

Urbanization and caregiving: a framework for analysis and examples from southern and eastern Africa

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SUMMARY: *This paper considers the role of caregiving on children's health and development with a special focus on identifying the constraints on effective caregiving in urban areas, and the potential solutions. It uses the extended UNICEF framework for nutrition which suggests that there are six major types of care behaviour: feeding and breast-feeding, food preparation and handling, hygiene behaviour, psycho-social care, care for women and home health practices. To ensure adequate care for the child, the caregiver needs adequate knowledge and education, physical and mental health, autonomy in decision-making, time, and social support from the family and community. This paper describes each of these resources and constraints, and two of the behaviour types (breast-feeding and health care utilization) in the urban areas of eight countries in eastern and southern Africa. It also presents a matrix highlighting critical constraints on caregiving behaviours in urban areas, and potential solutions, and identifies areas where further research is needed.*

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I. INTRODUCTION

THE AVERAGE RATES of urban population growth in southern and eastern Africa from 1995 to 2025 are projected to be 2.9 and 4.7 per cent respectively, so that, by the year 2025, 66.6 and 41.2 per cent of the population of these respective regions will live in urban areas.⁽¹⁾ At present, much of the urban population lives in poverty, and urbanization, the conditions of urban poverty and the switch from a subsistence to a monetized economy can change the conditions of care for children in dramatic ways.

On the positive side, access to health, sanitation and education may be better in cities than in rural areas; caregivers' knowledge and education may be higher, and women's employment opportunities and their autonomy and status within the family

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may be greater. Smaller families may allow more attention per child and men may increase their role in child care.

On the other hand, time constraints on the mother may be much greater. If her need to earn an income increases, or if her employment requires long and inflexible hours, she will have less time to devote to child care. Family structure and dynamics may change and negatively affect care. Female headed households may be more common. Smaller families and more schooling for older siblings may result in less access to alternative caregivers.

This paper provides an extended framework, based on the UNICEF conceptual framework for nutrition and care,⁽²⁾ for understanding the role of care, amid urban poverty, in child health and nutritional status. It uses data from demographic and health survey (DHS) reports for nine eastern and southern African countries⁽³⁾ to illustrate the framework and pinpoint areas where further research is needed.⁽⁴⁾ Box 1 gives more information on the DHS and Table 1 information on overall sample sizes for female respondents (women aged 15 to 49 years old) and data on children under five as reported in the DHS for the countries covered in this paper.

Table 1: DHS Report Sample Sizes

Country	Number of women (ages 15-49)		Number of children (less than 5 years)	
	Urban	Rural	Urban	Rural
Burundi	650	3,320	59	1,870
Kenya	1,161	6,379	536	4,216
Madagascar	282	3,978	583	3,642
Malawi	1,316	3,533	345	2,890
Namibia	1,891	3,530	736	1,694
Rwanda	1,158	5,393	209	4,154
Tanzania	505	7,035	277	4,701
Zambia	3,358	3,702	2,305	2,594
Zimbabwe	1,745	4,383	518	1,892

SOURCES: Ministère de l'Intérieur, Département de la Population (Burundi) and Macro International, Inc. (1988), *Enquête Démographique et de Santé au Burundi, 1987*, Calverton, Maryland (MD); Ministère de l'Intérieur, Département de la Population and Macro International Inc., National Council for Population and Development (NCPD), Central Bureau of Statistics (CBS) (Office of the Vice-President and Ministry of Planning and National Development [Kenya]) and Macro International Inc. (1994), *Kenya Demographic and Health Survey 1993*, Calverton, MD; Centre National de Recherches sur l'Environnement, Ministère de la Recherche Appliquée au Développement (Madagascar) and Macro International, Inc. (1994), *Madagascar Enquête Démographique et de Sanitaire, 1992*, Calverton, MD; National Statistical Office (Malawi) and Macro International Inc. (1994), *Malawi Demographic and Health Survey, 1992*, Calverton, MD; Ministry of Health and Social Services (Namibia) and Macro International Inc. (1993), *Namibia Demographic and Health Survey, 1992*, Calverton, MD; Office National de la Population (Rwanda) and Macro International, Inc. (1994), *Rwanda Enquête Démographique et de Santé, 1992*, Calverton, MD; Bureau of Statistics (Planning Commission, Tanzania) and Macro International Inc. (1993), *Tanzania Demographic and Health Survey, 1991/92*, Calverton, MD; University of Zambia, Central Statistical Office (Zambia) and Macro International Inc. (1993), *Zambia Demographic and Health Survey, 1992*, Calverton, MD; Central Statistical Office (Zimbabwe) and Macro International Inc. (1995), *Zimbabwe Demographic and Health Survey 1994*, Calverton, MD.

Box 1: A Note on the Demographic and Health Surveys (DHS)

The Demographic and Health Surveys (DHS) are nationwide sample surveys of women of reproductive age that are designed to provide information on fertility, family planning, child survival, and health of children and women. They are administered by Macro International Inc. (USA) with the US Agency for International Development (USAID) being the primary funding agency in most countries. Surveys are usually conducted in collaboration with country governments and/or other institutions in the country of interest.

Sample selection is, in most cases, designed to identify nationally representative samples with adequate representation both from geographic regions within a country as well as from ethnic groups. On average, 4,000 to 8,000 women of child-bearing age (15-49 years) are interviewed in a standard survey. The DHS questionnaires are designed to elicit information on family planning knowledge, attitudes and practices; maternal and child health; nutritional status of women and their children; and social and economic background indicators. Two types of questionnaire are typically used in the DHS surveys: a household questionnaire and an individual questionnaire. The household questionnaire is used to obtain information on the household and to identify women who are eligible for the individual interview. The individual questionnaires are then used to obtain information on background characteristics, reproductive history, antenatal and delivery care, breast-feeding and weaning practices, immunization of children, fertility preferences, marriage, AIDS awareness, and husband's background and respondent's work.

While designed to allow for comparative analyses, DHS questionnaires are adapted to the specific data needs of participating countries. Topics for special investigation have included: knowledge and attitudes about AIDS, social marketing of contraceptives, pill compliance and causes of child deaths.

DHS reports are available for most countries in Africa, Latin America and Asia. The raw data are now available to the public via the Internet (<http://www.macrint.com/dhs>).

Note: Throughout this paper, data presented for urban areas in Tanzania are for Dar es Salaam only.

1. United Nations (1995), *World Urbanization Prospects: The 1994 Revision*, New York.

2. Engle, P. L. with L. Lhotska and H. Armstrong (1997) "The care initiative: care for nutrition: guidelines for assessment, analyses and action to improve care for nutrition", paper prepared for Nutrition Section, UNICEF, New York; also UNICEF (1990), *Strategy for Improved Nutrition of Children and Women in Developing Countries*, UNICEF policy review paper, New York.

