

5. Caregiver feeding behaviours

In this section we pass from consideration of the desirable nutritional value of complementary foods to issues concerning the delivery of these foods to young, dependent children. It is essential to recognize that many interventions to improve child health and nutritional status rely on someone's behaviour, often the mother. For complementary feeding to be successful, not only must proper foods and nutrients be available in the household or community, but also feeding behaviours must be appropriate to assure that the foods are delivered successfully to the child. For example, caregivers may have to recognize that a hungry child requires a second helping or may need to encourage an anorectic child to eat. To perform these feeding behaviours, the caregiver requires adequate resources, or at least an absence of constraints to care, so that she or he can put relevant knowledge into practice. The time costs of these activities may be considerable (Leslie, 1989), and they are often added to women's already full days (McGuire & Popkin, 1989; McGuire & Popkin, 1990a; McGuire & Popkin, 1990b).

UNICEF (1997) has recognized the importance of care-giving behaviours in its conceptual model of factors that determine children's nutritional status (Figure 2). According to this conceptual framework, child survival, growth and development are affected directly by nutrient intake and health, and these are influenced, in turn, by the underlying factors of household food security, health care services and healthiness of the environment, and care of the child. "Care" refers to all of the behaviours performed by caregivers that result in food and nutrient intake, health, and the cognitive and psychosocial development of the child. These behaviours can be grouped into the major categories of:

- Care for women, such as providing appropriate rest time or increased food intake
- Breast-feeding and feeding practices
- Food preparation and food storage behaviours
- Hygiene practices
- Home health practices, including diagnosis of illness and health-seeking behaviours
- Psychosocial stimulation of children and support for their development.

This chapter will focus on feeding young children. Review papers discussing the other care behaviours have been published (Engle, 1992; Engle & Ricciuti, 1995; Huffman & Engle, 1996; Scrimshaw, Mintzer & Scrimshaw, 1990; Armstrong, 1995).

Child care can be defined as practices or actions benefiting a child's growth and development. Caring capacity is often used in a similar fashion, but it differs from care because "capacity" suggests a *potential* of a family or community to provide care, but does not specify whether the care is actually provided. Since the constraints to care are so important, this distinction is often useful. A second commonly used term, which seems to overlap with care is "infant and young child feeding practices". However, feeding practices are usually assessed by interviewing the mother, and may reflect overall patterns of reported behaviour rather than specific actions. What people actually do may or may

not be consistent with these general patterns of reported behaviour. For example, a woman may state that she introduced complementary feeding at 4 months of age, and forget the small bites offered to a curious child at 3 months because they did not seem to be significant events, and were not encoded in her memory as foods offered. If she thinks that her overall decision was to introduce complementary food at 4 months, the small bites offered earlier may be inconsistent with her overall pattern, and therefore not remembered.

Thus, in this case, the reported infant feeding practice represents a simplification of behaviours consistent with belief, but not necessarily an accurate reflection of day-to-day practices. Both beliefs and practices are important to evaluate, but the difference between them should be recognized.

5.1 Macroeconomic issues

As indicated in section 1.4, macroeconomic factors can have a strong influence on child-feeding practices. Much has been written in recent years about the effects of macroeconomic trends in developing countries, especially those related to structural adjustment, on the poor in general and on women and children in particular (e.g. see the useful collection in Bell & Reich, 1988; also World Bank, 1990 and Elson, 1991). While this literature has focused on the impact of economic decline and adjustment on food security (Sahn, 1994) and on health services more than on child care and feeding, many of the factors cited can be understood in the context of child-centred activities. In addition, of course, since households constantly balance food, health, and care needs in the allocation of their resources, economic changes that decrease food security or impede access to health services and sanitation may also have adverse impacts on child care.

The economic growth enjoyed previously by many developing countries came to a halt in the early 1980s with a sudden rise in their external debt burdens (Taylor, 1988). While the consequences of these trends are complex and not amenable to generalization, it is safe to say that cutbacks in employment, wages and service provision as a result of economic adjustment, affected the poor most severely and poor women perhaps most of all (Jolly, 1988). Women have been increasingly driven to participate in the wage sector out of economic necessity, although they have in many cases been confined to the informal sector or to low-wage jobs with no benefits. Moreover, the scarcity of employment opportunities has also led to increasing migration of men to more distant jobs. Both of these phenomena have obvious implications for women's burdens and child care (Palmer, 1985).

