
The Role of Caring Practices and Resources for Care in Child Survival, Growth, and Development: South and Southeast Asia

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Abstract. *This paper evaluates the extent to which programs for improving nutrition in seven Asian countries evaluate care practices and resources for care, and how this understanding is incorporated into their plans. Care practices and resources for care are defined according to the UNICEF framework, and the more unfamiliar care practices are described. The value of including care in nutrition programs is shown through several model programs. The significance of care not only for nutrition, but also for child development is highlighted. The most commonly mentioned care practice in the seven countries was breastfeeding, and the most widely recognized resource for care was maternal education. Care practices such as psychosocial care and care for women received less attention, as did the autonomy or decision-making power of the caregiver. Although the importance of care practices and resources for care is recognized, recommendations are general and lack specificity. Program planners will need training in scientific disciplines such as psychology or anthropology in order to develop strategies for incorporating care into nutrition and child development programs.*

Introduction

The care that children receive has powerful effects on their survival, growth, and development. In the 1950s and 1960s, Bowlby (1969) described the significance of a child's attachment to a single caregiver for normal emotional, cognitive, and physical development. About the same time, Dennis (1973) observed infants raised in orphanages who could barely sit up at two years of

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age, and could not speak. They had little emotional contact with the child-care workers in the facility, although all of their physical needs were met. As an experiment, he selected a group of infants for special treatment and assigned each child to one particular caregiver, who was asked to pick the child up, and hug and talk to the child on a daily basis. Children with this treatment changed radically; they began to talk, developed rapidly in terms of their motor behavior, and grew well. The treatment was caring. Since these early studies, much research has illustrated the importance of attachment between child and caregiver, described as a “unique and enduring bond”, and of psychosocial care in general for all aspects of a child’s survival, growth, and development (e.g., Creuzinger 1997, Holden 1996, Morison et al. 1995, Sloutsky 1997).

Care has received more attention since the relation between income per capita and child nutritional status was recognized as less significant than might have been expected. Food security or inadequate health care services were not defined as the key issue in any of the seven countries. However, in every country report under this ADB-UNICEF Regional Technical Assistance Project on Reducing Child Malnutrition in Eight Asian Countries (hereafter referred to as the Project), the importance of care practices or behaviors and resources in the etiology of nutrition difficulties were recognized. The need to focus on children below two years of age and pregnant women in order to improve nutritional status seems to be generally acknowledged.

Defining Care Practices and Resources for Care

Care refers to the behaviors and practices of caregivers (mothers, siblings, fathers, and childcare providers) to provide the food, health care, stimulation, and emotional support necessary for children’s healthy survival, growth, and development. These practices translate food security and health care resources into a child’s well being. Not only the practices themselves, but also the ways they are performed—in terms of affection and responsiveness to the child—are critical to a child’s survival, growth and development (Engle, Lhotska, and Armstrong 1997).

Food, health, and care are all necessary for healthy survival, growth, and development, according to the UNICEF conceptual framework (1990). All three elements must be satisfactory for good nutrition. Even when poverty causes food insecurity and limited health care, enhanced caregiving can optimize the use of existing resources to promote good health and nutrition in women and children. Breastfeeding is an example of a practice that provides food, health, and care simultaneously.

One way of categorizing influences on children is to divide the environment into a continuum ranging from proximal (close) to distal (distant) (Freidman and Amadeo, in press). Proximal aspects of the environment are directly experienced by the child, and include both physical and social dimensions. Distal aspects of the

environment are concerned with resources, such as availability of a water source inside the house, amount of food available on a daily basis, or the energy and knowledge of a primary caregiver, and affect child nutrition indirectly.

Care practices or behaviors are proximal aspects of the environment that are primarily social, and influence children's growth and their development. This is a wide net, and captures many behaviors that have long been recognized as important for child nutrition, such as breastfeeding, home health care, and hygiene practices, and brings in less recognized behaviors such as a family's care for women and psychosocial care. Using a single term to encompass these behaviors has the advantage of highlighting their interrelationship within the household. However, it also has the possible disadvantage of including so many behaviors that the term becomes meaningless. In order to avoid the latter problem, care practices defined here are those relevant to nutrition and growth, and have been specified as most important for child survival, growth, and development. These are: care for women, including care for pregnant and lactating women; breastfeeding and complementary feeding; psychosocial care; food preparation and food hygiene; hygiene practices; and home health practices. Some care practices have been investigated extensively, such as breastfeeding and hygiene practices, whereas others have rarely been studied, such as family support for young women to delay childbearing. Three care practices are described in greater depth below since they are less recognized: care for women, care during complementary feeding, and psychosocial care.

Specific practices for each category are shown in Table 1. For each specific care practice or resource for care, Table 1 indicates whether the country report listed it as a problem (noted as neg), suggested that it was positive and needed to be supported (pos), or made a recommendation to change it (rec). At the end of each row is the percentage of countries that mentioned the care practice or resource for care in any way. Even a rapid perusal of the table will show that some care practices are much more widely known than others.

Care practices cannot occur without resources to provide the care. Focusing on care practices without a concern for resources may lead to the unfortunate result of blaming the mother for inadequate care, rather than recognizing a lack of resources. The distal aspects of the environment that provide resources for care can be either human, economic, or organizational. Human resources at the family level include the caregivers' knowledge, beliefs, and education, and the physical and mental health and confidence to put that knowledge into practice. Economic resources include the caregivers' autonomy and control of resources, economic support, and time (plus control of that time) in order to provide care. Organizational resources include alternate caregivers and community care arrangements, and emotional support from family members and community networks (Jonsson 1995). These same three kinds of resources also occur at the community, district, national, and international levels.

Table 1: Care Practices and Resources for Care in Seven Country Reports

Care Practice or Resource	Bangladesh	Cambodia	PRC	India	Pakistan	Sri Lanka	Vietnam	Percent that Discussed Item
Care Practice: Care for Women								
Provision of extra foods during pregnancy				Neg*	Neg*	Neg*	Rec*	57
Reduce workload during pregnancy				Neg*	Rec		Neg, Rec	42
Family supports prenatal care and safe birthing								0
Family supports postpartum rest								0
Family encourages delayed age at first birth				Neg*		Pos*		14
Support for birth spacing								14
Provision of fair share of family food for females	Neg*	Neg, Rec*						42
Protection of females from abuse								0
Family supports stress reduction								0
Enhanced self-confidence and esteem								0
Protection from emotional abuse for females					Neg*			0
Adequate decision-making power for women								14
Access to family income, assets and credit					Rec		Rec	28
Workload is shared within family				Neg*	Neg*			28
Support for equal access to school for girls								0
Support for women's access to information								0
Care Practice: Breastfeeding and Complementary Feeding								
Exclusive breastfeeding for about 6 mos	Neg	Pos, Rec	Neg, Rec	Neg	Neg	Neg	Neg, Rec	85
Initiate breastfeeding within hour after birth	Neg	Rec		Neg	Neg		Neg	85
Breastfeeding on demand								0
Protection from artificial feeding	Mixed		Rec			Pos	Rec	57
Timely introduction of complementary foods	Neg-early		Neg-early	Neg-late	Neg-late	Neg-late	Neg-too early	85
Breastfeeding into second year	Pos			Pos	Pos	Pos		57
Adequate complementary foods	Neg	Rec	Neg, Rec	Neg			Neg, Rec	85
Frequent feeding	Neg	Rec					Neg, Rec	42
Adaptation of psychomotor abilities for feeding								0
Feeding responsively				Rec				14

continued next page.