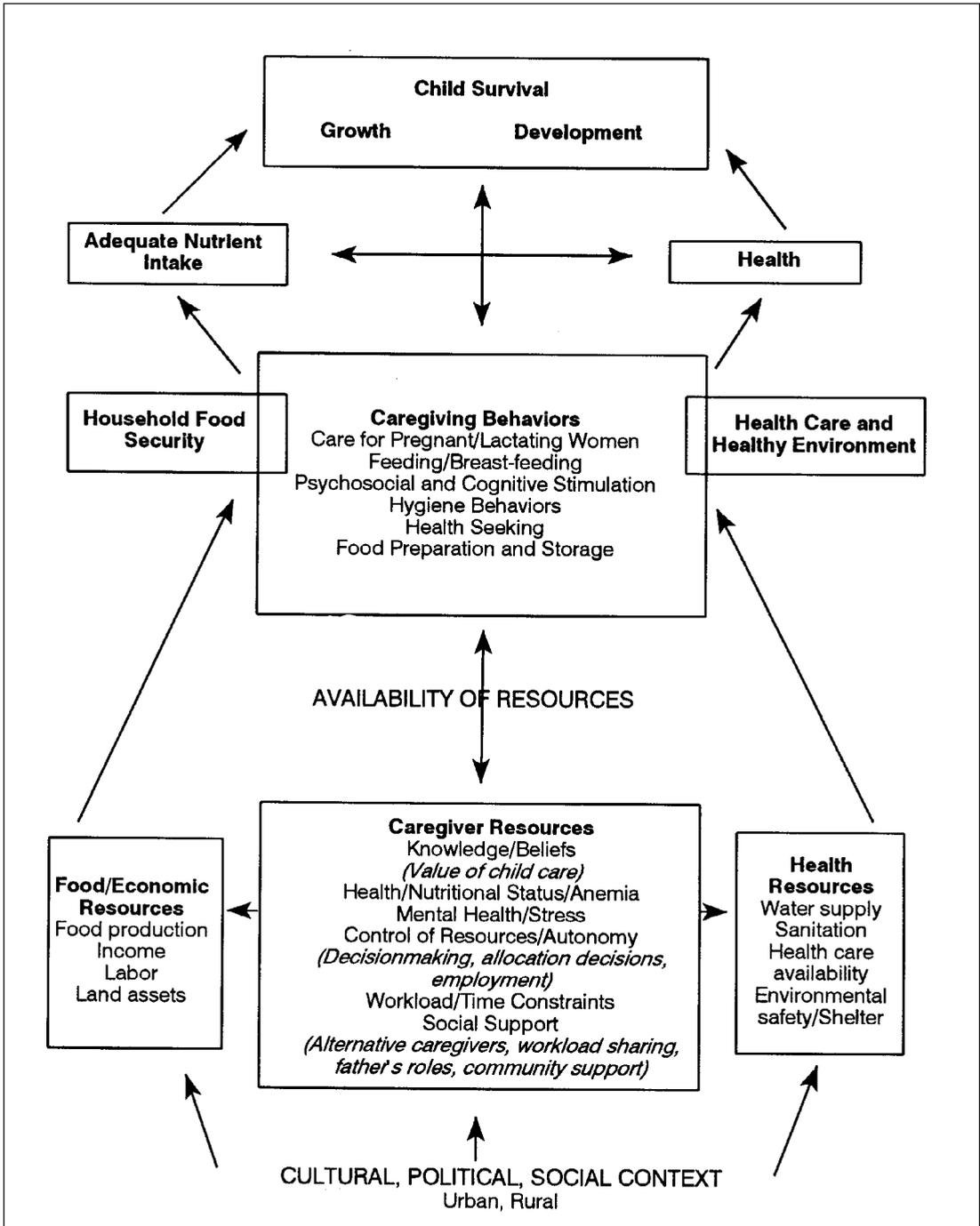
II. A CONCEPTUAL MODEL OF NUTRITION INCORPORATING CARE

ACCORDING TO THE extended UNICEF framework (see Figure 1), child survival, growth and development are affected directly by nutrient intake and health which, in turn, are influenced by the underlying factors of household food security, caregiving, health care services and the health of the environment. "Care" refers to all of the behaviours performed by caregivers that affect nutrient intake, health and the cognitive and psycho-social development of the child, including maternal health.

The performance of these behaviours requires enough resources for caregiving, or an absence of constraints to caregiving, so that the caregiver can put knowledge or expertise into practice. Many interventions to improve child health and nutritional

status rely on someone's behaviour: a child has to be taken to a health clinic for growth monitoring to be effective; a new complementary food has to be prepared and fed to a child. The time costs of these interventions may be quite high and are often added to women's already full days.⁽⁵⁾

Figure 1: The Extended Model of Care



3. An earlier version of this paper was presented at the Regional Conference of UNICEF's Network on Household Food Security in eastern and southern Africa, April 19-22, 1996. For countries in these regions, DHS data are available for Burundi, Kenya, Madagascar, Malawi, Namibia, Rwanda, Tanzania, Zambia and Zimbabwe.

4. For further details, see Engle, P., P. Menon and L. Haddad (1996), "Care and nutrition: concepts and measurement" in *Food Consumption and Nutrition Division Discussion Paper 18* published by the International Food Policy Research Institute (IFPRI), Washington DC; also Engle, P., P. Menon, J. Garrett and A. Slack (1997), "Developing a research and action agenda for examining urbanization and care-giving: examples from southern and eastern Africa", *Food Consumption and Nutrition Division Discussion Paper 28*, also published by IFPRI.

5. Leslie, J. (1989), "Women's work and child nutrition in the Third World" in Leslie, J. and M. Paolisso (editors), *Women's Work and Child Welfare in the Third World*, Westview Press for the American Association for the Advancement of Science, Boulder, Colorado; also McGuire, J.S. and B.M. Popkin (1989), "Beating the zero-sum game: women and nutrition in the Third World, Part 1", *Food and Nutrition Bulletin* Vol.11, No.4; also McGuire, J.S. and B.M. Popkin (1990), "Beating the zero-sum game: Women and nutrition in the Third World, Part 2," *Food and Nutrition Bulletin* Vol.12, No.1; and McGuire, J.S. and B.M. Popkin (1990), *Helping Women Improve Nutrition in the Developing World: Beating the Zero-Sum Game*, World Bank Technical Paper 114, World Bank, Washington DC.

6. Caldwell, J. (1979), "Education as a factor in mortality decline – evidence from Nigeria", *Population Studies* Vol.33, No.3; also Wolfe, B.L. and J. Behrman

Most of the time, the caregiver is the mother. It is necessary, however, to broaden the focus beyond the mother in order to include fathers, siblings, older relatives and institutions such as child care centres. Resources for care include the caregiver's: knowledge, education and beliefs; health and nutritional status; mental health and self-confidence; control of resources and autonomy; workload or time constraints; and the social support available for caregiving. Knowledge, beliefs and education represent the core capacity of the caregiver to provide appropriate care. Health and nutritional status, mental health and autonomy represent individual level factors that facilitate the translation of capacity into behaviour, and time availability and social support are family and community level variables that facilitate this translation.

This paper will discuss, first, aspects of the six resources for care that appear to be especially relevant in urban areas. This is followed by a discussion on two types of care behaviour (breast-feeding and the seeking of health care). For each resource, the paper discusses the linkages with child nutrition, the data available on urban/rural differences or intra-urban differences, and findings from the DHS data. Gaps in knowledge are identified as part of a research agenda.

III. CARE RESOURCES AND CONSTRAINTS

a. Education

THE ASSOCIATION BETWEEN increased maternal education and child health has been shown to be positive in most developing countries.⁽⁶⁾ Whether the effect of education is through improved child care practices (e.g. improved child care skills, better utilization of health care facilities) or through increased maternal income (because of the availability of higher paid work to educated mothers), or both, is open to debate.⁽⁷⁾

A few studies suggest that maternal education does not have a positive effect among higher socio-economic status families.⁽⁸⁾ A negative effect of maternal education on a child's weight-for-age among women with higher levels of education (more than four years of schooling) was found in Benin.⁽⁹⁾ The authors speculate that the positive effects of education on child health may be reduced if the woman's labour force participation reduces her ability to care and there is no adequate alternative care available. However, the effects of maternal education on child care behaviours are largely positive, seen mostly as increased maternal responsiveness toward children and enhanced hygiene and health care behaviours.⁽¹⁰⁾

b. Nutritional Status And Mental Health

The linkages between indicators of women's nutritional status, such as iron deficiency anaemia and low body mass index, and care have rarely been studied.⁽¹¹⁾ Two main pathways can be posited: the first is a direct link through poor nutrition's ef-

(1982), "Determinants of child mortality, health, and nutrition in a developing country", *Journal of Developmental Economics* Vol.11, No.2; and Cleland, J. and J. van Ginneken (1988), "Maternal education and child survival in developing countries: the search for pathways of influence", *Social Science and Medicine* Vol.27, No.12.