The social and economic disruptions caused by civil unrest, conflict and other emergency situations obviously endanger all determinants of favourable child nutrition outcomes, including good complementary feeding practices. An example of how vulnerable situations can become, in the face of major macroeconomic changes, can be seen in the study by Delpuech et al. (1996) that examined the impact of devaluation on the quality of complementary foods in two African towns. Ensuring the provision of food needs of young children remains a central preoccupation of the United Nations agencies and international nongovernmental organizations involved in emergency and refugee situations

(WHO, 1994c).

5.2 Factors affecting caregivers' ability to provide complementary feeding

At the household and community levels, the major factors that may constrain caregivers in their ability to provide care include:

- Caregiver education, knowledge, and beliefs
- Workload and time constraints
- Health and nutritional status
- Mental health, stress, and self-confidence
- Autonomy, control of resources, and intra-household allocation
- Social support from family members and community.

Some of these categories have been investigated extensively, whereas others have been studied primarily in developed countries, or await further research. The first category (knowledge, beliefs and education) represents the core capacity of the caregiver to provide appropriate care. The next three categories represent individual-level factors that facilitate the translation of capacity to behaviour, and the final two categories are family and community-level variables that facilitate this translation.

In most cases, the constraints are discussed in the following paragraphs in terms of "caregiver" rather than mother. Although a wide body of ethnographic research suggests that in almost all societies, mothers are the primary providers of care, this pattern may vary within particular situations and with the age of the child. As the classic paper by Weisner & Gallimore (1977) illustrated, in many cultures siblings begin to be major caregivers when children are beyond 1 or 2 years of age. Women's time in direct child care may drop precipitously as a child moves from breast-feeding and relative immobility during early infancy to mixed feeding and walking, during the second year of life (Ho, 1979). A second reason to use the term caregiver is that as women become involved in economic activities that preclude simultaneous child care, attention to young children will be provided by alternates without the supervision of the mother. Thus, it is necessary to broaden the focus beyond the mother to include all resources for care, whether provided by siblings, the father, other relatives, or institutions such as child care centres.

5.2.1 Caregiver knowledge, beliefs, and education

A sizeable body of literature has demonstrated positive associations between mothers' educational level and their children's health and nutritional status. Nevertheless, it has been debated whether this association indicates a causal relationship or whether formal education is really a marker for other unmeasured variables. In any case, it seems that educated women have different styles of interacting with children, which reinforces their developmental progress (Richman, Miller & Levine, 1992). Moreover, mothers with more

schooling often have greater nutritional knowledge (Ruel et al., 1992), and are thought to have increased assertiveness and higher status within the household, better ability to make use of health care systems, and more capacity to allocate resources on their own.

Although it has been suggested that feeding practices must be among the mediating factors between maternal schooling and children's nutritional status (Cleland & Van Ginneken, 1988), the relationship between women's education and complementary feeding has rarely been studied explicitly. One exception is the work of Guldan et al. (1993), who examined the feeding of children aged 4-27 months in Bangladesh with attention to parents' education levels. Educated mothers gave their children complementary foods more frequently and in more protected, cleaner settings than non-educated ones, even after controlling for wealth. Maternal education was, however, also associated with greater prevalence of bottle-feeding. Father's education was also associated with better complementary feeding practices, though less strongly.

Research on cultural attitudes concerning child complementary feeding has revealed several beliefs that could have important influences on children's dietary intake. Dettwyler (1986, 1987), in a series of reports from Mali, found that mothers tended to believe that children should control the amount of food ingested, i.e. that the child's hunger or apparent interest in food should determine the amount of food provided. Similar beliefs have been identified in other cultures (e.g. Peru - Bentley et al., 1991a). In the presence of frequent or persistent anorexia among children, this belief can lead to undernutrition. Engle (1995) found variations in these beliefs among women within a single culture; Central American mothers who felt that a child who refuses food should be encouraged to eat more had better nourished children than those who felt that a child's refusal should not trigger additional food. On the other hand, some cultures support prelacteal feeding and very early complementary feeding, which is often associated with lower nutritional status for children (see section 2.2.3.2). Finally, many food taboos for young children limit the types of foods that can be offered (van Esterik et al., 1995).

5.2.2 Time constraints

Women's time commitments to other activities have been recognized as one of the most important constraints to child care. These commitments include household production, particularly time-intensive and labour-intensive tasks, such as carrying water and gathering fuel-wood, and other economic activities, including agricultural work, informal labour, and formal labour market activities. Studies of women's time allocation indicate that they continue to spend more time than men in all work activities, and that in three Asian countries, they spend significantly more time than men in household production activities (United Nations, 1995). Some of the major time costs of household production activities are amenable to intervention, although this may be beneficial for child care only if women place a high value on the latter. Several projects that have reduced time costs for women have evaluated how the newly freed time was used. In some cases, women simply spent more effort on household production (Engle, 1983; McGuire & Popkin, 1990a; Hurtado

et al., 1994) rather than increasing attention to child care.