Table 1. (*cont'd.*)

Care Practice or Resource	Bangladesh	Cambodia	PRC	India	Pakistan	Sri Lanka	Vietnam	Percent that Discussed Item
Adequate feeding situation				Pos		Neg	Rec	42
Ensuring adequate intra-household food distribution for children				Neg				14
Appropriate response to poor appetite								0
Care Practice: Psycho-Social Care								
Adapting behavior to child's developmental cues								0
Attention to low activity levels and slow development of child								0
Frequent positive interactions (touching, holding, talking)	Pos							28
Maintenance of valuable traditional practices		Rec						0
Encouragement of playing, exploration, talking							Rec	14
Adoption of a teaching or guiding role								0
Prevention and protection from child abuse and violence								0
Care Practice: Food Preparation								
Food preparation, cooking, and processing				Neg	Rec		Neg Rec	71
Food storage								0
Food hygiene	Neg			Neg			Neg Rec	42
Care Practice: Hygiene Practices								
Hand washing	Neg						Rec	57
Bathing and cleaning child		Rec			Neg		Rec	28
Cleaning house and children's play area		Rec					Rec	28
Adequate disposal of child's wastes		Rec					Rec	28
Use of sanitary facilities		Rec					Rec	28
Making water safe, and choosing safe water					Rec		Rec	28

Care Practice: Home Health Practices			
Prevention of illnesses			14
Diagnosing illnesses		Neg	28
Providing home treatment, feeding during illnesses		Neg	57
Using preventative and promotive health services	Rec		14
Timely seeking of curative health services			28
Control of pests			14
Avoidance of accidents	Pos		14
Prevention of abuse/violence			9
Resources for Care: Caregiver supply of:			
Knowledge, beliefs, schooling			100
Physical health and nutritional status		Neg	14
Mental health, stress, and self-confidence			14
Fathers have significant role		Neg	28
Control of family resources for childrearing			0
Sufficient time, not too much workload		Neg	57
Existence of alternate caregivers	Neg		42
Community support for care		Rec	42

Codes: Neg = Lack of practice or resource is a determining factor in nutrition problem.

Pos = Presence of practice or resource is a determining factor in nutrition.

Rec = A recommendation to improve this care practice or resource is made.

* Indicates that the rating refers to health services rather than family support. Probably refers to lack of services rather than lack of family support.

To define “resources for care” adequately, one must first assess who is providing the care, where young children are cared for, and who provides the economic support. Second, one must assess the roles of various family members in the provision of care, particularly the father. Third, decision-making processes should be examined. Finally, the language should use the word “caregiver” rather than “mother”. The notion that a child is the combined responsibility of both parents needs to be reinforced continually and at all levels.

Resources for care must be considered whenever care practices are evaluated. Most of the country reports considered these issues, but not to a satisfactory depth. All recognized the importance of maternal or parental education for child nutrition. The mother’s workload was recognized as a problem by half of the countries. Maternal physical and mental health was recognized only by one program, with none noting the importance of control of family resources for caregiving. The role of the father was ignored by many of the countries, which is surprising given the importance of his role as food purchaser and arbiter of medical care decisions, and even breastfeeding in many of these countries. Children are products of a family, not just the mother, and this perspective must be kept clearly in mind.

Caring practices and resources vary tremendously by culture; yet there is some evidence that the variations among families within one culture may be greater than those between cultures (Engle, Menon, and Haddad 1997). Children’s basic needs for food, health care, protection, shelter, and love are the same in all cultures. Differences may be seen in how each culture and each family within that culture attempts to meet these needs. Traditional knowledge may be valuable, but widespread changes in families due to urbanization, women’s increased economic role, expansion of primary education, and population increase may require changes and adaptations in care practices for which families may be ill prepared. These changes may undermine positive traditional practices.

Not only culture, but also economic conditions, governmental policies, and the ecological environment can influence care practices and resources for care (Engle, Menon, and Haddad 1997). One major influence discussed in a companion paper is the status of women (Haddad 1999).

Role of Child Characteristics

Not only the behaviors of parents, but also the characteristics of a child will influence outcomes for that child. Anorexic children require more persistent feeding than children with strong appetites. Temperament, a biologically based tendency such as the ease or difficulty with which a child approaches routine and novel situations, also influences care. A difficult or irritable child will probably evoke different and perhaps less patient caregiving than a sunny, easy-to-manage child.

These individual differences in temperament and condition have major effects on caregiving.

Some groups, such as low birth weight infants, should have an immediate claim on resources. A review of 80 studies of low birth weight infants, mostly in developing countries, showed that low birth weight children generally have poorer levels of development than normal birth weight children (Aylward et al. 1989). Grantham-McGregor et al. (1999) summarized the literature regarding effects of being small for gestational age (SGA) on children's survival, growth, and development. These children are born at term, but are low weight, suggesting that they were malnourished in utero. The literature suggests that, whereas not all SGA children are lower in cognitive ability in the first two years, there are likely to be negative effects in middle childhood, and on behavioral measures. These effects are less evident later in life. The negative effects of SGA are particularly marked when combined with an impoverished home environment.

Other child characteristics represent risks for children due to parental perceptions or cultural values. Haddad (1999) documents the significant negative effects on children of being born female. In many of the South Asian countries, girls are less preferred, less likely to receive health care, and have higher mortality rates. These effects operate through differential care practices and allocations of resources within the household.

Care for Women

The practices listed in Table 1 under Care for Women contain many that are delivered in health programs, such as antenatal care and birth spacing. However, it is the family's support for the woman in each area that is crucial. For example, care for women with respect to antenatal care is the interest and support of the family to make sure that she obtains this care. Surprisingly little information exists about the family's or community's role in supporting or ignoring women's needs, particularly during adolescence, pregnancy, childbirth, and lactation.

The Care Initiative (Engle, Lhotska, and Armstrong 1997) lists six categories of care for women.

- (i) During pregnancy and lactation, the family should support the women in obtaining extra and higher quality foods, reducing workloads, attending antenatal clinics and obtaining safe birthing, and receiving adequate postpartum rest. There is evidence that factors such as workload have a significant effect on outcomes such as birth weight (Launer et al. 1990). How much a family's support influences the woman's behavior during pregnancy and lactation is not known, although it seems likely that a family

that supports women's rights and needs for these services will be more likely to obtain them.

- (ii) Family support in reproductive health should include helping the adolescent girl delay bearing children, and supporting women in their use of family planning.
- (iii) Physical health, includes provision of a fair share of the family food, and protection of women from abuse.
- (iv) Mental health, stress, and self-confidence are domains which families can support or undermine depending on their attitudes and behavior.
- (v) Autonomy in decision making when needed is important for women, and access to the family's income and assets. Support in sharing the workload is also part of care for women.
- (vi) Assuring girls' equal access to school and women's access to continuing education is extremely important both for the current and for subsequent generation.