7. Richman, A., P. Miller and R.A. LeVine (1992), "Cultural and educational variations in maternal responsiveness", *Developmental Psychology* Vol.28, No.4; also Guldan, G.S., M.F. Zeitlin, A.S. Beiser, C.M. Super, S.N. Gershoff and S. Datta (1993), "Maternal education and child feeding practices in rural Bangladesh", *Social Science and Medicine* Vol.36, No.7; also Joshi, A.R. (1994), "Maternal schooling and child health: a preliminary analysis of the intervening mechanisms in rural Nepal", *Health Transition Review* Vol.4, No.1; and LeVine, R.A., S.E. LeVine, A. Richman, F.M.T. Uribe, C. Sunderland-Correa and P.M. Miller (1991), "Women's schooling and child care in the demographic transition: a Mexican case study", *Population and Development Review* Vol.17, No.3.

8. Bairagi, R. (1980), "Is income the only constraint on child nutrition in rural Bangladesh?" *Bulletin of the World Health Organization* Vol.58, No.5; also Doan, R.M. (1988), "Class and family structure: a study of child nutritional status in four urban settlements in Amman, Jordan", PhD dissertation, Cornell University, Ithaca, NY.

9. Reed, B.A., J.-P. Habicht and C. Niameogo (1996), "The effects of maternal education on child nutritional status depend on socioeconomic conditions", *International Journal of Epidemiology* Vol.25, No.3.

10. Raghupathy, S. (1996), "Education and the use of maternal health care in Thailand", *Social*

fect on maternal energy levels and consequences for care, the second is an indirect link whereby the biological consequences of nutrition for the pregnant and lactating woman affect child characteristics, both physical and behavioural, which would, in turn, affect caregiving behaviours.⁽¹²⁾

Research on the direct linkage is limited and most findings reported in the literature are from the nutrition Collaborative Research Support Programme (CRSP) projects conducted in Kenya⁽¹³⁾ and Egypt.⁽¹⁴⁾ Maternal nutrient deficiencies, particularly of iron and vitamin B₆, were found to be associated with less active caregiving. Evidence for the indirect linkage has also been reported from the nutrition CRSPs.

It is generally believed that the urban environment, particularly urban poverty, will negatively affect women's mental health although the data in this area are almost non-existent. Studies linking psychological factors such as stress and depression with child caregiving have not been conducted despite reports of high levels of incidence of these conditions among women in developing countries.⁽¹⁵⁾ The confidence level of the caregiver is often cited as a critical factor in complementary feeding, particularly for children with poor appetites. This relationship has not been tested systematically outside of developed countries but programme experience suggests that it plays a major role.⁽¹⁶⁾ In the United States, maternal depression has been found to be associated with poor caregiving and lower achievement in children.⁽¹⁷⁾

c. Control of Resources and Autonomy

A number of studies have suggested that women's autonomy and decision-making power in the household have significant benefits for children's nutritional status.⁽¹⁸⁾ Children living in female headed households sometimes grow better than might be expected, based on family income, because intra-household distribution practices appear to favour children more in these households than in households headed by men.⁽¹⁹⁾

In many societies, however, 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 or, in many cases, by a mother-in-law or older female from the husband's family. Castle found that some of the most malnourished children in her Malian sample belonged to low-status women in high-income households.⁽²⁰⁾ 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.⁽²¹⁾

Urban residency may affect autonomy and control of resources by women due to the increased likelihood that their income derives from non-agricultural work, which is often associated with increased authority in the home. On the other hand, traditional domains of control for rural women may be undermined by an urban environment where there is less involvement in child-rearing (for example, fewer children, mother less likely to be at home), possibly a lower role in agricultural production and food-processing and, for some women, a reduction in life opportunities.⁽²²⁾

Science and Medicine Vol.43, No.4, pages 459-471; Barrett, H. and A. Browne (1996), "Health, hygiene and maternal education: evidence from the Gambia", *Social Science and Medicine* Vol.43, No.11, pages 1579-1590; also DeClerque, J., P. Bailey, B. Janowitz, R. Dominik and C. Fiallos (1992), "Management and treatment of diarrhoea in Honduran children: factors associated with mothers' health care behaviours", *Social Science and Medicine* Vol.34, No.6, pages 687-695; see also reference 7, Richman, Miller and LeVine (1992) and LeVine *et al.* (1991).

11. Winkvist, A. (1995), "Health and nutrition status of the caregiver: effect on caregiving capacity", *Food and Nutrition Bulletin* Vol.16, No.4.

12. See reference 4, Engle, Menon, and Haddad (1996).

13. Neumann, C., N. Bwibo and M. Sigman (1992), "Functional implications of malnutrition: Kenya project final report, Phase II 1989-92. Human Nutrition Collaborative Research Support Programme", report submitted to the US Agency for International Development, School of Public Health, University of California at Los Angeles.

14. Kirksey, A., G.G. Harrison, O.M. Galal, G.P. McCabe, T.D. Wachs and A. Rahmanifar (1992), "The human costs of moderate malnutrition in an Egyptian village", final report to the US Agency for International Development, Washington DC.

15. Chakraborty, A. (1990), *Social Stress and Mental Health: A Social-Psychiatric Field Study of Calcutta*, Sage, New Delhi.

16. Gibbons, G. and M. Griffith (1984), "Programme activities for improving weaning practices" report prepared for UNICEF, American Public Health Association, Washington DC.

17. Rutter, M. (1990), "Commen-

d. Workload and Time Constraints

Women's numerous time commitments have been recognized as one of the most important constraints to care.⁽²³⁾ These time commitments include household production, particularly time and labour intensive tasks such as carrying water and gathering fuelwood.

Maternal work for wages does not seem to have a negative effect on child nutritional status for workers in the formal sector or those with reasonable incomes⁽²⁴⁾ but anthropometric status is poorer for those children of women who are poorly paid.⁽²⁵⁾ A critical factor for maternal employment is the availability of good quality, alternative child care support.

In urban areas, work may have characteristics for women that make it less compatible with child care than work in rural areas. A large number of women work in the informal sector, often for low wages and long hours with an unpredictable schedule.⁽²⁶⁾ An additional time cost in the urban area is transportation which may be expensive, time-consuming, crowded and possibly dangerous. Under these conditions, mothers are unlikely to take children to work.

e. Social Support

Alternative caregivers. Time spent on direct child care declines precipitously as a child moves from breast-feeding and infancy to walking during the second year of life although women may continue to provide supervisory care.⁽²⁷⁾ Siblings and adult females are important sources of alternative care in most societies. In many cultures, siblings (primarily females) start to become important caregivers when charges are beyond one or two years of age.⁽²⁸⁾ Yet, with increased school attendance in urban areas, the availability of siblings is likely to be limited. When infants are ill, older female siblings may increase time spent on child care.⁽²⁹⁾ Men also provide some care and tend to assist with holding and carrying rather than other aspects of child care.⁽³⁰⁾

Alternative caregiver qualities necessary for good child care are rarely investigated. The only variable that has been mentioned in the literature is the age of the caregiver. Some studies suggest that care by a pre-teen caregiver is associated with lower nutritional status in a child under two, with controls for mother's education and socio-economic status.⁽³¹⁾

Little data exist on the availability of grandmothers or older siblings as caregivers in an urban setting. In one study in an urban area of Guatemala, Engle reported that 70 per cent of a sample of 300 women felt that their mother would be the ideal alternative caregiver but only 14 per cent actually used them.⁽³²⁾

When mothers work, provisions for child care can be very important. In a comparison of urban and rural mothers, Engle found that rural mothers (excluding agricultural workers) continued to report taking care of their children "all day" whereas urban mothers were significantly less likely to report all day child care as their work hours increased; work required alternative arrangements.⁽³³⁾

tary: some focus and process considerations regarding effects of parental depression on children", *Developmental Psychology* Vol.26, No.1.

