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Cultural Influences on Infant Feeding Practices

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Objectives After completing this article, readers should be able to:

1. Provide examples of specific cultural beliefs and traditions that affect infant feeding practices.
2. Describe the influence of acculturation in the United States (US) on infant feeding practices among immigrant mothers.
3. Recognize the problem of infant overfeeding among particular groups.
4. Outline a culturally sensitive approach to elicit personal and cultural beliefs regarding infant feeding and to provide effective infant feeding counseling for mothers from different cultural backgrounds.

"... all different cultures, whether in a tropical village or in a highly urbanized and technologically sophisticated community, contain some practices and customs which are beneficial to the health and nutrition of the group, and some which are harmful. No culture has a monopoly on wisdom or absurdity." Jelliffe D. Child Nutrition in Developing Countries: A Handbook for Fieldworkers. Washington, DC: United States Public Health Service; 1968

Introduction

Healthy infant feeding practices, including exclusive breastfeeding and delayed introduction of complementary foods, are promoted by health clinicians as well as by numerous national and international organizations. However, mothers base their infant feeding decisions on an array of factors, including their experiences, family demands, socioeconomic circumstances, and cultural beliefs.

As the number of children from immigrant families in the US increases, more pediatric clinicians are working not only with families of color who have a long heritage of living in the US spanning many generations, but also with families new to the US whose cultural backgrounds are markedly different from their own. Health professionals are faced with a growing challenge to appreciate the cultural beliefs influencing infant feeding practices for both recent immigrants as well as for resident US ethnic groups. Discussions regarding infant feeding often are the initial interaction between clinician and mother and, as such, are important in building a foundation of trust and rapport necessary for successful well child visits leading to optimal development of the infant through childhood.

This article illustrates cultural influences on infant feeding practices through four cases and reviews the evidence for effective, culturally appropriate interventions to improve infant feeding.

Case Study 1: Breastfeeding Initiation

The mother of a term 18-hour-old infant girl who is rooming in requests a bottle of formula. Although she plans to breastfeed, she does not want to put her infant to the breast in the first 2 days after birth, saying she just "doesn't have enough milk." After starting to develop a rapport with the mother, you inquire about her family support and learn that although her husband provides help, her own mother and extended family are in their native country. You probe further and ask about her personal experience with infant feeding, what makes her feel that she does not have adequate human milk, her understanding of the benefits of breastfeeding, and how you can support her and her newborn.

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Immigrants to the US

Across racial and ethnic groups, foreign-born mothers, particularly those from low-income countries, generally possess higher breastfeeding initiation and duration rates than do US-born mothers, even after accounting for socioeconomic and demographic differences. (1) Factors that facilitate acculturation, such as longer residence in the US, maternal US birth, and decreased maternal use of native language, affect breastfeeding rates negatively. (2)(3) Children whose Hispanic parents were born outside of the US have a greater likelihood of being breastfed, with the odds of breastfeeding reduced by 4% for each year that the parents reside in the US. (2)

COLOSTRUM AND PRELACTEAL FEEDINGS. Many of the world's infants are given liquids other than mother's milk in the first few days after birth, including those who eventually are breastfed exclusively. This practice of feeding infants nonmilk liquids before the first breastfeeding stems from concerns about the nutritional value of and the cultural taboos against colostrum. Although immunologic and nutritional benefits of colostrum are evident from scientific literature, its thinner consistency and yellowish color (compared with the later human milk) likely encourages these beliefs. Also, some groups believe that feeding sugared water, honey, teas, sweet oils, or butter "cleanses" the newborn's gut by promoting the elimination of meconium, which is believed to be harmful.

Prelacteal fluids fed in some traditional societies described in the literature are listed in Table 1. Infants in Durango, Mexico, have been reported to be fed an infusion of sugar water mixed with herbs 30 minutes after birth because mothers believe their milk is muy fuerte (too strong) for the baby. In Vietnam, colostrum

often is viewed to be "old milk" and discarded, and infants are fed either ginseng herbal-root tea or boiled sugar water for the first 2 to 3 postnatal days. In several African countries, common water-based prelacteal feedings given to infants in the first 3 postnatal days include sugar water, water, salty liquids, and teas as well as milk, porridge, and honey.

Although high rates of hospital deliveries make it unlikely that US-born infants will be fed prelacteal fluids in the first few days, early home discharge still raises the possibility of prelacteal fluids being fed at home. Honey is a common prelacteal feeding for many cultures, and clinicians may be unaware of such practices unless they specifically ask about its use at home to screen for the risk of infantile botulism. In addition, an underlying cultural acceptance of prelacteal feedings and avoidance of colostrum leads to delayed breastfeeding and more requests for formula to feed the newborn. Both factors interrupt the hormonal feedback to stimulate human milk production, setting up the mother for inadequate human milk production. Consistent messages regarding the benefits of early breastfeeding coupled with lactation support and the discouragement of formula supplements have been shown to increase initiation rates of breastfeeding.