In Table 1, the most frequently mentioned Care for Women was the provision of extra foods during pregnancy, noted by 57 percent of the countries. However, many other important issues during pregnancy, such as work reduction or postpartum rest, do not appear as interventions in any of the programs summarized. This area in particular offers tremendous promise for interventions. A creative approach to improving family support for women is the "newly married parents" intervention described in Bangladesh. In this intervention, the importance of good nutrition during pregnancy, workload reduction, and rest for healthy children and for a healthy mother are discussed when the couple marries.

Care during Complementary Feeding

Appropriate feeding for children includes characteristics of breastfeeding, such as initiation in first hour, exclusive breastfeeding for about six months, and sustained breastfeeding to the second year. Table 1 shows that most program planners are aware of the need to improve complementary feeding and breastfeeding. These care practices received more attention than any others did. For example, 85 percent recognized the importance of encouraging exclusive breastfeeding, feeding the infant within the first hour after birth, and initiating complementary feeding at about six months.

High quality complementary food, provided from about the sixth month onward, is a key component of good nutrition (WHO 1998). However, whereas nutrition recommendations were previously only concerned with food quantity and, to some extent, food quality, many practices related to how food is actually provided to children and fed to them have also been found to influence nutrient intake (e.g., Gittelsohn et al. 1998).

Four aspects of proximal behaviors that are part of complementary feeding and that affect intake can be defined. These are: (i) adapting the feeding method to the child's psychomotor abilities (e.g., spoon handling); (ii) feeding responsively, including encouraging a child to eat, attending to possible low appetite, balancing child versus caregiver control of eating, and being affectionate or warm toward the child during feeding; (iii) creating a satisfactory feeding situation by reducing distractions, developing a consistent feeding schedule, and supervising and protecting children during eating; and (iv) timing of feeding, including feeding frequently and feeding when children are hungry.

Adaptation to Psychomotor Abilities for Feeding

Children's motor skills change rapidly during the first two years of life, requiring close attention by the caregiver. For example, by seven months of age, the gag reflex moves to the posterior third of the tongue, permitting the child to ingest solids more easily than before (Milla 1991). The time required for a child to eat a certain amount decreases with age for solid and viscous foods, but not for thinner purees. Children's abilities to hold a spoon, handle a cup, or grasp a piece of solid food increase with age and practise (Connolly and Dalglish 1988). Self-feeding with a spoon requires a number of steps which can take several months to master (Connolly and Dalglish 1988).

Feeding Responsively

This behavior can be particularly important for young children. Mothers and other caregivers that show or model for children how to eat healthy foods will encourage children's eating, especially when food quality is low. The amount of food that children consume may depend as much on the caregivers' active encouragement of eating as the amount offered (Gittelsohn et al. 1998, Bentley et al. 1991), especially when one has an infant with a difficult temperament.

Caregiver understanding of and response to children's hunger cues may be critical for adequate food intake. For example, if caregivers perceive a child's typical mouthing actions in response to new food sensations as a food refusal and cease to feed, a child will receive less food (Kotchabhakdi et al. 1987). When children are fed from a common pot, the amount eaten is not easy to determine. Having a separate

bowl for each child can help determine quantities eaten and protect the slow eater, although the person with whom the plate is shared makes a difference (Shankar et al. 1998).

Control of eating varies enormously. At one extreme, the caregiver has total control and children are force-fed, whereas at the other extreme, control is given entirely to the child. Neither extreme is good for children. When too much control is in the hands of the caregiver, force feeding, or continued and even intrusive pressure on children to eat is seen, which may lead eventually to inability to monitor food intake and to obesity (Brown et al. 1988). Passive feeding, particularly if a child has anorexia or poor appetite, may result in inadequate intake (Dettwyler 1986). Caregivers have been observed to encourage feeding only after seeing that the child is refusing to eat, which may simply result in fruitless battles.

The Feeding Situation

Where and how feeding takes place may also influence the food intake of young children. Some children are fed on a regular basis each day, sitting in a prescribed place with food easily accessible, whereas others are fed while wandering around or at a time that the caregiver finds convenient (Guldan 1993). If the main meal is prepared late at night, children may have fallen asleep before it is time to eat. Children can be easily distracted, particularly if food is difficult to eat (e.g., soup with a spoon the child is unable to use) or they don't like the taste. If supervision of feeding is not adequate, other siblings or even animals may take advantage of a young child's vulnerability and take food away, or food may be spilled on the ground.

Finally, feeding frequently has been shown to influence child nutritional status (La Montagne et al. 1998). Less than half (42 percent) of the country reports mentioned frequent feeding, and none described how to deal with children's poor appetite. The importance of the feeding style and responsive feeding was rarely noted.

Strategies are needed to make parents aware of feeding styles, support positive practices, and help them to change if necessary. Most of the program interventions recommended to improve complementary feeding practices in the country reports involved a community mobilizer with the support of a facilitator or trained leader. This model is consistent with findings from other investigations that complementary feeding practices are difficult to change without interpersonal contact (AED 1996).

Several countries focus on developing locally produced complementary foods to supplement interventions to improve feeding practices. However, as many studies have shown, simply making higher quality foods available will not in itself change patterns of child intake and growth.

Psychosocial Care

A third set of care practices that influence survival, growth, and development of children are the social, emotional, and cognitive interactions between caregivers and children (Engle, Lhotska, and Armstrong 1997; Engle and Ricciuti 1995). These practices include responsiveness of the caregiver to the child, the attention, affection and involvement that the caregiver shows, and encouragement of autonomy, exploration, and learning.

Responsiveness includes the extent to which caregivers are aware of their children's signals and needs, interpret them accurately, and respond to them promptly, appropriately, and consistently (Engle and Ricciuti 1995). Responsiveness can be illustrated by the caregiver's behavior when a child cries or fusses. If the caregiver does not have time to respond, or misinterprets the reason for the crying, they may miss an opportunity to feed the child when the child is hungry. Responsiveness is also important for developing language. Caregivers who talk to their children in simple language, and respond to children's verbal play, will help their children learn language earlier.

The most appropriate response by a caregiver changes with the child's developmental stage. For a very young child, the response to fussing may be touching and holding, whereas at an older age, it could involve talking or demonstrating appropriate behaviors.

Parents' expectations of the age at which children learn important skills like walking or speaking their first word (developmental milestones) also affects their children's development; parents who expect earlier development are likely to have children who develop earlier. Sensitivity or responsiveness is known to improve children's learning and cognitive development (Murray and Hornbacker 1997). For example, Baumwell et al. (1997) found that maternal sensitivity coded during mother/child interactions at 9 months uniquely predicted 13-month children's language comprehension—more than child's comprehension at 9 months. The mother's excessive directiveness or intrusiveness was unrelated to language development, also found in other studies (Murray and Hornbacker 1997).

Attention, affection, and involvement shown by caregivers also influences children's survival, growth, and development. The most important factor in a child's healthy development is to have at least one strong relationship or attachment with a caring adult who values the well being of the child. Lack of a consistent caregiver can create risks for children. The child needs frequent positive interactions. Valuable traditional practices should be identified and sustained as much as possible. Examples are infant massage in India, postpartum rest of mother and child in many Muslim countries, and responsiveness to child's desires in Bali. These customs may be undermined by an encroachment of Western values and urbanization.