18. Johnson, F.C. and B.L. Rogers (1993), "Children's nutritional status in female headed households in the Dominican Republic", *Social Science and Medicine* Vol.37, No.11; also Engle, P.L. (1991), "Maternal work for earnings and child care strategies: nutritional effects", *Child Development* Vol.62, No.2; also Engle, P.L. (1993), "Influences of mother's and father's income on children's nutritional status in Guatemala", *Social Science and Medicine* Vol.37, No.11; and Haddad, L. (1992), "The impact of women's employment status on household food security at different income levels", *Food and Nutrition Bulletin* Vol.14, No.4.

19. Onyango, A., K. Tucker, and T. Eiseimon (1994), "Household headship and child nutrition: a case study in western Kenya", *Social Science and Medicine* Vol.39, No.12; also Kennedy, E. and P. Peters (1992), "Household food security and child nutrition: the interaction of income and gender of household head", *World Development* Vol.20, No.8.

20. Castle, S.E. (1995), "Child fostering and children's nutritional outcomes in rural Mali: the role of female status in directing child transfers", *Social Science and Medicine* Vol.40, No.5.

21. Engle, P.L., S. Castle and P. Menon (1996), "Child development: vulnerability and resilience", *Food Consumption and Nutrition Division Discussion Paper 12*, International Food Policy Research Institute, Washington DC.

22. Greenfield, P.M. (1981), "Child care in cross-cultural perspectives: implications for future organization of child care in the United States", *Psychology of Women Quarterly* Vol.6, No.1.

Institutional day care is sometimes seen as the solution to the problem of urban child care.⁽³⁴⁾ Traditional institutional care tends to be expensive and, in most places, availability is limited.⁽³⁵⁾ Furthermore, care may be needed for children under three and this group is the most difficult to serve. The quality of these day care programmes depends enormously on the quality of the support provided to the personnel.⁽³⁶⁾

Community organizations can play a role in various aspects of care. In Nairobi, the African Housing Fund has responded to requests from four women's groups in the city's informal settlements to be trained both in income generation activities (e.g. making roofing tiles) and in developing a day care centre for their children.⁽³⁷⁾

Residents may develop new networks or may recreate rural networks in the city in order to create a supportive urban community structure. Rahim and Cederblad noted that urban residents in Khartoum, Sudan, could make frequent visits to their rural homes or create an urban clan that incorporated many aspects of the home village, including mutual support, to cope with urban stress.⁽³⁸⁾ Government agencies and the policy environment can be very influential in improving the capacity of the family to provide care.⁽³⁹⁾

Family composition. Since a major source of social support is the family, changes in family structure as a function of urbanization need to be understood. Birdsall and McGreevey report that the urban poor have much larger families than other urban residents and have family sizes more similar to those of the rural poor.⁽⁴⁰⁾ Although there is a general belief that the percentage of female headed households or unpartnered mothers is higher in urban than rural areas, both because of higher rates of separation in urban areas and because of the migration of unpartnered women to urban areas to find work and possibly escape social censure, data do not always support this generalization.⁽⁴¹⁾

In general, children profit when both parents are income earners. Although there are cases of female headed households providing better care for children than families with both parents present, these tend to occur in situations where men provide relatively little support.⁽⁴²⁾ The trend toward more female headed households, more women in the labour force and more elderly family members requiring care raises concerns for the increased burden on the primary caregivers – namely, women.⁽⁴³⁾ Although men should become more involved with child care as women increase their time in the labour force, men still contribute far less than an equal share of time to household chores and child care.⁽⁴⁴⁾

Fathers may provide a particularly important source of emotional support and information to the caregiver. There is some evidence that when fathers contribute a higher proportion of their income to family food budgets, children are better nourished.⁽⁴⁵⁾ Fathers' opinions on child caregiving can significantly affect decisions on infant feeding, particularly breast-feeding.⁽⁴⁶⁾ Yet, little is known about fathers' beliefs and attitudes and the possibility of increasing their involvement in nutrition interven-

23. See reference 5, McGuire and Popkin (1990).

24. Blau, D M., D.K. Guilkey and B.M. Popkin (1996), "Infant health and the labour supply of mothers", *Journal of Human Resources* Vol.31, No.1; also Vial, I., E. Muchnik and F. Mardones (1989), "Women's market work, infant feeding practices and infant nutrition among low-income women in Santiago, Chile" in Leslie, J. and M. Paolisso (editors) (1996), *Women, Work, and Child Welfare in the Third World*, Westview, Boulder, Colorado, USA; see also reference 18, Engle (1991).

25. LaMontagne, J., P.L. Engle and M. Zeitlin (1996), "Maternal employment and nutrition status of 12-18-month-old children in Managua, Nicaragua", *Social Science and Medicine*, forthcoming; also Powell, C.A. and S. Grantham-McGregor (1985), "The ecology of nutritional status and development in young children in Kingston, Jamaica", *American Journal of Clinical Nutrition* Vol.41, No.6.

26. Merrick, T.W. (1976), "Employment and earnings in the informal sector in Brazil: the case of Belo Horizonte", *Journal of Developing Areas* Vol.10, No.3.

27. Baksh, M., C.G. Neumann, M. Paolisso, R.M. Trostle and A.A.J. Jansen (1994), "The influence of reproductive status on rural Kenyan women's time use", *Social Science and Medicine* Vol.39, No.3; also Cassidy, C.M. (1987), "World-view conflict and toddler malnutrition: change agent dilemmas" in Scheper-Hughes, N. (editor) (1994), *Child survival*, D. Reidel, Dordrecht.

28. Weisner, T.S. and R. Gallimore (1977), "My brother's keeper: child and sibling caretaking" *Current Anthropology* Vol.18, No.2.

29. Pitt, M. and M. Rosenzweig (1990), "Estimating the intra-household incidence of illness: child health and gender inequal-

tion programmes, particularly under the changing circumstances of urbanization.