HOT AND COLD CLASSIFICATION. A classification of foods as hot and cold prevails worldwide among many cultural groups and affects the desire to breastfeed the newborn. Traced to roots in ancient India, the "hot-cold" concepts are prevalent in many areas of the world, including parts of southeast Asia (more widely known as the Chinese principle of yin/yang or am/duong in Vietnam) and through Central and South America (simply referred to as caliente/frio). Inherent in this classification

Table 1. Examples of Prelacteal Feedings Given to Infants

Culture/Geographic Area	Liquids or Foods
Migrant farm workers in northern Colorado	Sugar water, water, juice, milk
Jamaica	Sugar water, mint tea, castor oil drops
Mayan-Indians in the Yucatan	Sugar water
Mexico, rural	Sugar water and freshly picked, unwashed herbs, Manzanilla (chamomile) or oregano tea with sugar (4)
Egypt	Sugar or caraway water, herbal teas, dried seeds with sugar (5)
Somalia	Sugar water, goat milk, other livestock milk, reconstituted powdered milk
Eastern Uganda	Sugar water, salty water, water, milk, porridge, honey (52%)
Zaire	Premasticated rice, mashed or pounded rice, infant formula
Rural India	Honey, butter, diluted animal milk, sugar, water, jaggery (crude brown sugar)
Vietnam	Ginseng tea, herbal-root tea or boiled sugar water (6)
This table is not meant to be comprehensive but to cover a few ethnic groups and to demonstrate the diversity of beliefs regarding prelacteal foods.	

is a belief that a state of health depends on a balance of bodily forces. Health is viewed to be a state of equilibrium between hot and cold and wet and dry. In accordance with the Greek theory of body humors and the philosophies of Confucianism and Taoism, a person's vital force, or qi, is at risk if exposed to excessive cold or heat, leading to specific types of illness.

Following this "hot-cold" belief system, some Asian mothers consider pregnancy a state of excessive heat for the body, with birth signifying an important loss of heat that leaves the mother in a vulnerable state. Cold foods are avoided in the postpartum period, and a variety of heating rituals and foods are described to help the mother regain her balance. The production of human milk requires much of this vital energy, and an "imbalanced" maternal body is believed to produce unhealthy human milk. Lack of family support for traditional postnatal heating rituals and specially prepared healing foods lead many immigrant mothers, particularly those from China and Southeast Asia, to switch to infant formula for fear that the lactating mother will suffer from a cold disease and the baby may not have access to abundant, healthy milk. In this way, the inability to continue culturally prescribed postpartum practices that are linked intimately to cultural beliefs about maternal health and production of nutritious human milk underlie the growing rates of formula supplementation among many of these immigrant mothers. Such cultural beliefs run strong among certain groups, and the clinician is more likely to be successful in counseling the parents by first identifying such belief systems and then working with the family on identifying how traditional healing and nutrition may occur simultaneously with breastfeeding.

POSTPARTUM SUPPORT. Called different names in different cultures—afatanbah/Umol bah in Somalia, d'sai kchey in Cambodia, and Chollish din in Bengali—many societies practice a 30- to 40-day postpartum period of intensive family support that keeps the mother and infant indoors to receive healing rituals and nurturing. Such practices have supported postpartum maternal survival in less advantaged societies. This period also permits sanctioned support by family and friends to help the mother and infant focus on bonding and breastfeeding. Migration to the US without establishment of a new supporting community disrupts this cultural network of support, and the lack of this support system has been identified as an important factor inducing some immigrant women to abandon breastfeeding.

The immediate postpartum period of support also is viewed by many cultures as a means to protect the mother and baby from the "evil eye." Human milk is regarded as a source of nurturance that is vulnerable to becoming tainted by a "shadow" or "evil eye" encountered while outside the home, which would be detrimental to the nursing infant. Mothers may be compelled by family members to stop breastfeeding for fear that such tainted milk may cause their children to fall ill.

Ethnic Groups of US Heritage

AFRICAN AMERICANS. African American mothers have lower rates of breastfeeding than do other US ethnic groups, but similar to European Americans, breastfeeding is more likely to occur among African American mothers who are older, married, and possess high levels of education. Cultural and personal influences overlay these factors significantly, as observed by ethnographic studies of low-income African American women. Inner-city African American women are likely to have been raised without ever witnessing an African American mother breastfeed an infant within their family or community. (7) Without the presence of breastfeeding role models and family and friends with whom to share personal experiences, myths about negative effects and the physical pain associated with nursing further fuel a tradition of formula feeding.