Caregivers can also improve children's intellectual development and nutritional status by encouraging autonomy, exploration, and learning. Young children are born with the ability to learn, but they need encouragement and freedom to develop that ability. Caregivers need to provide safe conditions for play, encourage exploration, and provide learning opportunities in addition to good nutrition. These conditions may even affect growth (Super et al. 1990).

According to Table 1, psychosocial care received relatively little attention in the country reports. Only two country reports (28 percent) discussed supporting the improved interactions of caregiver and child, although others recommended the development of day care centers for children of working mothers. But there appears to be an emerging recognition that not only nutritional status, but also the development of the child are important goals for nutrition programs.

Early childhood care for survival, growth, and development (ECC-SGD) programs provide psychosocial care through a variety of interventions, including early education and socialization activities for children, education for parents, and social support for families. These programs enhance cognitive development, motivation for learning, and readiness for school (Myers 1992, Young 1997), and improve parent-child interaction and family functioning (Olds and Kitzman 1993, Benasich et al. 1992).

Significance of Child Development for Later Functioning

Psychosocial development refers to the emergence of skills and competencies that help a child adapt and function in his or her environment. These skills and competencies become more complex as the child ages and matures. Development tends to be categorized into the following domains:

- (i) *Cognitive (or mental) development*, including memory, problem-solving, and numerical understanding (and, for some authors, language development);
- (ii) *Language development*, the ability to communicate with others, to comprehend speech and express thoughts (receptive and expressive language);
- (iii) *Social-emotional development*, including an understanding of the relationship of self to other, ability to regulate oneself and one's emotions, development of social skills; and
- (iv) *Fine and gross motor development*, including child's ability to sit, walk, run, and handle small objects.

Although the ability of measures of cognitive development prior to 18 months to predict functional outcomes is disputed, pre-school measured abilities have been shown to be associated with age at school entry, school performance, and school retention in a variety of developing cultures (Pollitt and Triana 1999). As Pollitt and Triana conclude, “pre-school tests of cognitive test performance have the power to predict school enrolment and achievement and are helpful instruments to evaluate the success of early childhood development programs in fostering educational competence”(p. 52).

Programs to improve children’s development (ECCD programs) have been shown to have long-term impacts on functioning, as summarized in Pelto, Dickin, and Engle (in press). Although benefits are difficult to quantify, calculations provide a good indication of the value of investing in early childhood. Benefits have been shown in areas such as:

- (i) increased human resource development (via better school achievement);
- (ii) cost savings and increased efficiency of primary schooling (lower rates of grade repetition and remedial education);
- (iii) higher educational attainment;
- (iv) increased earning potential;
- (v) reductions in juvenile delinquency and its associated costs;
- (vi) increased commitment to marriage; and
- (vii) increased social mobilization and community involvement, and reduced social and economic inequalities in developing countries (Zigler et al. 1992, Barnett 1995, Myers 1992).

One early childhood care and development program in the United States, the Perry Preschool Project, is a concrete example of the economic value of such programs. A cost-benefit assessment conducted when the project participants reached young adulthood concluded that the benefits to society outweighed the project costs more than five fold (Barnett 1985, 1995). When participants turned 27 years of age, an even greater benefit was found—an estimated US\$7 for each dollar invested (using constant dollars).

Evidence for the Effectiveness of Care in Interventions

Research indicates that care practices are associated with improved survival, growth, and development (see Pelto, Dickin, and Engle 1999). Specific interventions to improve care practices, such as breastfeeding, have shown significant impacts on child growth. But much work remains to be done; many care practices have not been systematically investigated, and we do not yet have universally accepted agreements on the measurement of care practices, or some of the resources for care (Engle, Menon, and Haddad 1999).

Correlational Studies

A number of studies have found correlations between care practices and child growth and development, even controlling for household economic resources. For example, Galler et al. (1998) examined the relationships between feeding practices and child growth in Barbados, and found that reported feeding practices such as breastfeeding preference and feeding intensity predicted later growth. Range, Naved, and Bhattarai (1997) identified a number of care practices in Bangladesh that were associated with better growth. Several recent reviews have summarized the correlational data showing effects of these variables on growth and on development (Engle, Menon, and Haddad 1997; Engle and Ricciuti 1995; Zeiltein 1996; De Andraca et al. 1998).

Ruel et al. (1999) examined the relative importance of care practices and maternal education in child growth in Accra, Ghana. The data reveal that the less educated the mother, the more important adequate care practices were for explaining child nutrition. In the best-educated group, care practices were relatively insignificant in predicting child nutrition. Thus, when the circumstances are most difficult for caregivers, care may be most important.

Linkages Between the Status of Women and Care Practices/Resources for Care

As described in the Asian Enigma (Ramalingaswamy, Jonsson, and Rodhe 1996), the status of women may be the underlying variable explaining the relatively poorer nutritional status of children in South Asia. Low status of women may influence their access to resources for care, as well as care practices. Many of the resources for care depend on the status of women: autonomy in decision-making, control over time and resources, access to resources. Women's education is a key indicator of women's status, and is both a cause and consequence of the status of women in society. Care for women is likely to be improved when the status of women improves. Gender preferences early in life can affect the survival, growth,

and development of girls, which in turn impacts the next generation. These preferences are reflected in less effort in caring for girls. Therefore, actions to improve the status of women as described by Haddad (1999) should have positive impacts on resources for care and care practices.

Effects of Care for Child Development: Experimental Studies or Efficacy Studies

Several recent reviews of the experimental literature on the effects of various forms of early intervention on children's cognitive development provide evidence that a psychosocial intervention can have significant effects on children's development. Small-scale experimental designs that ask parents to change their behavior to facilitate development have shown effects on children's language and cognitive development using a carefully controlled experimental design (see Peltó et al. 1999).

Two major types of programs exist: child-focused programs that provide services directly to children through day care or center care, and parent-focused programs, which aim to improve the parents' abilities to provide care, either through teaching specific skills or improving their life skills. Home visiting programs, often combined with group sessions, provide caregivers with new activities and materials to use with their children, with new skills for child management, information about child development and nutrition, and personal support to improve the ability of the caregiver to provide care. Some programs provide job and literacy training for caregivers.

Child-focused, high-quality child development activities implemented to acceptable standards in childcare centers have consistently shown a positive impact on cognitive function and IQ scores in the US and in other developed and developing countries (Consortium for Longitudinal Studies 1983, Haskins 1989, Gomby et al. 1995, Hertzman and Wiens 1996, Grantham-McGregor et al. 1991). Most of these programs have been with children of preschool age, but some included infants. There are questions about the possible risks of infant day care, particularly when it is not high quality (NICHD 1997).