IV. SPECIFIC CARE BEHAVIOURS

a. Breast-feeding Behaviours

ALMOST WITHOUT EXCEPTION, breast milk is considered to be the best food for newborns and infants. In general, in the South, the longer and more consistently a mother can nurse her child during the first six months, the better-off the child will be in terms of nutrition, morbidity and mortality.⁽⁴⁷⁾

Urbanization brings with it increased maternal education and increased maternal employment and, therefore, a possible decrease in breast-feeding and earlier weaning. Popkin and Bisgrove present convincing evidence that both prevalence and duration of breast-feeding have declined in urban areas.⁽⁴⁸⁾ Atkinson notes that less breast-feeding and earlier weaning in urban populations contribute to earlier faltering in growth.⁽⁴⁹⁾

Urban mothers are likely to wean their children earlier than rural mothers, possibly due to their workload and time constraints, as a study in Nigeria suggests.⁽⁵⁰⁾ In a study of urban women in Guatemala, formal work was associated with a shorter breast-feeding period although informal workers and non-workers had similarly long breast-feeding periods.⁽⁵¹⁾ The potential costs to a child's health and nutritional status of not being breast-fed, or of being breast-fed for a shorter period, may be compensated by the additional income generated by the working mother⁽⁵²⁾ and her ability to purchase higher quality foods for her child.⁽⁵³⁾

Early termination of breast-feeding is not always a function of employment. Despite favourable breast-feeding conditions, mothers in urban Costa Rica weaned their infants early (three months or earlier). Reasons given included the belief that breast-feeding was a personal sacrifice in terms of time and mobility and posed a problem for maintaining their "body image" but did not include employment as a major factor.⁽⁵⁴⁾ Studies indicate that work related variables such as flexibility, number of hours, types of environment and levels of stress are more predictive of breast-feeding and child care practices than employment status.⁽⁵⁵⁾

The limited existing data on the effects of maternal education on breast-feeding practices are conflicting. Mothers with the lowest and the highest levels of education engage in long-term breast-feeding in Israel.⁽⁵⁶⁾ In Brazil, however, maternal educational levels strongly correlated with earlier termination of breast-feeding.⁽⁵⁷⁾

Other influences in urban areas that may contribute to breast-feeding decisions are the increased promotion and availability of infant formula, and maternal delivery in private hospitals. The effects of marketing breast-milk substitutes on breast-feeding decisions and duration seem to be influenced by the educational level of the mother: the presence of marketing activities predicts a switch from breast-feeding to formula-feeding by edu-

ity in the allocation of time", *International Economic Review* Vol.31, No.4.

30. Engle, P.L. and C. Breaux (1994), *Is There a Father Instinct? Father's Responsibilities for Children*, International Center for Research on Women Series, Population Council, New York.

31. See reference 18, Engle (1991); also reference 25, La-Montagne, Engle, and Zeitlin (1996).

32. See reference 18, Engle (1991).

33. Engle, P.L. (1989), "Child care strategies of working and nonworking women in rural and urban Guatemala" in Paolisso, M. and M. Buvinic (editors) (1989), *Women's Work and Child Welfare in the Third World*, Westview, Boulder, Colorado, USA.

34. Young, M.E. (1995), *Investing in Young Children*, World Bank Discussion Paper 275, World Bank, Washington DC.

35. Engle, P.L., M. Garcia de Sanchez and B. Suarez (1988), "Options to mother: a report on day centre programmes in Guatemala", report to UNICEF/Guatemala; also deSouza, R.E.P. and D. Grein Santos (1993), "Brazil: both quality and quantity in child care", *Bernard van Leer Foundation Newsletter* Vol.71, July.

36. See reference 34.

37. Bernard Van Leer Foundation *Newsletter* (1993), "Kenya: dreams that are coming true", July.

38. Rahim, S.I.A. and M. Cederblad (1986), "Effects of rapid urbanization on child behaviour and health in a part of Khartoum, Sudan – II. Psycho-social influences on behaviour", *Social Science and Medicine* Vol.22, No.7.

39. Immink, M. (1994), *The Urban Poor and Household Food Secu-*

cated mothers and a switch from breast-feeding to feeding other commercial breast-milk substitutes by uneducated mothers.⁽⁵⁸⁾

b. Health Care Utilization

Among the determinants of health care utilization are price (transportation, money cost, cost of substitute health care facilities), income, health needs of the population or individual and their perception of these needs, household size and composition, and the educational level of decision makers in the household.⁽⁵⁹⁾ Whereas the number of health care facilities may be greater in urban areas, and their distance away less than in rural areas, the opportunity cost of the time needed to use the facility could be higher, especially if the mother (or primary caregiver) is working.⁽⁶⁰⁾ Unfortunately, the distribution of available health care within urban areas is hardly equitable for the dwellers of illegal and informal settlements.⁽⁶¹⁾ The inhabitants of these settlements probably need primary health care programmes but cities tend to have a larger concentration of curative facilities available.

Urban-rural differences in utilization of health care services could also be due to differences in educational levels of women in these areas. Better educated women utilize available health care and community service facilities more effectively than women with no education.⁽⁶²⁾ The combined positive effect of the interaction of maternal education and community services (schools, infrastructure and health establishments) on child height demonstrates the likely role of education in the utilization of these services.⁽⁶³⁾

The urban poor may have lower levels of education than the middle-income urban person and thus less knowledge and awareness about how to use health care facilities. They may also have fewer resources, making the relative cost of using health care greater and increases the need for women to be employed, which increases the opportunity cost of time needed to use health care facilities.

V. CARE IN EASTERN AND SOUTHERN AFRICA

THE DATA FROM demographic and health surveys (DHS) in eastern and southern Africa generally confirm generalizations about child malnutrition in developing countries by suggesting that, on average, rural conditions are somewhat worse than urban conditions (see Table 2).⁽⁶⁴⁾ Stunting (low height-for-age) is less common among urban than rural children. The prevalence of wasting (low weight-for-height) among rural and urban children is similar although the levels tend to be relatively small (6 per cent or less in most cases). These countrywide figures, however, do not say much about the significance of **intra**-urban differences. Studies that have specifically identified the urban poor have found them significantly worse off than wealthier urban groups.⁽⁶⁵⁾ Comparisons that show differences between mega-cities and smaller urban areas also suggest that causal

ity: *Policy and Project Lessons of How Governments and the Urban Poor Attempt to Deal with Household Food Insecurity, Poor Health and Malnutrition*, Urban Examples No.19, UNICEF, New York.

40. Birdsall, N. and W.P. McGreevey (1983), "Women, poverty, and development" in Buvinic, M., M. A. Lyette and

factors affecting malnutrition, health and care may differ between the two.⁽⁶⁶⁾

The data also do not provide much insight into what may be among the most important factors affecting child health and malnutrition in urban areas namely, care. Of the six care resources and constraints identified in the conceptual model, most DHS reports contained significant information on only three: level of education, physical health and nutrition, and family composition. The Zimbabwe DHS also had limited data on women's autonomy, workload and availability of social support.

Table 2: Prevalence of Malnutrition

Country	Age group (months)	Weight-for-age (below -2 standard deviations)		Height-for-age (below -2 standard deviations)		Weight-for-height (below -2 standard deviations)	
		Urban (per cent)	Rural (per cent)	Urban (per cent)	Rural (per cent)	Urban (per cent)	Rural (per cent)
Burundi	3-36	20.2	38.9	27.1	48.8	6.5	5.6
Kenya	< 60	12.8	23.5	21.5	34.2	5.2	6.0
Madagascar	< 60	33.4	40.0	44.0	52.3	3.2	5.0
Malawi	< 60	15.4	28.6	35.0	50.3	2.6	5.8
Namibia	< 60	17.8	29.8	21.8	31.3	6.6	9.5
Rwanda	< 60	18.1	29.7	33.4	49.0	3.7	3.8
Tanzania	< 60	19.9	29.2	28.5	48.1	6.8	5.6
Zambia	< 60	20.8	29.0	32.5	46.0	5.4	5.0
Zimbabwe	0-35	12.5	16.6	17.6	22.8	6.1	5.3

SOURCE: Demographic and health survey reports for these countries; see listing in Table 1.

Note: Classified as malnourished if the Z-score is -2 standard deviations from the median of the reference population which is based on the US national child health survey.

W.P. McGeevey (editors) (1983), *Women and Poverty in the Third World*, Johns Hopkins University Press, Baltimore, MD, USA; also Popkin, B.M. and E.Z. Bisgrove (1988), "Urbanization and nutrition in low-income countries", *Food and Nutrition Bulletin* Vol.10, No.1.