Women's involvement in economic activities in developing countries varies widely by region, from a high of 56-58% in eastern and central Asia, to 53-54% in sub-Saharan Africa and south-eastern Asia, 50% in the Caribbean and Oceania, about 30% in Latin America and western Asia, and 21% in northern Africa. During the past two decades men's economic activity rates have declined, whereas women's have increased substantially in all regions except sub-Saharan Africa and eastern Asia, where they were already high (United Nations, 1995).

An extensive literature on the effects of women's employment on child nutritional status and health outcomes reveals that there is not a simple association between the two. In an early review of literature, Leslie (1988) concluded that there was no systematic evidence linking women's employment with child nutritional status, and subsequent studies have not found a consistent effect of women's workload on child outcomes. Perhaps more important than work *per se* is the availability of an alternate caregiver, such as an adult female relative, who can provide high quality care in the absence of the mother. This issue is discussed further in section 5.2.6 on social support. Wage rates have also been shown to be important for children's welfare, with no negative effects on child nutritional status of maternal work for earnings seen for formal workers or those with reasonable incomes (Vial & Muchnik, 1989; Engle, 1991), but poorer anthropometric status seen for children of women who are poorly paid or who work in the informal sector, where they may dedicate long hours of work for little pay and little security of income (LaMontagne, Engel & Zeitlin, 1998; Powell & Grantham McGregor, 1985).

The link between maternal employment and the early introduction of complementary food has been investigated in a number of studies. The classic work by Nerlove (1974) comparing data from 83 societies suggested that women's participation in subsistence activities was associated with earlier introduction of complementary feeding. However, in her literature review, Leslie (1988) commented that interpretable studies on this subject are scarce, because of methodological flaws in many of the earlier studies. In the earlier reports, women's work, infant feeding and child feeding were often poorly defined, and effects were rarely analysed by age of the child. In addition, the key hypotheses in this relationship - that the added income women earn has a positive effect on child feeding, but the time away from the child has a negative effect - are difficult to judge because so few studies have quantified wage rates or time worked (Leslie, 1988). A review of more recent studies offers little reason to modify these judgements (van Esterik, 1995).

Leslie (1988) found that the most consistent finding of studies on this subject was that maternal employment seems to cause earlier introduction of complementary foods than would otherwise be the case, a relationship shown perhaps most clearly by O'Gara (1988) and Vial & Muchnik (1989). On the other hand, initiation of breast-feeding seemed relatively little affected by mothers having external work in addition to domestic chores (Leslie, 1988; Winikoff & Laukaran, 1989), a finding later echoed by others (van Esterik,

1995).

In their widely cited study of infant feeding patterns in four urban areas (Bangkok, Bogota, Nairobi and Semarang), Winikoff & Laukaran (1989) note that bottle-feeding associated with women's work outside the home was a relatively minor determinant of early cessation of breast-feeding overall, since only a small percentage of women worked outside the home. Nonetheless, in these four populations the proportion who used bottles among the women working outside was strikingly greater than among those without outside work (see also Winikoff, Castle & Laukaran, 1989). Use of feeding bottles early in the child's life was strongly associated with early cessation of breast-feeding in these populations, but this effect was independent of work status. Only in one site (Bangkok) was there a strong relationship between working outside the home and early cessation of breast-feeding. Because of the marked increase in women working outside the home in many urban areas since this study took place, a revisiting of these issues would be useful. In their recent review, Hight-Laukaran et al. (1996) found a low correlation between maternal employment and the use of breast-milk substitutes, with only about 5% use of the latter being attributed to working outside the home.

The type and location of women's work for income may also affect child feeding practices. While it may be thought that women who work for income in the home enjoy an advantage for child care and feeding, O'Gara (1988) found in Honduras that women who worked outside the home were more likely than others to regard breast-feeding as a welcome break from their activities. In this study, women who worked for income at home more often found the use of feeding bottles to be the only way to juggle their many activities at home.