Parent-focused programs have also been shown to be effective. In the US, programs promoting improved parenting skills through home visits have shown modest effects on cognitive outcomes (Gomby et al. 1995). Home-visiting has been found to be an effective component of programs targeting low birth weight and premature infants (Olds and Kitzman 1993, Hertzman and Wiens 1996), nonorganic failure-to-thrive children (Black et al. 1995), and undernourished children in developing countries (Grantham-McGregor et al. 1991, Waber et al. 1981). Olds and Kitzman (1993) reviewed four randomized trials of home visiting interventions that were designed to work with parents to improve the cognitive development of preterm and low birth weight newborns. All of the trials found consistent evidence of increased

mental test performance. In programs that are aimed at parents and children who are at social and economic risk, the results are more mixed than for those interventions directed to families of preterm and low birth weight infants (Olds and Kitzman 1993).

A home visiting intervention to train mothers was also found to be effective in Turkey. The home visiting program for mothers was designed to help them foster cognitive development using the Home Intervention Program for Preschool Youngsters curriculum, and become sensitized to their child's needs. The effects of this program were assessed in combination with three different childcare arrangements in a crossed condition design with three levels of type of preschool program (attending preschool programs with educational aims vs. custodial day care programs vs. staying at home) and two levels of mother participation in home training (participated or not). Mothers' participation in the home training program was associated with better scores on cognitive tests and school performance four years later, particularly when combined with an educationally oriented program (Kagitcibasi et al. 1988). Children who had been more deprived initially profited more. At a follow-up when the children were between 13 and 15 years of age, the home visiting intervention continued to be significant, whereas the educational day care intervention was not. Most notably, children in the home visiting group were significantly more likely to remain in school than those without the home visiting (87 percent vs. 67 percent). Effects were also seen for vocabulary scores, self-perception, family interaction patterns, and the mother's status in the family (Kagitcibasi 1996).

Powell et al. (1999) reported on a 12-year follow-up of a home-visiting program working with stunted children in Jamaica. The original design compared the effects of food supplementation with cognitive stimulation delivered through home visiting in a four cell design, with children either supplemented only, supplemented and stimulated, stimulated only, or neither (Grantham-McGregor et al. 1991). Initially, both interventions were found to be effective for children's cognitive development, and these effects were still seen several years later (Grantham-McGregor et al. 1997). In the most recent follow-up, only the home visiting intervention continued to have a significant effect on cognitive development; no effect of the food supplementation remained. Evaluations of home visiting or parent teaching interventions for children's survival, growth, and development should include follow-up.

Child-focused programs have been shown to be slightly more effective than parent-focused programs in developed countries such as the US (Barnett 1995, Ramey and Ramey 1998), but in developing countries, where the family may have greater impact, parent-oriented programs have been shown to have long-term impacts. Kagitcibasi (1996) proposed that in family or collectively oriented cultures, which are common in many parts of the developing world, a program that improves home interaction is likely to be relatively more significant than one which provides services directly to children.

The cost-effectiveness of these programs is difficult to assess, given the many assumptions required (Barnett 1985). However, there is considerable evidence for the cost-effectiveness of targeted programs, such as home visiting for premature infants, that has led leading researchers in the US to recommend universal postnatal home visiting programs (Gomby et al. 1993; see also Evans and Stanbery 1998).

Effects of Care for Child Growth: Experimental Studies or Efficacy Studies

There is considerable evidence that growth is affected by some care practices such as exclusive breastfeeding and appropriate disposal of wastes and excreta. More surprisingly, there is some evidence that changes in psychosocial care can have effects on physical growth. In a controlled efficacy trial in Bogota, Colombia, malnourished children provided with “maternal education” visits twice weekly from six months through three years of age were significantly taller at three years (Waber et al. 1981), and maintained that difference three years after program completion (Super et al. 1990). The presumed mechanism was that the parents were more aware of children’s needs for food, and were more likely to give them food. It is possible that parents who were alerted to children’s cognitive needs were also more responsive to nutritional needs.

Relatively few programs investigate whether and how specific care practices changed as a result of an intervention. These assessments could be useful for process evaluation. For example, in two studies, changes in parent behavior such as responsiveness, teaching behavior, and encouragement were found even when child outcomes did not change (Olds and Kitzman 1993).

Incorporating Care in Program Design

How does programming change if care is involved? Three changes can be identified. They reflect many recommendations currently being made to increase the effectiveness and sustainability of programs. These are:

- (i) to assess and support or change care behaviors in addition to distal factors such as food or health care;
- (ii) to evaluate care practices and resources from the household, or integrated, perspective; and
- (iii) to plan for additive or combined effects on care practices and resources for care through programming that considers multiple routes to change.

First, in addition to distal strategies such as increasing education or providing better services, actual care practices or behaviors should be assessed and targeted for change or reinforcement where needed. The provision of care is a critical link between food and health resources, and the child's physical and psychosocial development. For example, a health delivery system might not only provide a strategy for diagnosing illnesses, but also adapt that information to the caregivers' beliefs and knowledge about illness and illness terms used in home treatment. A program to improve complementary feeding should assess, analyze, and take action to improve not only foods, but also feeding practices such as frequency of feeding, responsiveness to children's cues of hunger, or the feeding situation.

Second, the care focus requires the program planner to evaluate household practices in support of children as an integrated whole. The same individuals are performing multiple tasks to support child health and development. An intervention might affect several care practices or resources for care, since it could result in multiple demands on time, energy, and knowledge. Costs of a program should be evaluated in terms of care. For example, a program that provides additional income generation opportunities for women should evaluate consequences of changed behaviors for care practices, such as food preparation, home health care, or care for women. Benefits of a program can also be evaluated in terms of care. A family planning program that results in longer birth spacing may provide mothers with increased available time. Teaching a caregiver to be more responsive to children's indications of hunger may also increase their tendency to respond to a child's attempts to communicate, and therefore increase speed of language development. Increasing resources for care, such as increasing help provided by fathers, may have positive effects on several aspects of care.

Third, there may be additive or interactive effects on child outcomes of changes in care practices that programs can capitalize on. Improving several aspects of care at the same time will have greater effects on child growth, or child survival, growth and development than improving only one aspect of care. Interventions to improve child nutrition or child health as well as child development may have additional impacts on child development. A child who is healthy may be more responsive to improved environmental inputs, and therefore will develop more rapidly. A more active and verbal child may also stimulate more care from busy caregivers. There is an intimate relationship between physical and psychological growth, particularly in the first years of life. Programming that includes several of these care needs simultaneously may be more able to reach families and provide the impetus for significant change in child outcomes than single-focus programs.

Examples of Programs that Involve Care

To illustrate how programs change when care is taken into account, examples of four kinds of programs for children under three years and that involve care are presented: a nutrition education project, interventions for low birth weight infants, a parent education program including both early child development and nutrition, and a child care/ day care program. In each case, program effectiveness and which component might be labeled “care” are described. These program models and others are summarized in Table 2.