41. See reference 40, Popkin and Bisgrove (1988).

42. See reference 19, Kennedy and Peters (1992).

43. Bruce, J., C.B. Lloyd and A. Leonard with P.L. Engle and N. Duffy (1995), *Families in Focus: New Perspectives on Mothers, Fathers, and Children*, Population Council, New York.

44. United Nations (1995), *The World's Women, Trend, and Statistics*, New York.

45. Engle, P.L. (1995), "Mother's

a. Care Resources and Constraints in Eastern and Southern Africa

Education. Table 3, which summarizes the educational attainment of women aged 15 to 49, shows that educational levels of women tend to be higher in urban areas than in rural areas but they are still low. Fewer urban women had never attended school and more urban women had secondary education than their rural counterparts. Although urban Namibian women attained the highest levels in the group of countries studied, 32 per cent of them still have only primary education or less. In Burundi, almost 70 per cent of urban women fall into this category. Efforts to improve women's educational attainment should be an integral part of overall strategies to improve child health and nutrition.

Nutritional status. Overall, women's health as measured by the Body Mass Index seems relatively good in the region although the surveys lacked essential information on micro-nutrient status (see Table 4). Low Body Mass Index (less than 18.5) was generally less prevalent in urban than in rural areas and the prevalence in all urban areas was less than 10 per cent.

Control of resources and autonomy. The Zimbabwe DHS reported that 66 per cent of urban women and 49 per cent of rural women made their own decisions about use of their earn-

Table 3: Education of Women by Highest Level of Education Attained (ages 15-49 yrs)

Country	No education		Primary education		Secondary school		Higher secondary	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
	(per cent of total population)							
Burundi	29.4	82.3	40.2	16.7	30.3	1.0	n.a.	n.a.
Kenya	8.7	19.9	16.8 ^a	31.5 ^a	28.8 ^b	28.7 ^b	45.8 ^c	19.9 ^c
Madagascar	6.1	23.0	31.1	59.5	34.1	13.5	28.6	4.0
Malawi	22.7	50.6	17.6 ^a	25.6 ^a	38.8 ^b	21.8 ^b	20.9	2.1
Namibia	8.8	18.0	23.4 ^a	48.7 ^a	10.9 ^b	8.4 ^b	56.9	24.8
Rwanda	19.7	39.2	47.6	54.5	32.7	6.2	n.a.	n.a.
Tanzania	18.7	38.3	15.2 ^a	20.8 ^a	56.7 ^b	38.9	9.5	2.0
Zambia	7.0	26.5	55.2	64.5	34.9	8.6	2.9	0.5
Zimbabwe	3.5	14.8	33.5	53.9	63.0	31.4	n.a.	n.a.

SOURCE: Demographic and health survey reports for these countries; see listing in Table 1.

^a Refers to some primary education

^b Refers to completion of primary education

^c Refers to secondary education and higher

n.a. = not assessed

money, father's money, and parental commitment: Guatemala and Nicaragua" in Blumberg, R., C.A. Rakowski, I. Tinker and M. Monteon (editors) (1995), *Engendering Wealth and Well-Being*, Westview, Boulder, Colorado, USA; also reference 18, Engle (1993).

46. Littman, H., S.V. Medendorp and J. Goldfarb (1994), "The decision to breast-feed: the importance of fathers' approval", *Clinical Pediatrics* Vol.33, No.4; also Bryant, C.A. (1982), "The impact of kin, friend, and neighbor networks on infant feeding practices: Cuban, Puerto Rican and Anglo families in Florida", *Social Science and Medicine* Vol.16, No.3; and Scrimshaw, S.C.M., P.L. Engle, L. Arnold and K. Haynes (1987), "Factors affecting breast-feeding among women of Mexican origin or descent in Angeles", *American Journal of Public Health* Vol.77, No.4.

47. Armstrong, H. (1995), "Breast-feeding as the foundation of care", *Food and Nutrition Bulletin* Vol.16, No.4.

48. See reference 40, Popkin and Bisgrove (1988).

ings. More rural women (36 per cent) reported making joint decisions with their husbands about use of resources than did urban women (23 per cent). Both the DHS data and other findings suggest that women in urban areas may have a greater role in decision-making than those in rural areas but more data are needed to understand the reasons.

Table 4: Body Mass Index (BMI) Below 18.5 (Ages 15-49 Years)

Country	Urban (per cent of total population)	Rural
Kenya	4.2	10.8
Malawi	7.1	10.1
Namibia	8.7	17.0
Tanzania	5.8	10.7
Zambia	8.3	12.2
Zimbabwe	2.3	6.0

SOURCE: Demographic and health survey reports for these countries; see listing in Table 1.

Workload and time constraints. The Zimbabwe DHS also recorded that rural and urban women are equally likely to report employment (50 per cent rural, 54 per cent urban) but rural women are more likely to be agricultural workers (58 per cent rural, 5 per cent urban) and urban women are more likely to have worked for more than five days a week in the past year (14 per cent rural, 34 per cent urban).

Social support. The data on family composition reveal that household size is not consistently smaller in urban areas than in rural areas (see Table 5). Surprisingly, the percentage of female heads of household in urban areas is actually about the same or lower than in rural areas. Data on child care for em-

49. Atkinson, S. (1992), "Food for the cities: urban nutrition policy in developing countries", Urban Health Programme, Health Policy Unit, Department of Public Health and Policy, London School of Hygiene and Tropical Medicine, London.

50. Uwaegbute, A.C. and D.O. Nnanyelugo (1987), "Differences in the infant feeding practices in urban and rural Nigeria", *Journal of Nutrition Education* Vol.19, No.2.

51. Engle, P.L. and M.E. Pedersen (1989), "Maternal work for earnings and children's nutritional status in urban Guatemala", *Ecology of Food and Nutrition* Vol.22, No.3.

52. See reference 49.

53. O'Gara, C. (1989), "Breast-feeding and maternal employment in the Honduras" in Leslie, J. and M. Paolisso (editors) (1989), *Women, Work, and Child Welfare in the Third World*, Westview, Boulder, Colorado, USA; also reference 51, Engle and Pedersen (1989).

employed mothers in Zimbabwe show that in urban areas, even when working, mothers remain the primary caregiver (see Table 6). Urban mothers tend to rely much more extensively on other relatives or hired help than employed rural mothers who turn to other children or relatives for assistance.

b. Specific Care Behaviours In Eastern and Southern Africa

Breast-feeding behaviours. Data on breast-feeding and on health care utilization for diarrhoea provide two examples of specific caring behaviours in an urban environment. The data for breast-feeding are consistent with the global picture that the median duration of breast-feeding is less in urban than in rural

Table 5: Household Structure: Headship and Family Size

Country	Average number of family members		Families with foster children ^a		Female headship	
	Urban	Rural	Urban	Rural	Urban	Rural
Kenya	3.4	5.1	10.8	18.9	21.5	35.3
Madagascar	5.0	5.2	7.4	19.6	26.5	20.8
Malawi	4.8	4.4	24.0	19.2	12.6	26.1
Namibia	4.9	6.6	20.3	46.4	31.2	30.6
Rwanda	4.6	5.0	2.5	1.8	19.4	20.8
Tanzania	5.5	4.4	23.2	16.7	17.1	17.0
Zambia	6.0	5.3	26.0	23.3	13.1	18.7
Zimbabwe	3.8	5.1	10.8	27.5	18.6	39.4

SOURCE: Demographic and health survey reports for these countries; see listing in Table 1.

^a Foster children are those children below the age of 15 who are not living with either of their parents.