In-depth ethnography also reveals a value for independence among inner-city, low-income African American mothers, interpreted as a culturally evolved response to the daily unpredictable stresses and losses in life. Breastfeeding, therefore, is viewed to foster the baby's early dependence on the mother, which potentially would lead to an overly "needy" or "spoiled" personality. Such cultural and experiential barriers to breastfeeding are unlikely to be addressed in a medical environment where physicians are seen as not understanding or not able to relate to the mothers' financial concerns or personal experiences.

HISPANICS. Although Hispanic mothers in the US are more likely to breastfeed than are their white or African American counterparts, these rates are significantly lower than rates in Mexico, where most of the US Hispanic population originated. (8) A survey of Mexico in 1999 showed high breastfeeding rates, with more than 90% of mothers initiating breastfeeding and 33% of mothers still breastfeeding their children at 1 year postpartum. (9) Acculturation, commonly measured by using indicators

such as duration of US residence or language use, has a significant influence on breastfeeding rates, with less acculturated women being more likely to breastfeed exclusively. (10) US-born Mexican women are more likely to supplement breastfeeding with formula and more likely to discontinue any breastfeeding compared with Mexican-born women who have immigrated to the US. Interestingly, measures of income have little or no impact on breastfeeding compared with the impact of having lived in the US for more years. (11)

It is important for clinicians and lactation consultants to be aware that cultural beliefs discouraging breastfeeding also may exist in the setting of relatively high breastfeeding rates. Some mothers may believe that negative maternal emotions can taint the mother's milk. (12) Women of Mexican descent may be influenced by traditional beliefs and reduce or cease breastfeeding if they encounter folk illnesses associated with anger or fright (*coraje, susto*) because of concern that emotions can be transferred via maternal milk and harm the infant or cause diarrhea in the infant. (13)

Finally, cultural influences on breastfeeding vary widely by specific group because Hispanic people comprise a widely heterogeneous population. For example, lower rates of breastfeeding are reported among women of Puerto Rican compared with women of Mexican heritage. The association between acculturation and breastfeeding patterns varies by country of origin and may not be significant in all subgroups, possibly due to differing measures of acculturation, native beliefs and practices, and varying responses to acculturation. (14) (15)(16)

Suggestions for Counseling and Newborn Feeding Support

GENERAL APPROACH TO COMMUNICATION. The first step in effective infant feeding counseling is to reach a common understanding between the mother's and the clinician's perspectives, which involves a communication approach that is open-ended and empathetic. The mother may not reveal cultural beliefs with initial closed-ended questions if she feels that the US clinician might not understand or agree with traditional perspectives on breastfeeding. The practice of nonjudgmental probing with an open-minded, interested approach and more time spent listening to the mother's point of view regarding infant health and nutrition early in the clinician-patient discussions will unveil obstacles to breastfeeding. Once this common ground of understanding is reached, effective direct discussions about infant feeding and

other topics regarding infant care can be based on a stronger foundation of trust and understanding.

PRENATAL APPROACHES. Breastfeeding counseling during prenatal care visits can be key to preparing and educating mothers to breastfeed. (17) Several studies have supported the positive impact of prenatal counseling on breastfeeding initiation, exclusivity, and duration. (17)(18)(19) Prenatal care clinicians and newborn nursery nurses, therefore, may play critical roles in promoting and supporting breastfeeding as the preferred method of infant feeding. Furthermore, breastfeeding counseling during prenatal Women, Infants, and Children (WIC) program visits may have a significant impact on these families by providing consistent, culturally sensitive messages in their own languages.

MATERNAL/INFANT CARE HOSPITAL POLICIES. Written policies on breastfeeding for all staff that include education, training, encouragement of early breastfeeding initiation, and restriction of supplements and pacifiers have been shown to be critical in determining breastfeeding rates in the US. Hospitals may gain "Breastfeeding-Friendly" designation by complying with the UNICEF/WHO-sponsored "Ten Steps to Successful Breastfeeding" and by including cultural mediators and cultural competence training for staff. (20) Such steps improve understanding of the cultural beliefs and traditions surrounding childbirth and early feeding. Hospital videos and written material presented in the hospital alone, however, will not necessarily improve breastfeeding initiation and duration. African American mothers of US heritage report having been exposed to written material and even videos about breastfeeding at the hospital, but without any discussions regarding their own individual personal beliefs or experiences to help tailor the information to their needs, the positive influence of these materials are minimal. (21)

Another approach to hospital-based infant feeding is the use of midwives or doulas from the mothers' cultural community. For example, in Minnesota, immigrant Somali are supported by trained Somali midwives during labor and delivery, with early encouragement to breastfeed the newborn. (22) Nursing staff are provided in-house training on working with the midwives and are taught key Somali words useful in supporting delivery and infant feeding. Similar community-based breastfeeding peer counseling programs have been effective in increasing rates of breastfeeding initiation in Puerto Rican mothers in the US.