Table 2: Incorporating Care into Health, Nutrition, and Integrated Programs: The Care Component and Research Evidence for its Effectiveness by Program Type

Type of Program	Care Component (Practice or Resource)	Research Evidence¹
Primary Health Care	<i>Curative:</i> Encourage active feeding and stimulation of sick children <i>Preventative and Promotive:</i> Screening for delays, provide information on care for development	Several studies are unde rway
Maternity Care	Provide social support during pregnancy to reduce stress; Providing information on caregiving skills prenatally and immediately postnatally	Randomized controlled trial of prenatal home visits resulted in decreased incidence of abuse, more positive childrearing attitudes (Olds et al. 1997) (+) Multicentric trial of social support during pregnancy showed no effects on birthweight or complications (Kitzman et al. 1997) (0)
Nutrition	<i>Education:</i> Include messages on supervision of eating, need for a separate bowl, increased monitoring of child intake, offering additional foods	AED project in Mali showed significant increases in child nutritional status, and feeding behaviors, as a result of the communication strategy (AED 1996) (+)
	<i>Education:</i> Increase resources for food by increasing the value of feeding women and children by men	AED project in Mali was able to increase fathers’ role in food purchasing (AED, 1996) (+); Iringa project in Tanzania increased men’s labor to free women’s labor (+)

continued next page.

Table 2. (cont'd.)

Type of Program	Care Component (Practice or Resource)	Research Evidence ¹
	<i>Education:</i> Combine teaching about parenting skills and interactions regarding food with food recommendations for toddlers in low-income families.	Building Blocks for Toddlers Program (Cornell University Extension) combined home visits and small groups enrolled in WIC programs. Significant differences in nutrition knowledge, food variety, and self-reported parenting strategies were found (Brink et al. 1996) (+).
	<i>Growth monitoring and promotion:</i> Teach caregivers about developmental norms as well as improved diets for young children in regular assessments, and for counseling parents with problems	“KKA” project in Indonesia: mothers were given monthly developmental norms and techniques for working with their children. No effects on nutritional status were seen (0) but feeding behaviors improved (+) (Satoto 1996)
	<i>Breastfeeding Promotion:</i> Include information on specific aspects of development during the postnatal counseling visit and during support groups	
At-risk Children	<i>Low Birth Weight Infants</i> Increase opportunities for tactile stimulation Provide opportunities for early skin-to-skin contact	(LBW) early skin-to-skin contact and rooming in → more rapid feeding initiation, higher cognitive development at 18 months (de Roiste and Bushnell 1996); (LBW) Skin-to-skin contact → increased rates of breastfeeding (Blaymore et al. 1996) (+);
	<i>LBW:</i> Home visiting for parent instruction	Infant Health and Development Program for LBW infants combined home-based activities for the first year, then center-based activities. → Significant increase in IQ (IHDP 1990)
	<i>HIV Infected children:</i> Increase cognitive stimulation; increase caregivers’ awareness of feeding problems	Behavioral consequences of HIV may affect care. Correlational studies reported language deficit (Coplan et al. 1998) and feeding difficulties (Melvin et al. 1997)
	<i>Malnutrition:</i> Increase maternal motivation to change feeding practices by seeing change in children over the two-week period.	HEARTH Model of two-week feeding and group sessions resulted in significant changes in proportion of moderately and severely malnourished children in Viet Nam and Haiti (Wollink et al. 1997). (+)

Table 2. (cont'd.)

Type of Program	Care Component (Practice or Resource)	Research Evidence ¹
Integrated Programs	<i>Home visiting programs for low-income families:</i> Include direct services for children Parent support provided to help with literacy, jobs, etc.	Results of randomized trials in US show only short-term effects on cognitive development, few effects on parents (St. Pierre et al. 1995) (0). Programs in Turkey (Kagitcibasi 1996) and Jamaica (Powell et al. 1999) show long-term and significant effects on cognitive development (+)
	<i>Community development and/or income generation:</i> Day care programs or feeding centers may be included; community mobilization for the improved growth and development of children.	
	<i>Parenting programs with health and nutrition component:</i> Provide information on growth and development of children as well as role plays and materials on responsible parenting (husband/wife relationship and rights and obligations)	In the Parent Effectiveness System in Philippines, when parents met in groups on a weekly basis to learn and role-play in 13 topics including child growth and development, health and nutrition, and husband/wife relations, they reported significant changes in their and their children's behavior. (+? – no other impact data)
	<i>Childcare programs for working mothers:</i> Strong components of both nutrition and early child stimulation are needed. Models include preschool centers and family-based care.	Some of the centers reviewed by International Center for Research on Women also showed positive effects on growth (Mehra et al. 1992) (+); Colombia home day care program (ICBF) has shown some positive effects particularly on psychosocial development, less on nutrition (ICBF 1997) (+)
School-based programs	Curriculum materials for older siblings on growth and development	

¹(+) Indicates that it was shown to be effective in an intervention trial; (0) indicates that it was not effective; blank indicates that no trial was located.

Nutrition Education Project

The Academy for Educational Development's (AED) Nutrition Communication Project (1996) used the principles of nutrition education and social marketing to create, implement, and evaluate strategies to improve maternal and child nutrition without increasing income. Over an eight-year period, projects took place in Mali, Niger, Burkina Faso, and Honduras. In each country, the strategy involved a five-step

process of (i) assessment through formative evaluation and surveys, (ii) planning, (iii) preparation of materials, (iv) implementation of the intervention, and (v) evaluation. These projects are defined as involving care because specific feeding practices in the home, and resources for care, were included in assessment, intervention, and evaluation. Other components of the project focused on increasing the supply of vitamin A (e.g., make sauces with green leafy vegetables), and these did not involve care.

The Mali project provides a good example of how care can be part of a nutrition education project (AED 1995). The nutrition problems identified in the region were wasting (11 percent), stunting (25 percent), low birth weight (15 percent), and night blindness. Formative evaluation and surveys led to the identification of problems, some of which were caring practices. Problems identified were: delayed introduction of complementary foods to nine months; 80 percent of young children's meals were not supervised, and 66 percent of children were given prelacteal feeds. Some problems identified fell under the category of care for women within the family. A family should be sure that women are allocated sufficient supplies of the family food, and that they have the autonomy and decision-making power to obtain it. In Mali, neither men nor women were aware of children and women's dietary needs, and men were responsible for many food purchases.

Based on the assessment phase, behavioral messages and targets were defined. In addition to food messages, some messages involved the process of feeding, a care practice: "Promote more appropriate active feeding behaviors; specifically, three supervised meals a day, use a separate bowl for children 6-24 months; and make sure child finishes the bowl and give more if child is still hungry" (AED 1996).

One involved resources for care and care for women: "Emphasize men's responsibility for women and children's nutrition; men can keep children happy by buying healthy food at the market" (AED 1996).

These messages were communicated through community mobilization. Some of the techniques were:

- (i) story pictures showing local women succeeding at tasks;
- (ii) interpersonal communication (mother's card, counseling cards);
- (iii) placing stickers on the mother's card to reinforce counseling messages;
and
- (iv) showing men in the pictures on the mother's card (health record card).

An evaluation of the program from 1991 through 1994 indicated significant changes from pretest to posttest in the trial villages. The number who were low

weight for height dropped from 38 percent to 28 percent in trial villages, whereas in a comparison group of villages it increased by 1 percent. Stunting was reduced from 46 percent to 31 percent without an increase in household income. Some behavioral changes were also noted. Fathers were more likely to bring food home for their families, and mothers were more likely to eat what the men brought.

In Burkina Faso, similar key target behaviors were defined. However, results were less impressive in Burkina Faso than Mali, probably because the intensity of the program was lower. In Mali, NGOs and local workers presented the message in the community and the homes, whereas in Burkina Faso, the health care workers communicated the message during health care visits.