Working for income may have indirect importance on a woman's capacity to engage in good complementary feeding practices. Women who work outside the home may enjoy greater prestige and self-esteem than do other women, though this phenomenon is not universal (Mubarak et al., 1990). In addition, working outside the home may open women to new ideas and attitudes, though it is not clear that all of these are conducive to better complementary feeding (Engle, 1992). These indirect benefits for women probably depend to a great degree on whether women control the income that they earn. There is increasing evidence that women do not always retain control over their earnings within the household (Katz, 1995). As it is understood that good complementary feeding depends in part on nutritional quality (vs. quantity of energy) of complementary foods, women's access to and control of cash income for the acquisition of higher-priced animal products and other "luxuries" is important. This factor has been little studied. Engle (1989) posits that the positive relationship she observed between mothers having work outside the home and children's nutritional status results from the use of this extra income for the purchase of high-quality foods for toddlers, but the association was not explicitly studied.

5.2.3 Health and nutritional status of the caregiver

Iron-deficiency anaemia is widespread among pregnant and non-pregnant women in

developing countries (ACC/SCN, 1992), with the highest rates (over 60%) in South Asia. Stunting and low body mass index (BMI) are also common among women in developing countries. Low BMI (< 18.5) has been found in 40% of women in samples from south and south-east Asia, and in 20% of women in sub-Saharan Africa. The associations between these indicators of nutritional status and care giving have rarely been studied. Supplementation with iron increased women's productivity on tea plantations (Edgerton et al., 1979; Bothwell & Charleton, 1981; Levin et al., 1990). Using very small samples, data from the Nutrition CRSP showed less active care giving among anaemic women in Egypt than in non-anaemic women. Further research in this area is needed.

5.2.4 Emotional factors

In the United States of America, a large literature links maternal depression with poor care giving and problematic outcomes for children (e.g. Rutter, 1990). This issue is summarized in much more detail in Engle & Ricciuti (1995). Despite reports of high levels of stress and depression among women in developing countries (e.g. Chakraborty, 1991), studies linking these psychological factors with child care giving have not been done. The level of confidence of the caregiver is often cited as a critical factor for complementary feeding, particularly for anorectic children, but this hypothesis has not been tested systematically (Gibbons & Griffith, 1984).

5.2.5 Control of household resources

A number of studies have suggested that mothers are more likely than fathers to allocate resources under their control to children, and that the higher percentage of household income earned by women is the most important variable explaining positive effects of maternal work for earnings on children's health and nutrition (Engle, 1991; Engle, 1993; Johnson & Rogers, 1993). Also a large literature on female-headed households or solo parents has suggested that children in these living situations sometimes do better than might have been expected based on family income because intra-household distribution practices in female-headed households favoured children more than in households headed by men (Kennedy & Peters, 1992; Onyango, Tucker & Eisemon, 1994). However, in many societies, mothers do not have the authority to make decisions regarding the care and feeding of their young children. These decisions may be made by the child's father (if he is present) or, in many cases, by a mother-in-law or older female in the husband's family. Castle (1995) found that some of the most malnourished children in her Malian sample belonged to low-status women in high-income households. She suggests that it may not be the level of household wealth that determines a mother's resources for child health, but the mother's access to these resources (Engle, Castle & Menon, 1996).

Women's social autonomy in the household is difficult to measure and has been little studied. An exception is the work of Doan & Bisharat (1990) in which women's autonomy and decision-making authority in poor Jordanian households, particularly with respect to their mothers-in-law, was associated with better nutritional status of their young children,

even when women's age, education and household size were accounted for. In this case, which the authors recognize to be peculiar to the Jordanian context, grandmothers seemed not to be the best alternate caregivers, apparently undermining the self-confidence of their daughters-in-law. Feeding practices were, however, not explicitly examined.

5.2.6 Social support

The support that is provided to the primary caregiver can include actual child care assistance, information provided to the caregiver, or emotional support. One of the most important types of social support is alternate child care. The abilities of the alternate caregiver to provide care may be particularly important for complementary feeding. Engle (1992) distinguishes between levels of care needed at various stages of development of the child. Care by anyone but the mother or a competent adult in the first year of life can be associated with higher mortality. Care needs in the second year of life are still very demanding, although the availability of good quality food and a healthy and safe environment can perhaps ameliorate the shortcomings of the caregiver. By the third year of life, many children are capable of some degree of self-care. Leslie's (1988) summary of findings suggest the possibility of negative outcomes for children of mothers who worked during the first year of life, but neutral or positive outcomes in later years of life.

The qualities of the alternate caregiver that are necessary for good child care are rarely investigated. The only variable examined so far is the age of the caregiver. Some studies suggest that care by a pre-teen caregiver is associated with lower nutritional status of the child under 2 years, when controlling for mother's education and socioeconomic status (Engle, 1991; LaMontagne, Engle & Zeitlin, 1998). These effects are not unidirectional. Although normally women's work for earnings increases after her children pass through the critical first year, Doan & Popkin (1993) found that in the Philippines, women in the lowest income groups with more than one preschool child were more likely to work than those with fewer preschool children. Presumably they had greater need to work regardless of the availability of alternate caregivers.