Case Study 2: Mixed Feedings/Maintaining Breastfeeding

A 2-month-old infant is brought by his mother to his pediatrician for his health supervision visit and immunizations. The infant was born at term by vaginal delivery to a 32-year-old woman who immigrated to the country with her husband and three other children 2 years ago. The pregnancy was uncomplicated. With the aid of an interpreter, the mother reports that she is breastfeeding through the night and day while supplementing with formula to "top him off" because he still appears hungry after breastfeeding. The baby's weight for height is at the 95th percentile. She reports some vomiting following feeding as well as episodes when the infant appears to gag, becomes red in the face, and cries. She interprets this behavior as hunger and feeds more often. You explore her beliefs and attitudes about infant feeding.

The protective benefits of breastfeeding are duration-dependent, so a longer duration of exclusive breastfeeding results in a greater beneficial effect. (23) However, few studies have differentiated between exclusive and mixed breastfeeding patterns. A national study of low-income WIC participants revealed that very few infants were breastfed exclusively (13% of infants at 1 month, with rates declining thereafter). (24) The median age at which formula was introduced was 16 days by African American mothers, 12 days by white mothers, and 20 days by Hispanic mothers.

The mother in this case is following a common practice of overfeeding by supplementing breastfeeding with formula, resulting in rapid weight gain and reflux in the infant.

Immigrants to the United States

Many immigrant women from low-income countries make significant sociocultural and economic transitions when they move to the US. Many leave a traditional setting with parenting and family support and become isolated in the US. The influences of acculturation work to reduce traditional infant feeding beliefs within the first generation of residence. Mothers attempt to assimilate in their new social settings as they are exposed to advertisements of formula and are aware of formula made available for free through government-sponsored family support agencies such as WIC and at many hospitals after delivery. Many women also are in new situations involving work and school that separate them from their infants.

Furthermore, unlike US-born mothers, many immigrant mothers possess little or no past experience with human milk pumping or storage. The concept that hu-

man milk can be placed in a bottle and fed to the infant when the mother is not available may be completely foreign to them. Finally, immigrant mothers in the US typically have limited exposure to health education messages such as the "breast is best" campaigns that may be found in their native countries because promotional messages in the US are not in their own language and not specifically designed to relate to them.

Although breastfeeding rates are typically high in many low-income countries, rates of exclusive breastfeeding may be very low, depending on governmental and cultural reinforcement of breastfeeding and the existence of commercial interests that sell formula. Several studies have revealed the frequent practice of supplementing human milk with other fluids among mothers related to the impact of large-scale milk distribution programs. Reasons for mixed feeding of infants in these groups include a belief that human milk is an incomplete food that does not increase the infant's weight significantly and a belief that human milk alone is inadequate to "fatten the baby" as a means of protecting the baby's health. (25)

RELIGION, PRIVACY, AND BREASTFEEDING. Healthy infant feeding practices encouraged by cultural traditions and religion may be overlooked and not reinforced by US clinicians. For example, the Islam religion formally recognizes the fundamental value of breastfeeding for the welfare of the child and family. The holy script of the Qu'ran (holy book of Muslims) contains references that recommend breastfeeding for 2 years: "The mothers shall give suck to their offspring for two whole years for those who desire to complete the term (2:233)."

Another important religious aspect of breastfeeding for Muslims that may interfere with breastfeeding in the US is the mother's emphasis on privacy during breastfeeding. The Islamic tradition to keep body parts covered when in front of nonfamily members can prompt Muslim women to offer formula to their infants, particularly as they face having to return to work or school or feed in more public locations. Similarly, mothers from other cultural groups view breastfeeding in public as embarrassing and potentially dangerous, often abandoning breastfeeding when the mother returns to school or work. (26)

PAST EXPERIENCES. Cultural and past experience with fears regarding infant undernutrition may drive subsequent feeding practices. So strong are these fears that cases of infant overfeeding leading to gastrointestinal reflux, oral aversion, and subsequent failure to thrive

have been reported among Somali refugee immigrants in Seattle and Minnesota as well as high corresponding rates of obesity among these groups. Focus group interviews of the Somali mothers have revealed strong community and family pressure to supplement human milk with formula to keep their infants “chubby.”