Among the lessons learned were the following: workers dedicated to the project in order are needed for it to be effective; specific messages need to be given to specific audiences; social support for women needs to be strengthened; and different behavior changes require different methods. The authors concluded that of the problems they had identified, complementary feeding was the most difficult to change, and required intensive interpersonal communication. On the other hand, increasing intake of vitamin A required a media-based approach focused on increasing intake of specific foods.

High-risk Infants: Low Birth Weight Children

A second type of program that incorporates care into a medical facility is the treatment of low birth weight infants. A number of efficacy studies have shown in carefully controlled designs that the care practice of tactile stimulation or gentle massage will result in greater weight gain for low birth weight or very low birth weight babies (Field and Schanberg 1990, Scafidi et al. 1986, Field 1998). The authors suggest that the mechanism for the effects on growth may be that the massage increases catecholamine and vagal activity, which leads to increased food absorption. More rapid initiation of breastfeeding when combined with rooming-in was also found for low birth weight babies who received tactile stimulation (Blaymore et al. 1996). One study even reported higher cognitive development in children (DeRoiste and Bushnell 1996) as a result of postnatal tactile stimulation. The skin-to-skin contact method of handling low birth weight infants called "Kangaroo care" has been developed over the past decade. Results suggest that this care-intensive technique for handling low birth weight infants is as effective, and in some cases more effective, than incubators for both growth (Kambarami et al. 1998) and development (Feldman and Eidelman 1998). Infant massage is a traditional care practice in a number of societies and has been shown to have positive effects on growth in observational studies (Landers 1990).

In the US, a large effectiveness trial to assess the possibility of avoiding long-term deficits among low birth weight, and very low birth weight infants was

conducted. This program, the Infant Health and Development Program for low birth weight infants, combined home-based activities for the first year, then intensive center-based activities for the next two years, plus parent support groups. In a randomized trial, children receiving the home visits and center-based program showed a significant increase in IQ (IHDP 1990). The intervention was to improve the quality of the psychosocial care parents could provide, and enhance their human resources for care through home visits and support groups. The greatest impact was observed with families who were most involved, although this relationship was not necessarily causal.

Among the lessons learned from this and other programs was that these home visiting programs were most effective when the families perceived the need for the visits, which tended to be the case when families had low birth weight infants. Visits to low income families with term infants had more mixed results, perhaps because they felt less need for the intervention.

Integrated Programs: Providing Parenting Skills in Health and Nutrition, and Early Childhood Development Information Combined

The previous two examples illustrate how specific care practices can be either the main focus of a project, or can complement other interventions. The third example combines interventions to improve several care practices into an integrated program for increased effectiveness.

In the Philippines, the Parent Effectiveness Service provides low income and disadvantaged families with an opportunity to increase their knowledge and skills in 13 areas, including health and nutrition, child survival, growth, and development, and responsible parenthood (UP Social Action 1997). Families are recommended to the neighborhood parent effectiveness assembly for the sessions. About ten families (almost always represented by women) meet weekly with a social worker or a parent volunteer, to discuss the material and use role-plays and activities to learn the concepts.

Two evaluations were reported, one in 1989, the other conducted in 1993. Both were one-time surveys of parents in the program and the program leaders (posttest only, no control groups). These evaluations suggest that parents are generally pleased with the program. They report positive changes in their own behavior, and in their interactions with their children. In both evaluations, most parents did not attend all of the sessions. No objective measure of impact was taken.

A number of lessons were learned. When parents in the evaluation sample were asked to identify their child care activities, 81 percent mentioned feeding, and 56 percent mentioned grooming. Very few mentioned psychosocial care for child development. Evidently, psychosocial care was a less salient care practice than feeding and cleaning. Not surprisingly, parents found the sessions on child develop-

ment less useful than those on health and nutrition. The most valuable sessions from the perspective of the parents and the social workers were on husband/wife relationships and responsibilities and duties of parents, including rules of the household and child management techniques. There was very little interest in the sessions on games and children with disabilities. As in the previous program model, perception of the need for the program seemed to be an important component of success.

The group leaders, who were social workers and volunteers, had only five days of training on the methods and no follow-up training. Some felt that they had not mastered the technical information in the health and family planning sessions; they recommended asking representatives from the Ministry of Health or Family Planning to present these sessions. Lessons learned included to cut down on workload of the implementers or increase their training.

Day Care Centers, Crèches, Alternate Childcare Strategies

Childcare for working mothers, particularly for children under three years of age, is an increasing need in many parts of the world, particularly in the growing mega-cities of the South. A variety of alternate care systems are used: institutional day care, home day care (a non-relative caring for several children in her home for payment), informal arrangements with family members, and paid workers in the home. Each of these arrangements involves food, health, and care of several types.

Mehra, Kurz, and Paolisso (1992) evaluated nine well-known day care center programs for children under three in developing countries. The authors examined the effects of these childcare programs on children's nutritional status. Programs reviewed included India's Mobile Crèches, Senegal's seasonal day care centers, and Ghana's Accra Market Women's Association. All programs were closely connected to the women's workplace.

According to the institutions' reports, significant increases in nutritional status as a function of the interventions were found in over half of the projects. Children in day care homes or preschools had lower rates of mortality and morbidity than their nonschooled mates. The authors conclude that the amount of food served, the cleanliness of the locations, and the protection of the space results in these significant effects of the parent program on children's health.

The psychoeducational component of these programs was not specifically evaluated in the report. However, Mehra et al. (1992) concluded that this component of the institutional programs was not nearly as strong as the health and nutrition component. The ratio of caregiver to child was about 1 to 15 or 20 in both institutional and home day care. This ratio contrasts with the recommendation in the US of 1 to 3 for children under three years of age (NICHD 1997). Kits for educational instruction were sometimes available but not always used due to lack of knowledge of how to use them, or fear that the children would harm the materials.

The lessons from this review were that: easy access to these centers was a key determinant in the use of the day care program; there is a need for quality control and training of caregivers in child development, nutrition, health, and hygiene; and nutrition can be improved with these programs. Finally, since less is known about providing psychosocial care to children, research on the best models or techniques for care is needed.

An extensive investigation of day care quality for children under three years old in the US concluded that there are only three factors that consistently influence children's development: low ratio of caregiver to child; small size of the group of children; and absence of authoritative, or rule-based, attitudes by the childcare providers (NICHD 1997).

The number of children in these formal care programs was very small compared to those in informal alternate care, particularly those below three years of age. These alternate care arrangements may be less than optimal, and caregivers may be too young, or not trained, to be capable of providing care. To help clarify the extent of the problem, an assessment of where children are cared for when the primary caregiver is out of the home for an extended period, and who is providing the care, should be an essential part of demographic and census reports. This question has already been included in several of the Demographic and Health Surveys, such as Zimbabwe (Engle et al. 1997).

Current Work on Care

Interest in combined nutrition, health, and child development or psychosocial care programs has increased dramatically recently. Several major efforts by the World Health Organization's Child and Adolescent Health and Development Department; the Pan American Health Organization (PAHO), World Bank, and Tropical Metabolism Research Unit (1998); and the World Bank (Young 1997) to compile research and define "best practices" is providing a basis for building programs for care.