At present, the availability of institutional care for very young children is extremely limited in developing countries. However, several projects currently underway are attempting to provide institutional care to young children and evaluate its results (see Landers & Leonard, 1992). The quality of these programmes depends enormously on the quality of the support provided to the personnel (Young, 1995). There are examples of community organizations that have played roles in increasing child feeding when mothers were unable to do so (e.g. Iringa, Tanzania, 1992).

Although there are many examples of female-headed households providing adequate care for children, the overall trend towards increasing numbers of female-headed households, increasing percentage of women in the labour force and the increasing burden of older family members raises concerns regarding the increased burden on the primary caregivers - women (Bruce, Lloyd & Leonard, 1995). Although men should be more involved with

child care as women increase their time in the labour force, this change has been slow, with men still providing far less than an equal share of time in household chores and child care (United Nations, 1995).

Fathers may provide a particularly important source of emotional or informational support. There is some evidence that when they contribute a higher percentage of their incomes to family budgets, children are better nourished (Engle, 1993; Engle, 1995). Moreover, their opinions about child care giving can have significant effects on decisions about infant feeding and particularly breast-feeding (Scrimshaw & Hurtado, 1987; Littman, Medendorp & Goldfarb, 1992). However, little is known about fathers' beliefs and attitudes, and the possibility of increasing their involvement in nutrition intervention programmes.

5.3 Feeding behaviours

Appropriate feeding behaviours can be divided into four types: 1) adaptation of the feeding method to the psychomotor abilities of the child (spoon handling ability, ability to munch or chew, use of finger foods); 2) the activeness of the feeder, including encouragement to eat, offering additional foods, and providing second helpings; 3) responsivity of the feeder, including the affective relationship between child and feeder, timing of feeding, and positive or aversive style of interacting; and 4) the feeding situation, including the organization, frequency, and regularity of the feeding situation, whether the child is supervised and protected while eating and by whom, distraction during eating events, etc.

A long history of studies of children with non-organic failure to thrive in developed countries have documented the importance of the relationship between feeder and child and the organization of the eating situation as factors associated with poor child growth, even when food is not limited. These studies have found a number of characteristics of the feeding situation which differ between children with non-organic failure to thrive and those with normal growth. Factors associated with failure to thrive include an authoritarian disciplinary approach that may override children's internal regulatory system for hunger, low maternal responsivity and sensitivity to cues, families that are isolated, not supportive or cohesive, and possibly difficult temperaments or subtle oral/motor feeding problems in the children - in sum, a breakdown of the nurturing relationship (Black, 1995). Interventions to modify these relationships through increasing family support have met with only modest success, although one carefully executed experimental trial showed significant effects on cognitive development, although not growth, among children when the intervention began prior to 12 months of age (Black et al., 1995). Strategies that use behaviour modification, including the shaping of parental behaviour, have resulted in changes in feeding behaviours (Larson, Ayllon & Barrett, 1987).

Studies in developing countries have found associations between maternal education and specific feeding behaviours, such as location of feeding, organization of the feeding event, feeding encouragement, and use of a spoon (Guldan et al., 1993). More active feeding behaviours were in turn, associated with increased dietary intake and greater

anthropometric scores (Zeitlin, Houser & Johnson, 1989). On the other hand, in situations in which feeding encouragement is relatively low, increased encouragement of eating has been observed when children are ill (Bentley et al., 1991a) or refuse food (Engle & Zeitlin, 1996). These findings suggest that active feeding may have a compensatory role even when it is uncommon except in unusual circumstances. In any case, these feeding behaviours can have an important impact on the amount of food ingested, and should be included in investigations of complementary feeding.

5.4 Summary

To understand complementary feeding, attention needs to be paid to the specific behaviours surrounding feeding and to any constraints to care, and not just to the nutritional aspects of complementary foods. Although the data are not conclusive, given the lack of rigorous experimental studies, current evidence suggests that programmatic interventions to improve complementary feeding are not likely to succeed unless they incorporate a consideration of both behavioural factors and constraints to care in their designs. Economic and other intra-household factors will influence the types and amounts of foods given to children.

Research is needed which aims to modify these feeding behaviours, particularly in situations of non-responsive feeding, including very passive feeding or forced feeding, and to modify beliefs that place excessive control in the hands of the child. The role of children themselves in determining the care presented to them also needs to be studied. More work is needed to examine children with special needs, and the effects of child malnutrition on care giving.