

NUTRITIONAL STATUS OF CHILDREN IN MALI

3.1 NUTRITIONAL DATA FROM THE DHS SURVEY

The last Demographic and Health Survey (EDS - Mali 1995-1996) showed that a high percentage of children age 3-36 months were malnourished. In particular, a high percentage of children were two or three standard deviations below the NCHS median weight-for-height and weight-for-age during their first year of life. More than 5 percent of children age 6-11 months were less than minus three standard deviations below the NCHS median height-for-age, while 13.7 percent were less than two standard deviations below it.

Although deficiencies in height-for-age are more likely to affect older children, their precursors are evident in the younger age groups who are already likely to be wasted or underweight. Thus, it is necessary to examine feeding practices among the youngest infants in order to assess risks among the older age groups.

The survey found a marked difference in the nutritional status of children in the capital city (Bamako) and in rural and urban areas, but very little difference among regions. Only 17 percent of the children in Bamako suffered from chronic malnutrition, contrasting with 32 percent for the rest of the country. The percentages from all urban and rural areas were 22 percent for urban areas and 33 percent for rural areas. However, Bamako had the highest rate (28 percent) of acute malnutrition (wasting), compared with 25 percent for all the rural areas. However, when all urban areas are combined and compared with all rural areas, no difference appears (24 percent versus 23 percent).

3.2 BREASTFEEDING PRACTICES IN MALI

Throughout Mali, breastfeeding is prolonged and usually on demand. Table 1 from the Demographic and Health Survey (1995-1996) indicates that supplementation usually occurs early in the child's life and before the age recommended by WHO (4-6 months), UNICEF (6 months), and USAID (6 months). At 4-6 months of age, 97 percent of children were receiving something in addition to breast milk. However, these data are based on 24-hour recall, which has been found to underestimate true consumption.¹

Age in months	Breast milk only	Formula	Other milk	Other liquids	Meat, fish, eggs	Flour, cereals	Tubers, plantains	Other	Number of children
0-1	18.7	2.3	3.4	15.4	0.8	1.7	0.8	0.5	285
2-3	7.2	3.3	5.9	17.1	0.6	2.2	0	0.6	381
4-6	2.8	4.0	9.8	21.4	3.2	9.9	4.1	4.1	571
7-9	2.2	5.7	14.0	33.8	17.3	33.3	13.0	13.0	484

Source: Mali Demographic and Health Survey 1995-1996

¹ For example, Ferguson and colleagues (1993) conducted a study of the validity of the 24-hour recall method in Ghana by using the recall method as well as weighing all foods consumed. They found that the recall method missed a major proportion of the snacks consumed and underreported the quantity of the main staple food eaten.

Table 2 shows that there was very little difference in the overall duration of breastfeeding between rural and urban areas and between regions. In all areas, it lasted on average slightly less than two years. The table shows that exclusive breastfeeding did not even occur for a full month in any of the regions.

Table 2: Median duration (in months) of breastfeeding by residence and region		
Residence and region	Median duration of breastfeeding	Median duration of exclusive breastfeeding
Residence		
Bamako	20.3	0.4
Other cities	20.8	0.5
All urban areas	20.6	0.5
Rural areas	22.2	0.5
Region		
Kayes	21.7	0.4
Koulikoro	22.0	0.4
Sikasso	23.4	0.5
Segou	20.6	0.5
Mopti	22.1	0.5
Timbouctou/Gao (urban)	19.7	0.4
Bamako	20.3	0.4

Source: Mali Demographic and Health Survey 1995-1996

Qualitative or anthropological studies of infant feeding in Mali are rare. However, one study in the inner Niger Delta found, as occurs elsewhere in Mali, that breastfeeding occurred on demand (Marriott, 1998). Ethnicity had no significant effect on breastfeeding and feeding practices. Stronger influences comprised access to additional foods or conflict in time allocation between labor and child care. Importantly, the study does suggest that heterogeneity in nursing patterns may come from differences in dietary practices. However, it was found that both groups (Bozo and Fulbe) in the study generally have lengthy periods of breastfeeding if the early giving of traditional medicines is not counted as complementary feeding.

Retrospective data from this study show a mean duration of exclusive breastfeeding of 10.6 months for Bozo women (n=34) and 10.3 for Fulani (Peulh) women (n=38). The mean age of children who have diets supplemented by solids was 18.6 months. However, liquids such as milk or gruel and traditional medicines are likely to have been given earlier. In a separate analysis of the same population, the author concludes that a decrease in suckling due to feeding solids may be offset by an increase in suckling due to the infant demanding the breast for physical affection (Marriott, 1998).