Table 6: Child Care While Working, Zimbabwe

	Location		Highest level of education completed			Occupation	
	Urban	Rural	No education	Primary education (per cent)	Secondary education	Agricultural	Non-agricultural
Employed women with child < 6 years old	41.9	56.7	56.5	53.8	47.4	60.3	45.9
Caretaker							
Respondent	40.3	54.2	55.7	54.6	42.1	59.3	42.7
Husband/partner	1.4	1.0	0.8	1.4	0.8	0.6	1.6
Other relative	24.6	16.3	8.2	17.6	23.9	12.8	23.6
Hired help	20.0	2.8	1.7	1.8	18.3	0.7	13.5
Other female child	4.1	11.2	16.3	10.8	4.2	10.6	8.1
Other male child	0.6	5.2	5.4	5.0	1.9	6.0	2.2

SOURCE: Adapted from Demographic and Health Survey, 1994 (Zimbabwe); see listing in Table 1.

54. Muñoz, L.M. and E. Ulate (1988), "Breast-feeding patterns of urban low- to middle-income women in Costa Rica", *Ecology of Food and Nutrition* Vol.25, No.1; also Cohen, R.J., K. Haddix, E. Hurtado and K.G. Dewey (1995), "Maternal activity budgets: feasibility of exclusive breast-feeding for six months among urban women in Honduras", *Social Science and Medicine* Vol.41, No.4.

areas although these differences are small and smaller than in other parts of the world. In any case, the number of mothers who have ever breast-feed is quite high (over 90 per cent in every sampled country) and the initiation of breast-feeding appears to be independent of rural/urban status (see Table 7).

In Zimbabwe, data were collected on the percentage of children under 36 months who received specific types of food in the week before the interview. Urban children received a wider variety of food such as other milks, meat, poultry, eggs, porridge, fish, fruits and vegetables than rural children.⁶⁷ The considerable difference in quality of complementary foods in the DHS observed in Zimbabwe suggests an important advantage of urbanization.

Table 7: Breast-feeding Duration, Frequency and Initiation

Country	Median duration of breast-feeding ^a						Frequency ^b					
	Any breast-feeding		Exclusive breast-feeding		Full breast-feeding (breast milk + water)		Under 6 months-breast-feeding 6+ times in last 24 hours ^a		Infants ever breast-fed		Breast-fed within 1 day of birth	
	Urban	Rural	Urban	Rural (months)	Urban	Rural	Urban	Rural (per cent)	Urban	Rural (per cent)	Urban	Rural (per cent)
Kenya	19.6	21.5	0.5	0.5	0.5	0.7	76.9	86.9	97.2	97.0	79.7	84.3
Madagascar	16.2	19.6	0.6	1.2	0.9	1.8	83.1	91.2	95.9	97.4	36.4	46.3
Malawi	19.6	21.4	0.4	0.4	0.7	1.3	90.4	93.0	95.8	97.0	85.8	90.3
Namibia	12.9	18.5	0.5	0.5	0.7	2.6	71.6	86.4	91.8	96.4	71.5	84.5
Rwanda	27.2	27.9	4.3	5.4	4.4	5.6	94.2	88.6	96.2	97.3	59.0	47.3
Tanzania	20.1	21.7	0.4	0.7	0.6	2.5	96.4	94.1	95.6	97.7	80.9	81.1
Zambia	18.2	19.0	0.5	0.4	2.2	2.6	88.7	96.1	97.4	97.6	83.8	89.8
Zimbabwe	17.6	19.2	0.5	0.5	1.3	0.7	90.6	94.8	98.7	98.7	90.2	91.0

SOURCE: Demographic and health survey reports for these countries; see listing in Table 1.

^a Figures are for children under 3 years of age

^b Figures are for children under 6 months of age

55. Uyanga, J. (1980), "Rural-urban differences in child care and breast-feeding behaviour in south-eastern Nigeria", *Social Science and Medicine* Vol.14, No.1.

56. Ever-Hadani, P., D.S. Seidman, O. Manor and S. Harlap (1994), "Breast-feeding in Israel: maternal factors associated with choice and duration", *Journal of Epidemiology and Community Health* Vol.48, No.3; also Mansbach, I.K., C.W. Greenbaum and J. Sulkes (1991), "Onset and duration of breast-feeding among Israeli mothers: relationships with smoking and type of delivery", *Social Science and Medicine*

Health care utilization. The prevalence of diarrhoea is about the same or somewhat lower in urban than in rural areas although urban caregivers are more likely to take the child to a health care provider for treatment, except in Zimbabwe (see Table 8). Still, the variation in the percentages of those who do so are great, ranging from 26 per cent in Zimbabwe to over 70 per cent in Namibia. In general, urban caregivers treat diarrhoea with oral rehydration therapy (ORT) more often than rural caregivers.

Statistics on mental health, women's employment and autonomy in decision-making and control over household resources were not consistently available from the surveys. The effects of stress, domestic violence and crime on care have not been examined nor have the effects of poor physical and mental health. Data on these factors should be collected in future studies in order to provide a more complete picture of care and caring behaviours and their effects on urban health and nutrition.

Table 8: Prevalence and Treatment of Diarrhoea

Country	Prevalence of diarrhoea in preceding two weeks ^a		Treatment of diarrhoea					
	Urban	Rural	Taken to a health care provider		Oral rehydration therapy (ORT)		No treatment	
			Urban	Rural	Urban	Rural	Urban	Rural
Burundi	20.7	17.3	54.6	37.5	67.0 ^d	36.5 ^d	18.6	34.1
Kenya	11.9	14.2	52.5	39.4	40.4 ^e	30.5 ^e	12.5	17.9
Madagascar	11.1	12.6	42.1	34.1	45.9 ^g	27.2 ^g
Malawi	19.3	22.3	49.3	45.0	74.8 ^f	61.9 ^f	8.1	16.1
Namibia	13.5	24.1	71.4	67.1	62.4 ^c	66.5 ^c	20.8	17.0
Rwanda	21.6	21.8	29.1	22.5	41.2 ^g	47.3 ^g	23.0	27.5
Tanzania	12.0	12.6	62.1	55.9	73.6 ^c	75.8 ^c	11.8	13.3
Zambia	20.0	25.3	61.9	49.5	73.3 ^f	56.9 ^f	7.8	19.2
Zimbabwe	17.9	25.5	26.7	30.5	83.5 ^b	78.5 ^b	4.8	11.0

SOURCE: Demographic and health survey reports for these countries; see listing in Table 1.

... = No data available.

^a Figures are for children under 5 years of age, except for Zimbabwe where figures are for children under 3 years of age

^b Sugar-salt-water solutions or recommended home fluids

^c ORT and recommended home fluids

^d ORT and sugar-salt-water solutions

^e ORT only

^f ORT or home solutions

^g ORT and home preparation solutions

Vol.33, No.12.

57. Giugliani, E., R. Issler, E. Justo, C. Seffrin, R. Hartmann and N. Carvalho (1992), "Risk factors for early termination of breast-feeding in Brazil", *Acta Paediatrica* Vol.81, No.6.

58. Guilkey, D.K. and J.F. Stewart (1995), "Infant feeding patterns and the marketing of infant foods in the Philippines", *Economic Development and Cultural Change* Vol.43, No.2.

59. For a detailed description, see Akin, J.S., D.K. Guilkey and B.M. Popkin (1985), *The Demand for Primary Health Care in the Third World*, Rowman and Allenheld, Totowa, NJ, USA.

60. Opportunity cost is an economic concept that treats the true cost of a good or service as the cost of the other goods or services that must be given up in order to purchase or use it. See reference 59, page 103.