Ethnic Groups of US Heritage

AFRICAN AMERICANS. The lack of African American breastfeeding role models and support from family and community to nurse has led to short durations of breastfeeding. One study found the duration of breastfeeding to be shortest for African American mothers (median of 42 days) compared with white (52 days) and Hispanic (72 days) mothers. Interestingly, the median breastfeeding duration for immigrant mothers was twice that of US-born mothers. (24)

Perceived barriers to breastfeeding among African American mothers include the uncertainty in knowing that the baby is getting enough to eat, breastfeeding in public, concerns that human milk would leak onto clothes, and fear that no one else would be able to feed the baby, which would “tie you down.” (24)

HISPANICS. Hispanic mothers have been found to have the most favorable attitudes toward breastfeeding and correspondingly highest rates of breastfeeding initiation and longest duration. (2) Hispanic mothers tend to agree that breastfeeding brings a mother closer to her baby and helps protect babies from diseases, and they are more likely to believe that breastfeeding is easier than bottle feeding (75% of Hispanic mothers compared with 43% of white and 40% of African American mothers). (24) High rates of breastfeeding among Hispanic mothers has been offered to help explain the “Hispanic paradox,” in which health outcomes are better than might be expected based on socioeconomic status, an effect attributed to the protective effects of breastfeeding. (24)

Suggestions for Counseling and Infant Feeding Support

Despite what may appear to be overwhelming obstacles to encouraging successful breastfeeding, support from clinicians improves breastfeeding initiation and increases the likelihood that mothers will continue breastfeeding. (27) Mothers who reported having received encouragement to breastfeed from a doctor, nurse, or breastfeeding consultant during the first 12 weeks postpartum were more likely than other mothers to continue breastfeeding. Culturally sensitive communication skills are an im-

portant component to conveying infant feeding messages effectively.

THE MOTHER'S PERSONAL PERSPECTIVES, EXPERIENCE, AND PLANS. Gathering such information before counseling allows the development of a trusting rapport with the mother and shaping of the clinician's advice. If a mother's world view is not clear, a few culturally based questions might help clarify her perspectives:

- “*How did you feed your other children? How have other children in your family been fed?*” These questions may yield information on a mother's beliefs about feeding her infant.
- “*What are your plans about how and what to feed your baby in the next 2 months?*” This information may help the clinician gauge how confidently the mother is prepared to breastfeed her infant exclusively in the first 6 months after birth, open the opportunity for the mother to discuss her own perspectives, and ensure that the clinician offers appropriate healthy infant feeding suggestions prior to establishment of contrary behaviors.
- “*How do you feel about these suggestions?*” Asking this question gives the mother a chance to express whether any new information matches her world view and life.

A CULTURALLY COMPETENT HEALTH-CARE SETTING. Such a setting can be welcoming to all patients.

- Use interpreters and include posters, handouts, and pamphlets in the languages that your patients speak. Ensure that all staff receive ongoing education and training in culturally and linguistically appropriate service delivery.
- Use trained community members to counsel parents.

GENERAL CULTURAL INFLUENCES IN THE POPULATION SERVED. It is helpful to gain an understanding of such influences on infant feeding practices among the primary population that you serve, while avoiding cultural stereotypes. However, strictly held generalizations about specific groups of people can be divisive rather than helpful. There is great variety within any large ethnic group with regard to language and culture, socioeconomic status, proximity of immigration and degree of assimilation, geographic location, special needs, and personal experiences.

COLLECTING DETAILED INFORMATION. Rather than making assumptions, it is more efficient to collect detailed information.

- If a mother states that she is breastfeeding, the clinician may be quick to assume that she is exclusively breastfeeding and move onto another part of the visit's discussion. It may be more informative to ask, "*What has your baby been fed in the past 24 hours?*"
- Knowledge of the common fluids and foods other than human milk given to infants of different cultural groups may be obtained by asking specific questions, such as "*What are your feelings about giving infants honey?*" or "*Have you heard of infants being fed tea?*"
- Don't assume that certain cultural groups who tend to breastfeed in their home country are doing so in the US (eg, Hispanics). Remember that as families live longer in the US, they become less likely to breastfeed exclusively.