Because the interest in the integrated approach to care has been relatively recent, programming has had to rely on accumulated wisdom rather than research findings. Numerous experts have been concerned about the content and delivery of integrated programs (e.g., Myers 1992). Within the next five years, we should have much more information on the effectiveness of incorporating care into health and nutrition programs, particularly psychosocial care.

In Bangladesh, the BINP program uses care as a central concept. The World Bank and the Asian Development Bank are sponsoring integrated programs in Bolivia, Indonesia, Philippines, and Uganda that include nutrition, health, and psychosocial development. The Department of Child and Adolescent Health and

Development at the World Health Organization has incorporated nutrition counseling related to problems in the process of feeding (issues of care) into their new Integrated Management of Childhood Illness program. The program is also currently incorporating a section on Care for Development as well. These materials for the health care worker link the developmental changes from birth to two years with nutrition and health recommendations. Eventually, these materials will be supported by family and community actions that promote survival, growth, and development.

UNICEF has made considerable effort to incorporate care into its programming. In a review of the annual reports from 1996, 40 countries mentioned programs involving care, most involving psychosocial care to improve early child development. Many mentioned training materials and courses. The Nutrition Section has been providing training and workshops for policy makers and planners in a number of countries. A training manual for teaching program planners and managers how to use the concept of care in programming is being field-tested in a number of countries. As a next step, UNICEF has identified its top priority as integrated programming for children from gestation through three years of age, including health, nutrition, and early child development. This approach has been labeled Early Childhood Care for Survival, Growth and Development.

These efforts should help us move from research studies to programmatic efforts. At this point, however, there is a need for more research to provide specific guidelines for programs, particularly those that focus on psychosocial care, and active complementary feeding behaviors. Do we have the appropriate materials to guide these efforts? How can the psychosocial component be most effectively integrated? Who has the resources to present this information; what should the delivery mechanism be?

Current programs provide a few clues regarding delivery. Programs that relied on health care workers incorporating care messages into their daily work were much less effective than those which took the message into the homes, either through home visits, community actions like dramas, or parent support groups. Community-based programs in which parents reflected on their own child care methods and changes that they would like to make have resulted in significant changes in behavior in Bangladesh (Caroline Arnold, Save the Children, Nepal, personal communication). Frequency of contact seems to be a key element for program effectiveness. In one study in Jamaica, weekly home visits were found to be highly effective, whereas monthly visits were ineffective (Powell and Grantham-McGregor 1989).

Training a single person to be a facilitator for child development, health, and nutrition may be difficult. In the Philippines Parent Effectiveness Service, the social workers felt that they could not handle all of the information, and would have preferred a team approach. The Indian ICDS workers are unable to provide home visits for the younger children, because of time constraints and also because of perceived knowledge limitations regarding health and nutrition (Levinson 1998).

These delivery issues will require carefully evaluated studies. In the World Bank project in the Philippines, a new “child development” community worker is being created to provide these skills. A similar approach was followed in the PANDAI in Indonesia. The Philippines PES program trained parents to be group facilitators, and they were as effective as the paid implementers. As experience with the integrated programs grows, the relative benefits of these approaches will be better understood.

Ten different kinds of programs were recommended for implementation across the seven study countries. In five of the seven countries, information about complementary feeding and exclusive breastfeeding was to be delivered by a community health worker, using interpersonal communication methods. The second most frequent recommendation, by half of the programs, was to develop a system of day care centers for working women. Three reports encouraged the local development and sale of complementary foods, three recommended nutrition rehabilitation centers, and three described procedures for encouraging other family members to become involved in children’s nutrition.

One of the consistent problems in the country plans was failure to examine how care practices related to malnutrition in a particular care context. For example, if malnourished children are identified in homes where mothers work for earnings, the recommendation was to develop childcare centers. However, an analysis of who the alternate caregivers are, and how they are actually providing childcare is necessary in order to design an appropriate program. Center-based childcare for children under three years old is expensive to do adequately, and, if done poorly, may be more damaging than the somewhat adequate home care. Often building on existing systems is more appropriate than designing a new one. Further, national level determinants, such as maternity leave policies, need to be included in the analysis.

Other strategies were also suggested: improving access to education for girls (1 country), reducing women’s workloads (1), empowering women through increased decision-making power and schooling (2), and focusing on nutrition during adolescence (2) or pregnancy (1). One novel strategy was to convince newly married spouses that the woman will need special assistance when pregnant and lactating. Others introduced school curriculum changes, and targeted low birth weight babies for follow-up with a special monitoring system.

Despite the range of proposed programs, they represent less than half of the 17 types of program models outlined in Table 2 as strategies for incorporating care into existing health and nutrition programs. There is room for more innovation. Also, targeting a program to specific income groups, or specific kinds of children (e.g., low birth weight), will increase the likelihood of having an impact.

Conclusions Regarding Care for Survival, Growth, and Development

The importance of care practices and resources, particularly the linkages between health, nutrition, psychosocial care, and psychosocial development, seems to justify the inclusion of care in programming. Some conclusions are now evident from the literature. These are:

- (i) Early nutrition and care interventions have long-term consequences on development and functioning. Programs that include care are likely to be effective in increasing nutrient intake and improving survival, growth, and development of children, particularly if they begin prior to three years of age.
- (ii) A key element in psychosocial care is the sensitivity or responsivity of the caregiver to the child's emerging abilities.
- (iii) In developed countries, effects on children are most likely to be seen with high intensity interventions directly with children. However, in developing countries with more collective cultures, the effectiveness of interventions directly with caregivers is likely to be greater.
- (iv) Several kinds of care have received relatively little attention, and offer promise for further strengthening. For example, care for pregnant women has the potential for long-term benefits for the woman and for her child.

Recommendations for Research and Programming

Care should be an essential element of programs designed to improve survival, growth, and development of children. Although the importance of care and resources for care may be generally recognized, there is much to learn about the best approaches to improving care.

- (i) Resources for care must always be evaluated along with care practices, and roles of all family members should be considered together with their capabilities of fulfilling these roles.
- (ii) More attention needs to be given to the cost to the child of lack of responsivity, which in its extreme form is manifested in abuse and neglect.

- (iii) Interventions should be targeted not only to the most needy areas, but also to the most needy children, such as low birth weight infants.
- (iv) Assessment instruments and outcome indicators for care need to be developed further. Methods for community-level analyses to select priorities and strategies and to define goals also need to be developed.
- (v) Care practices and resources may be particularly important for improving nutrition in countries in which food security and health care services are reasonably satisfactory, but malnutrition rates remain high. They may also be important when rapid changes in living conditions undermine traditional positive practices, leading to a need to develop new care practices.
- (vi) More program models that combine improvements in psychosocial care with improvements in health and nutrition need to be explored, and their relative effectiveness needs to be evaluated. Possible benefits to parents of combined programs should also be documented.
- (vii) Care is a relatively new concept, and much of the theoretical basis is derived from the combination of social sciences with epidemiology, medicine, and nutrition. Many countries that recognize the importance of care for programming do not yet have the skills to assess, analyze, and take action regarding care. Training and information will need to be provided for leaders and practitioners on the theories and techniques of care. This training should include the social sciences as well as nutrition.

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