61. Rossi-Espagnet, A. (1987), "Health services and environ-

VI. COMBINING RESOURCES FOR CARE AND CARE BEHAVIOURS: USING THE MATRIX

WHEN CARE BEHAVIOURS are viewed in terms of the resources available to the caregiver and constraints to care in urban areas, a matrix can pinpoint areas of particular concern. Figure 2 illustrates the use of this matrix with hypothetical data from an urban area. For example, for health care utilization, the major care constraints are time available to the caregiver and educational levels of the caregiver, in addition to the health infrastructure itself. It is possible that maternal workload and flexibility of work could determine whether she has the opportunity to take the child to a hospital or primary health care centre. This problem would be greatest for women working at fixed time jobs who cannot call on other family members for assistance. Poor urban workers might lose a substantial portion of their wages if they took time off from their jobs to take children to health care centres.

Filling in the boxes of the matrix requires collecting data from the local area, including qualitative information, and evaluating the consequences of each. Priorities for action may then be decided not only depending on which are the most pressing problems but also by identifying those that are more amenable to policy interventions and regulatory changes. Ideally, one would be able to identify particular boxes as the most important and most feasible for policy actions.

Figure 2: Matrix of Caregiving Behaviours and Resources and Constraints to Care: An Hypothetical Example of the Possible Effects of Urbanization

Resource for Care/ Constraints to Care	Caring Behaviours		
	Care for Women	Breast-feeding	Feeding and complementary feeding
Education and beliefs	Lack of association with traditional sources of help may reduce positive traditional pregnancy and postpartum practices (-) <u>Increased use of prenatal care (+)</u>	Lack of association with traditional sources of help may reduce positive breast-feeding practices (-)	Higher levels of education associated with early weaning (-) <u>Greater variety of foods given to child, more hygienic feeding methods (+)</u>
Physical health of caregiver	<u>Better health may be associated with improved nutrition prenatally and better pregnancy outcome (+)</u> Poor health in overcrowded slums may be detrimental to pregnancy outcome (-)	<u>Better nutrient status associated with improved milk quality (+)</u>	<u>Less sickness of mother leads to better complementary feeding (+)</u>
Mental health	Social isolation associated with depression (-)	Perhaps less breast-feeding associated with social isolation (-)	Lack of confidence undermines ability to feed actively (-)
Workload of women	May work prior to birth, and immediately after (-) <u>May have fewer children, so less child care burden (+)</u>	Higher workload in urban area prevents exclusive breast-feeding	Lack of time for feeding (-) <u>Better complementary foods available (+)</u>
Autonomy and resource control	<u>More resource control associated with higher priority for prenatal care (+)</u>	More autonomy may increase breast-feeding decisions taken by self (+ or -)	<u>May be more able to direct food to child (+)</u> More places for income to go other than for food (-)
Social support and community support	<u>Improved birthing practices (+)</u> Less support in nuclear families, e.g., less support from mothers-in-law (-)	More hospital births; offered prelacteal feeds, formula (-)	Fewer alternate caregivers (-)

SOURCE: Adapted from Engle, P. L. and S. Huffman (1996), "Care for life: guidelines for assessment, analyses, and action to improve care for nutrition", draft paper prepared for Nutrition Section, UNICEF, New York.

Caring Behaviours (continued)		
Food preparation and food hygiene	Psycho-social care	Care during illness and health-seeking
<u>Better informed on food hygiene (+)</u>	<u>Child care practices may be more labour-intensive and child-centred (+)</u> Less time may be spent with child (-)	<u>Better informed on how to use health services, therefore better utilization (+)</u> Opportunity cost of time needed to use health care may be high (-)
<u>Better health more conducive to better food hygiene and preparation (+)</u>	Nutritional status of mother may affect interaction with child (+ or -)	<u>Less sickness improves ability of mother to care for sick child and to seek health care (+)</u>
	Depression or stress may inhibit ability to play and stimulate child (-)	Maternal stress/lack of confidence could reduce her health-seeking and home health practices (-)
Lack of time leads to different kinds of foods (-) <u>Pre-prepared foods and street foods reduce food preparation time (+)</u>	Less time for care by mother (-) <u>Possible early child (+)</u>	Less time to take child to health clinic (-) <u>Health clinics more development resources available and of better quality (+)</u> <u>Possible to allocate more resources for health care for children (+)</u>
No assistance in food preparation, (-)	Less time spent socializing with other individuals (-)	

mental factors in urban slums and shantytowns of the developing world", *Food and Nutrition Bulletin* Vol.9, No.4.

62. Caldwell, P. (1986), "Routes to low mortality in poor countries", *Population and Development Review* Vol.12, No.2.; also Barrera, A. (1990), "The role of maternal schooling and its interaction with public health programs in child health production", *Journal of Developmental Economics* Vol.32, No.1; and reference 7, Joshi (1994).

63. Thomas, D., J. Strauss and M.H. Henriques (1991), "How does mother's education affect child height?", *Journal of Human Resources* Vol.26, No.2.

64. von Braun, J., J. McComb, B.K. Fred-Mensah and R. Pandya-Lorch (1993), *Urban Food Insecurity and Malnutrition in Developing Countries: Trends, Policies, and Research Implications*, International Food Policy Research Institute, Washington DC; also reference 49.

65. Timaeus, I.M. and L. Lush (1995), "Intra-urban differentials in child health", *Health Transition Review* Vol.5, pages 163-190; also Bicego, G. and O.B. Ahmad (1996), "Infant and child mortality", *Demographic and Health Surveys Comparative Studies* No.20, Macro International Inc., Calverton, MD, USA.

66. Brockerhoff, M. (1995), "Child survival in big cities: the disadvantages of migrants", *Social Science and Medicine* Vol.40, No.10, pages 1371-1383.

67. Zimbabwe Central Statistical Office and Macro International Inc. (1995), *Zimbabwe Demographic and Health Survey 1994*, Calverton, MD, USA.

VII. CONCLUSIONS AND RESEARCH AGENDA

THE EXTENDED UNICEF framework on care for nutrition can be used to evaluate care constraints and care resources in urban areas. The matrix of care resources and care behaviours helps to pinpoint where the critical constraints and potential solutions regarding care may be. For example, the DHS data reported here indicate that, generally, women head well over 10 per cent of all urban households in southern and eastern Africa. It is likely that these women are juggling the responsibilities of earning an income for the household and of taking care of the children. If finding adequate child care is a problem, actions to develop child care networks either at work or in the community could be promoted.

Used in combination with existing data, the matrix can also identify where additional research is needed. Priority areas for research identified in this study include the following:

- knowledge of the care systems used by the urban poor, particularly when faced with child and maternal illness;
- the development of indicators to accurately distinguish levels of poverty, living conditions and care needs of the urban poor;
- the effects of physical and psychological stress on care behaviours of the urban poor, especially women;
- the assessment of working conditions for women and the development of strategies that facilitate the combination of child care and employment, and encourage the identification of resources within the household and community to assist in child care;
- understanding adaptation and coping strategies of urban families, especially "resilient" families who successfully manage child care even when faced with a difficult urban environment; and
- evaluation of strategies used by outside agencies to provide assistance to communities in the improvement of care behaviours and child nutrition.

Additional research is also needed on the role education plays in improving care for children and on the pathways through which it works, whether it be through increasing income, knowledge or other factors. This exercise has shown that useful information on care resources and behaviours can be obtained using existing data. Even greater benefit will come from further study and increased application by local and national authorities of the conceptual framework highlighted here for the identification of constraints to care and to the development and promotion of sustainable efforts that work to overcome them.