INFANT OVERFEEDING. Development of a trusting relationship with careful probing can help to uncover fears about undernutrition and allow for direct discussions regarding the widely divergent settings between the mother's home country and the US. Useful messages may emphasize the unlikely threat of undernutrition in the US and provide personal success stories of mothers from the same ethnic group who breastfed exclusively. Making available breast pumps and education about milk storage also can help to increase the mother's milk supply and prepare her for a smooth return to work or school. A clear explanation of stomach capacity and reflux, often with pictures, helps mothers to understand that signs they had interpreted to signify hunger actually may be from esophageal irritation due to reflux. Some mothers are concerned about the threat of obesity to the future health of the child, especially if there is a history of diabetes or obesity in the family. However, multiple studies have documented the general preference among lower income and immigrant mothers for plump or fat babies and their belief that such babies are healthy. This insight suggests that a focus on messages that promote breastfeeding as a means to avoid overweight or obesity is unlikely to be effective in changing feeding behavior.

REALISTIC GOALS FOR AN INFANT'S WEIGHT GAIN. Providing specific goals for weight at the next health supervision visit can reassure mothers of good infant growth and the adequacy of their human milk. Mothers who have low literacy may find growth grids hard to understand compared with having a goal for their infant's weight gain over time.

BASIC EDUCATION ABOUT BREASTFEEDING. Such basic education likely is lacking for many mothers, in-

cluding information on infant suckling and emptying of breasts to stimulate human milk production, impact of supplemental feedings on human milk production, on-cue feeding, and monitoring of infant elimination pattern (urine and stool).

PEER COUNSELOR PROGRAMS. Breastfeeding peer counselors and their clients typically share a common language/dialect, ethnic background, and socioeconomic status. (28) Because of such similarities, these counselors possess a deep understanding of a community's health beliefs and barriers to health-care services. They engage in one-on-one dialogue, hands-on demonstrations, teaching, and advising to provide personal support and promotion of healthy infant feeding patterns. Such activities by peer counselors support their roles as liaisons between the health-care delivery system and lay communities. By facilitating access to personal and environmental resources in a nonthreatening, friendly manner, peer counseling empowers the clients by providing a sense of control and self-efficacy. (29)

Case Study 3: Introduction of Complementary Foods

At a 4-month health supervision visit, a mother reports that she has started feeding her infant home-made rice porridge mixed with soup broth, as advised by her neighbor friends.

The American Academy of Pediatrics (AAP) recommends that complementary foods be introduced no earlier than 6 months of age because human milk provides a complete source of nutrition. However, many cultures introduce solid or semisolid foods at an early age. These foods often are given to the infant after a breastfeeding and are intended initially to complement, rather than substitute for or interfere with milk feedings. Frequently, such feedings are viewed as a means of socializing the infant into the family's diet culture.

Immigrants to United States

Complementary food feeding practices among US immigrants vary significantly, depending on the country of origin, prior rural-urban residence, and socioeconomic status. A list of first complementary foods is found in Table 2. The range and practices are wide. In Cairo, infants are breastfed exclusively for the first 40 days after birth except for the mint- or cumin-flavored sugar water fed to them when they are "colicky." After this time, the infant is not only allowed to be taken out of the home, but begins to be fed bread soaked in teas and milk, yogurt sweetened with honey, and the water from the family pot of rice, fava beans, and whole wheat cereal. When the

Table 2. **Examples of First Complementary Foods Given to Infants**

Culture/Geographic Area	First Foods
African American adolescents in the US	Cow milk, prechewed meat, mashed potatoes, cereal in bowl/bottle, vegetables, applesauce, juice, water with sugar
Chinese-, Vietnamese-, and Cambodian-Americans in California	Prechewed rice paste, rice, sweetened porridge
Asian Indian Americans	Rice and banana (kheer: dessert prepared with rice, banana, milk, and sugar), potato podimas (mashed potato with clarified butter), dhal laddu (cake prepared with roasted flour and sugar), rice khitchri (rice, lentil, and clarified butter), idli (fermented and cooked rice/lentil), chappati (bread prepared from wheat flour), Bengal gram sundal (germinated chickpea steamed with spices)
Migrant farm workers in northern Colorado	First vegetables, then grains and fruits
Mexico, rural	Soups, fruits (eg, pawpaw, banana), tortillas soaked in soup or sweetened vanilla, milk, caldo de frijol (red beans cooked and mashed into a watery soup), atolita or atole (a sweetened corn meal liquid)
Mayan-Indians in the Yucatan	Sweet soft drinks, atole, posole (atole with added coconut), soup-soaked tortilla, sugar cane
Egypt	Bread soaked in milk and tea; water from preparation of rice, fava beans, and whole wheat cereal; yogurt sweetened with honey
Jamaica	Corn meal with condensed milk, banana porridge, strained oats, crushed foods, thin porridge, gruels
Sudan	Starch gruel made either of rice or fermented sorghum
Eastern Uganda	Maize porridge, thinned mashed banana, millet, porridge, peas, cassava, sugar cane, black tea, rice water, goat milk
Zaire	Pap of cassava, banana, sorghum, millet, bidia (a gruel prepared with cassava and maize flour)
Rural India	Salty tea prepared by adding butter, salt, and various dried fruit to the boiled tea, sattu, chullipalchi (dried apricot that is soaked in water, then boiled and added to sattu, salt, spices, oil)
Arab Gulf	Mehallabia (rice pudding), fruit juices mixed with cereals and milk, mashed cooked vegetables in soup, yogurt
These results represent beliefs and practices of subgroups of these diverse immigrant populations and do not necessarily represent the attitudes and practices of the entire ethnic group.	