A third study by LeGrand and Mbacke (1993) reports on urban breastfeeding practices in Bamako, Mali. Median age at the introduction of foods (both porridge and solids) was 7 months, and the median age for weaning was 19 months. In general, although the mother's age did not affect timing of initiating complementary feeding, it did affect the timing of weaning. Children born to mothers at age 25 or younger were weaned earlier, and those born to mothers 40 years old or older were weaned later. Furthermore, the study found no significant differences in feeding behavior of first births and children of birth orders 2-5, although women of higher parity (who obviously were older) tend to wean later. Better-educated women and households of a higher economic status generally started complementary feeding and weaning earlier than others.

3.3 CULTURAL CONTEXT OF BREASTFEEDING AND COMPLEMENTARY FEEDING

In a two-year study of primarily Bambara and Mandinka women in periurban Bamako, breastfeeding was found to be practiced by all women, with nursing on demand (Dettwyler, 1986, 1987). Infants were nursed for comfort as well as nutrition. Weaning took place at an average age of 20.8 months. During the first few days of life, infants received water, which mothers believed should be given until the skin color changed from a lighter to a more permanent darker color. Regarding specific beliefs about breastfeeding, the Bambara people believe that breast milk is best for infants because it makes the child strong and healthy. They also believe that babies were stronger in the old days when they were fed until the age of 3-4 years and that bottle-fed infants were weaker.

At the same time, these mothers believe that formula makes a child tall but only breast milk makes a child strong, healthy, and heavy. Breast milk can be of various qualities, and if the milk is bad, the child is thin. Women see breast milk as a product from the woman's blood that serves not just as nutrition but consolidates social and lineage ties. Breast milk substitutes are not widely used, with only 15 out of 136 children (11 percent) in the study ever having received a breast milk substitute. Age was not the only factor for weaning; there is a widespread understanding that mothers should wean when they become pregnant because the stomach of a pregnant woman is said to produce a heat that will make the breastfeeding child sick. This understanding is widespread throughout Mali and constitutes the primary reason for weaning (Castle, 1992).

Other fundamental understandings about infant feeding were identified by Dettwyler (1986) and have also been reported elsewhere in Mali and repeated by the mothers interviewed here. These include the notion that first, if a child is hungry, he will eat, and if he does not want to eat, he should not be forced to eat; and second, only the child knows when he or she is hungry and when he or she is full. These understandings have important implications for the feeding of sickly or anorexic children who may have poor appetites.

In the neighborhoods where fieldwork took place, the research found that foods, food groups, or certain liquids often have a specific purpose. For example, Fulani people often distinguish between foods for growth, health, or recuperation after an illness. Although the staple meal is *to*, it is usually followed by drinking *cobal* from a calabash. *Cobal*, a light gruel made with millet and usually consumed with soured milk, often has a sprinkling of hot pepper and sugar. *Cobal* is drunk without pausing until the person feels full. Water is taken after a meal, not during, because it is believed to diminish appetite. Fresh milk is available in greater quantities during the rainy season when the cattle are better nourished. It is thought to cause fever and diarrhea in small children if not boiled, which may indicate a certain lactose intolerance in certain communities.

Last, there is a widespread practice of giving traditional medicines to small children "to clean the dirtiness out of the stomach," to encourage growth, and to prevent diarrhea. The most widespread of these is *ngouhoumi* (Peulh) or *quinqueliba* (Bambara) (*combretum micranthum*) (Latin), which has been shown pharmacologically to have antipyretic properties and is widely consumed by adults and children alike (ACCT, 1985). *Quinqueliba* is usually collected in the form of leaves and twigs, which are boiled. It may be given orally to the child from birth until approximately age five and is mixed with animal butter or the butter from the shea nut. Among the Dogon, it is usually given to infants by enema, whereby the mother takes some of the liquid in her mouth and blows it up the child's anus. This causes the child to defecate instantly and enables the mother to continue her household chores without having to worry about cleaning up after the child.

Among the communities involved in the study, previous research indicated that there is a very strongly held idea that if one has a certain food (such as tea, sugar, or milk) over a prolonged period and then the food is withdrawn or unavailable, the person will become sick with a headache or diarrhea. It is thought best not to try new or “different” foods in case the person gets used to them and then they suddenly become unavailable (Castle, 1992). This conviction emerges strongly from the findings presented here and is likely to have implications for education programs that encourage mothers to diversify weaning or complementary foods.

