寶寶
  - e. (For both BF and non-BF mom) 你的家人支持你餵母乳? 如何?
14. 可以告訴我你參加過任何產前課程?
  - a. 課程包括嬰兒餵養? 討論了什麼?
  - b. 在哪裡? - 醫院/ 社區中心/ 其他地方?
  - c. 何時? (哪個月)
  - d. 語言?
  - e. 多少次?
  - f. 有人陪同你一起去參加這些課程嗎?
  - g. 每個班有多大?
    - 有多少媽媽/老師
  - h. 對於受到老師的關注和問問題, 你有什麼樣的體驗?
  - i. 告訴我這個課程是什麼樣影響到你餵養寶寶的方式?
    - 建議母乳餵養/配方奶粉?
  - j. 這些知識有幫助你解決在母乳餵養時遇到的問題嗎?
  - k. 有什麼方面你比較喜歡, 或不喜歡這個課程? - 課程容易理解?



15. 在醫院有什麼經歷改變了你餵養寶寶的方式？
- 生寶寶前的膳食如何？
  - 獲得母乳餵養教育？離開時給予奶粉？
  - a. 有沒有建議你用什麼方法餵養寶寶？
  - b. 支持你的決定？
  - c. 醫務人員在檢查寶寶後，什麼時候帶它回來你身邊？
  - d. 晚上寶寶睡在你的房間？
  - e. 你是怎樣選擇你的醫生的？
    - 婦科，兒科，助產士
16. 你使用WIC嗎？
- a. 你是怎麼知道政府(援助)機構？
  - b. 可以告訴我你在 WIC診所所有什麼經歷改變了你餵養寶寶的方式？
    - 母乳？奶粉？
  - c. 有沒有建議你用什麼方法餵養寶寶？
  - d. 建議你恢復工作後如何餵養寶寶？
  - e. 上了任何課程？
    - 有用？
17. 生完孩子之後，你有沒有跟從什麼中國的傳統和習慣？
- a. 多久？
  - b. 有什麼中國的傳統和習慣影響你餵養寶寶？
  - c. 實質例子？
  - d. 你在哪裡得到這方面的意見？
  - e. 傳統的做法如何影響到了你日常的活動？
  - f. 傳統的做法如何影響到了你的健康？心情？
  - g. 是什麼原因要跟從傳統的做法？
18. 其他母親有否影響你餵養寶寶的方法？如何？
19. 媒體，包括雜誌，電視，廣告有否影響？如何？
20. 你知道有一些母親將在美國出生的寶寶送回國嗎？
- a. 你認為有什麼方法可以幫助父母在美國撫養孩子？

Additional semi-structured interview questions for mothers who had previously given birth in China/Hong Kong/Taiwan

1. 可以告訴我你在中國/香港/台灣的時候你是什麼餵養寶寶的？
  - a. 什麼決定這種餵養寶寶的方式？
  - b. 是誰幫助 或 支持你用的這種方法餵養寶寶？
  - c. (If BF) 你哺乳了多久？
  - d. 你在中國/香港/台灣用這種方式餵養寶寶的時候, 有遇到的困難嗎？
  - e. 在中國/香港/台灣和美國餵養寶寶，有什麼不一樣？

Semi-structured interview questions for mothers who experienced “reverse-migration”

1. 如何決定把寶寶送回國？
  - a. 誰在一直支持和幫助你的這個過程？
  - b. 有什麼原因不等到以後（更經濟的穩定）再開始家庭？
2. 你是什麼時候決定把寶寶送回國？
3. 在他回國時，寶寶有多大？
4. 在你和寶寶分開前你是如何餵養寶寶？
  - a. (If BF) 你哺乳了多久？
  - b. (If Formula) 如何決定？
  - c. 在那方面得到餵寶寶的意見？
5. 寶寶是怎樣被帶回國的？
6. 和寶寶分開，你有什麼顧慮？
  - a. 寶寶在國內是如何被照顧的？
  - b. 你是如何對寶寶在國內的撫養費用提供支持？
  - c. 多久見到他一次
  - d. 多久聯繫照顧寶寶的人
7. 你認為寶寶在國內長大有什麼好處？
  - a. 在美國？
8. 你準備什麼時候再與他團聚？
  - 孩子來美國 還是你搬回國
9. 你認為有什麼能幫助你在美國撫養孩子？

## Appendix 7. – Confidentiality Form for Translation Validators



### SYRACUSE UNIVERSITY

DEPARTMENT OF PUBLIC HEALTH, FOOD STUDIES AND NUTRITION  
DAVID B. FALK COLLEGE  
OF SPORT AND HUMAN DYNAMICS

#### Confidentiality Agreement

I, \_\_\_\_\_, agree to provide translation services for the research study "Understanding Infant Feeding Practices among Chinese Mothers in New York City".

I understand that all information collected for this study is to remain confidential. In adherence with this policy, I will not document, release or reveal any project data or personal information; including names, titles and other identity-revealing information of project participants. Upon completion of translation, all materials that are transferred to me will be erased from my computer within 24 hours. My signature below indicates that I fully agree to maintain the confidentiality of all project data and participants. If for any reason I feel that I am unable to uphold this policy, I will terminate my participant in this project.

\_\_\_\_\_  
Signature of translator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print name of translator

\_\_\_\_\_  
Signature of researcher

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print name of researcher

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## **Vita**

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