infant is older, mashed and peeled fava beans as well as vegetable soups are added gradually.

In Zaire, cassava, banana, sorghum, millet, and cassava-maize flour may be combined and fed to breast-fed infants during the first postnatal weeks because of a belief that human milk alone is insufficient. By 5 months of age, infants are eating cassava, rice, or beans and some fish or meat at least once a week, and by 1 year, they are eating the adult diet, even though they may continue to be breastfed for 2 to 4 years.

The wide range of weaning foods based on cultural practices are modified in the new US setting, where the types of food available to the mother are drastically different from those in her native country. Mothers who have limited education from developing countries likely understand “good foods” rather than “nutritional value.” In the US, they are faced with a very different

appearing set of grocery options from which to select. Community and family members serve as the mother’s guides in selecting complementary foods for her infant and advise her on when to feed these to her infant.

Ethnic Groups of US Heritage

AFRICAN AMERICANS. Studies have reported that African American mothers commonly supplement their infants’ diets with cereal mixed with formula in a bottle as early as 2 weeks of age. (30) Foods that require spoon-feeding, such as cereal or applesauce, were introduced around 8 weeks of age among this same group. Reasons for introducing complementary foods were based on infant cues for hunger (eg, “he wasn’t getting full”), the mother’s own desires (“I wanted her to taste it”), concerns about infant size (thin, small), desire to influence infant sleeping, and specific beliefs (need complementary

foods during hot weather). Mothers may possess a concern that milk alone may not allow the infant's stomach to get full. (31) Many mothers introduce solid foods on the advice of others, even when in direct contradiction to their clinician's advice, which highlights the importance of including other family members as targets for messages about nutrition.

HISPANICS. Hispanic mothers in the US are more likely to introduce meat as well fruit and fruit juices to their infants before 6 months, compared with Anglo-Americans, although more highly educated women may tend to delay the introduction of meat. (32) Introducing solid feedings early also may be observed in periurban Mexico, where breastfeeding rates are high (91%), but solid foods are introduced well before 3 months of age. (33)

FOOD PREPARATION AND FEEDING SETTING. Low-income mothers from settings where jar foods are not readily available and where freshly prepared foods are the norm may be less likely to accept processed foods for their infants. For example, some Somali mothers in the US express a mistrust of infant jar foods that have been on the unrefrigerated shelves of the groceries for an unknown period. They readily accept home preparation of infant foods.

The manner in which infants are fed complementary foods also may not involve a spoon. Premasticated table foods and hand feeding are common, so messages involving spoon portion sizes may not be useful. Feeding infants seated on high chairs also may not be the norm in families from some US ethnic groups and immigrant households, where the infant is fed more commonly on the caregiver's lap. Many cultures also may emphasize controlled caregiver feeding throughout early childhood, providing little opportunity for the developing child to self-feed. There is some evidence that strong and continued parental control over infant feeding may not allow the infant to respond to his or her own sense of satiety, eventually placing the child at risk for obesity or oral aversion if forced feeding occurs.

Suggestions for Counseling about Healthy Infant Complementary Foods

The clinician is more likely to succeed in delaying solid feedings if these plans are addressed at the 2-month health supervision visit rather than after solids have already been introduced.

The clinician should not assume that if the mother is feeding her child commercially prepared infant foods

that she is providing a well-balanced array of foods. Unaccustomed to commercial infant foods, mothers may believe that all jar foods are equally nutritious. Asking the mother what types of foods she has fed her infant in the past week may reveal that the infant is being fed only solids that are low in iron.

Do not overlook the roles of other caregivers and family members in encouraging healthy feeding practices. The mother may not be the sole person caring for and feeding the infant. Understanding the degree to which a grandmother, father, or other person is providing care for the infant currently and as the infant grows will help to identify important caregivers who should be included in discussions.