3.4 SOCIOECONOMIC SETTING

One of the largest countries in West Africa, Mali is also one of the oldest Islamic nations in sub-Saharan Africa. Essentially, Malians are rural people who live in herding, farming, and fishing communities. Young people migrate seasonally in search of work but return to their village for the cultivation season from July to November.

The 1970s and 1980s were disastrous years for Mali because of a drought. After the application of the structural adjustment programs of the World Bank, unemployment soared and the education and health service systems were weakened. In the early 1990s, United Nations indicators placed Mali among the five poorest countries in the world with a per capita income at US \$270, life expectancy at 45 years, literacy at 16 percent, and health services reaching barely 15 percent of the population. The rural populations were finding it harder and harder to survive. After a change in government in 1991, the country became democratic and earned widespread acclaim for its transparency and openness. At present, Mali is heavily dependent on foreign exchange through the production and export of cotton.

The Bambara people who comprise one-third of the population dominate southern Mali and make a living from growing cotton and cereals. In central Mali where the study took place, the main ethnic groups are the Fulani (Peulh) and the Dogon. The former are cattle herders practising agropastoralism, whilst the latter cultivate millet in their remote, mountainous villages. Other groups, such as the Tamasheq and the Songhai, inhabit the central and northern regions.

3.5 HOUSEHOLD FOOD SECURITY

Household food production in Mali is typical of systems found throughout the Sahel where much of the food comes from a communal family farm plus fields that are individually cultivated by family members. The family lands are usually the most fertile and closest to the household. The household head usually assigns responsibility for cultivation tasks to household members: wives, other relatives, and adolescent children.

Cash crops such as cotton and major cereals are sometimes cultivated on the family land. Other areas of family land may be allocated for the cultivation of condiments and vegetables to accompany the grains. The labor allocated to the cultivation of the family fields takes priority.

In return, household members receive grain (usually millet) for themselves and their dependents during the year. In addition, the household head also assigns small areas of private fields to other household members. The fields cultivated individually are generally located in marginal lands of poorer quality. Some families may have additional gardens where they cultivate onions, henna, peanuts, and hibiscus for sale in local markets. Hence, the household head organizes the family members as an integrated production unit balancing subsistence and commercial cultivation (Sanders, Shapiro, and Ramaswamy, 1996).

3.6 WOMEN'S ACTIVITIES

Access to land is still to a certain extent regulated by indigenous systems of land tenure. Most societies in Mali are patrilineal, and a male household head usually manages the family land. Upon his death, management passes to the male heir who is usually the deceased person's younger brother or son. Although sex segregation and the division of labor by gender is respected, women have always had access to agricultural resources and negotiating power (Koenig, Diarra, and Sow, 1998). Women rarely own or inherit fields, but women have the right to cultivate fields for themselves without actual ownership.

Women are responsible for assisting with communal household production although they may have their own field where they grow a staple crop such as millet or maize. Alternatively, women may use their land to provide the other ingredients to accompany grains since their fields are smaller. Some of this produce is sold at the market, and the rest is used for household consumption. If a woman does not have a field, then her husband provides money to buy what is necessary for food and other expenses. In general, women can choose to do whatever they want with money from the sale of crops or condiments in their fields (Koenig, Diarra, and Sow, 1998).

Among the Fulani, women's economic activities center on selling milk. A husband will give his wife fresh milk in the evening. She can choose to sell it, use it in the family *cobal* (gruel), or give it to her children. She usually sours most of it overnight and every other day sells it from door to door in her own or nearby villages. How much she needs to sell may depend on the economic status of her family; wealthier women choose to reserve more of it for their own children (Castle, 1992; Buhl, 1999).

Besides tending to their fields, women have daily domestic responsibilities, such as cooking, fetching water, and finding wood, that take up a lot of time. Although domestic tasks are divided among female members in a polygamous household or extended family, the successful execution of those tasks depends greatly on the women's access to labor and the availability of social support. Finding child care depends on social support from other members of the family. When a woman has a daughter-in-law, she is no longer required to cook and has greater control over her own labor.

Older women in good health are often productive farmers and become valuable household members. Very few female-headed households exist in rural Mali, however, since divorced women are remarried rapidly, and other unattached women are easily absorbed into existing male-headed households.