Learning about the common cultural feeding attitudes and practices can help direct questioning regarding infant foods. For example, familiarity with an ethnic group's proclivity toward prepared infant foods rather than store-bought foods may help to focus questions on proper preparation of infant foods instead of assuming that the infant will be fed fortified jar foods or processed cereals.

Case Study 4: Weaning to a Cup

At her toddler's 2-year health supervision visit, a mother reports that she still provides her child with cow milk from a bottle. She states that her child needs a bottle to fall asleep at night.

The AAP recommends breastfeeding for the infant's first 12 months after birth and as long after as the mother and child desire. The AAP also advises introduction of the cup at approximately 6 months of age. If bottle-feeding, the infant should be weaned completely by 15 to 18 months of age to prevent bottle caries, iron deficiency anemia, poor weight gain, and obesity. Ethnographic studies of mothers who bottle-feed their toddlers beyond 18 months describe a desire for "easy solutions" for crying toddlers as well as a means to have special bonding time with their "toddler-babies" in the setting of increased disciplinary needs for the developing child.

Immigrants to the United States

The age at which an infant is weaned to a cup frequently is influenced by cultural beliefs. East African mothers often continue breastfeeding well beyond 1 year of age but readily introduce a cup during the first postnatal year. Southeast Asian cultures often delay weaning from the bottle until 2 years of age. In the US, immigrants who typically breastfeed their infants may switch to bottle feeding and continue until 3 or 4 years of age. In addition, cultural preference for gradual rather than abrupt

change along with a child-raising philosophy that involves a reluctance to upset or disturb the child further encourage frequent and prolonged bottle-feeding.

Children from immigrant families may be at additional risk for caries due to a lack of appreciation for their children's primary teeth, which "just fall out anyway." They may not associate the presence of caries in primary teeth with risk for caries in permanent teeth and typically possess little concept of routine preventive dental visits. Correspondingly, immigrant children may be at higher risk for iron deficiency anemia due to a high volume of milk intake and lack of iron-rich solid foods in their diets.

Ethnic Groups of US Heritage

In general, African American families have been reported frequently to wean their children earlier and relatively abruptly, which corresponds with the general cultural value placed on an early development of independence. Prolonged bottle feeding after 24 months of age with milk as well as sweetened beverages has been reported to occur more often among certain other ethnic groups, including Native Americans and US-born Hispanics and Southeast Asians, a practice associated with iron deficiency in these populations. (34)

Suggestions for Counseling and Practice Regarding Weaning Toddlers to a Cup

Cultural influences on infant feeding practices necessitate culturally appropriate, nonjudgmental approaches to infant feeding discussions and education that target all family and community members who may influence feeding attitudes. Specific inquiries are necessary to identify the practice of prolonged bottle feeding as well as inappropriate nighttime bottle-feeding. However, open-ended inquiries allow the clinician to understand the setting in which transition to a cup has been delayed, such as a desire to keep the child quiet at nighttime so as not to disturb the working father's or grandparents' sleep. Certainly, the beliefs and opinions of nonparent care providers about weaning should be explored, as well as their involvement, before recommendations to the mother about changes in feeding may be expected to be successful.

Any child who is delayed in weaning from nursing or bottle at 24 months of age should be evaluated for iron deficiency anemia. Because the hematocrit is not a sensitive screening test for iron status, a zinc protoporphyrin-heme ratio may be used as an inexpensive capillary blood screening test for iron deficiency in the toddler population. (35) Finally, evaluation for dental caries is indicated

for any child taking human milk or formula at night with early, regular visits to a dentist for routine monitoring.

Effective Public Policy

Effective strategies to promote healthy infant feeding practices in the culturally diverse US population require unified approaches from the triad of clinicians, community groups, and public organizations. Evidence-based recommendations and persistent advocacy for public policies that support healthy infant feeding practices may take the following forms:

- Advocacy against media portrayal of high-calorie formulas as a healthy option for picky eaters who have adequate weight gain patterns.
- Advocacy for culturally based, protein-rich food supplements provided through WIC to encourage mothers to make healthy, culturally appropriate food choices.
- Development of breastfeeding policies to create a supportive environment for breastfeeding in the workplace and public venues, including a private place to pump breasts and place to store milk
- Greater federal resources to WIC to support lactation support services, pumps, shields, and community-outreach campaigns.

Web Sites

- Ethnomed.org
- La Leche League International: <http://www.llli.org/>
- Centers for Disease Control and Prevention: <http://www.cdc.gov/breastfeeding/recommendations/index.htm>
- Baby Friendly USA: <http://www.babyfriendlyusa.org>
- Academy of Breastfeeding Medicine Model Breastfeeding Policy: www.bfmed.org/Resources/Download.aspx?filename=Protocol_7.pdf

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