
Nutrition of Infants And Young Children In Namibia

AFRICA NUTRITION CHARTBOOKS



U.S. Agency for International Development
AFR/ARTS and R&D/N



Macro International Inc.



Food Security and Nutrition Monitoring Project

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NUTRITION OF INFANTS AND YOUNG CHILDREN IN NAMIBIA

Findings from the 1992 Namibia DHS Survey

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May 1993

This chartbook was produced by the Africa Regional DHS Nutrition and Family Health Analytical Initiative Project funded by the U.S. Agency for International Development (AFR/ARTS) through the IMPACT Project (R&D/N)

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Introduction

Undernutrition¹ is one of the most important health and welfare problems among infants and young children in Namibia. It is a result of both inadequate intake of food and poor environmental sanitation. An inadequate intake of food is a consequence of improper feeding practices and/or insufficient food at the household level. Improper feeding practices include both the quality and quantity of foods offered to young children as well as the timing of their introduction. Poor sanitation puts young children at risk of increased illness, in particular diarrhoeal disease, which adversely affects a child's nutritional status. Both inadequate food intake and poor environmental sanitation reflect underlying social and economic conditions.

Undernutrition has significant health and economic consequences. The most serious of these is the increased risk of dying. Other outcomes include increased risk of illness and a lower level of cognitive development, which results in lower educational attainment. In adulthood, the accumulated effect of long-term undernutrition can be a reduction in worker productivity and increased absenteeism in the workplace, both of which may reduce individual and national lifetime earning potential. Furthermore, undernutrition can result in adverse pregnancy outcomes.

The Namibian data presented here are from the 1992 Namibia Demographic and Health Survey (NDHS), a nationally representative survey conducted by the Ministry of Health and Social Services and the Central Statistical Office, National Planning Commission, with technical assistance from Macro International Inc. The data presented for other sub-Saharan African countries are from Demographic and Health Surveys carried out in those countries.

¹ The technical definitions for *undernutrition* as defined by the National Center for Health Statistics (NCHS), the Centers for Disease Control (CDC), and the World Health Organization (WHO) are presented in the Appendix.

Undernutrition among Children under 5 Years, Namibia

In Namibia:

- Nearly **three in ten children under 5 years are chronically undernourished**. In other words, they are too short for their age or *stunted*.¹ The proportion of children stunted is about **13 times** the level expected in a healthy, well-nourished population.
- Over **one in four children is *underweight***² for their age. This is also about **13 times** the level in a healthy, well-nourished population.
- About **one in ten children suffers from acute undernutrition**. This is manifested by the child being too thin for his or her height or *wasted*.³ The proportion of children who are wasted is **4 times** the level expected in a healthy, well-nourished population.

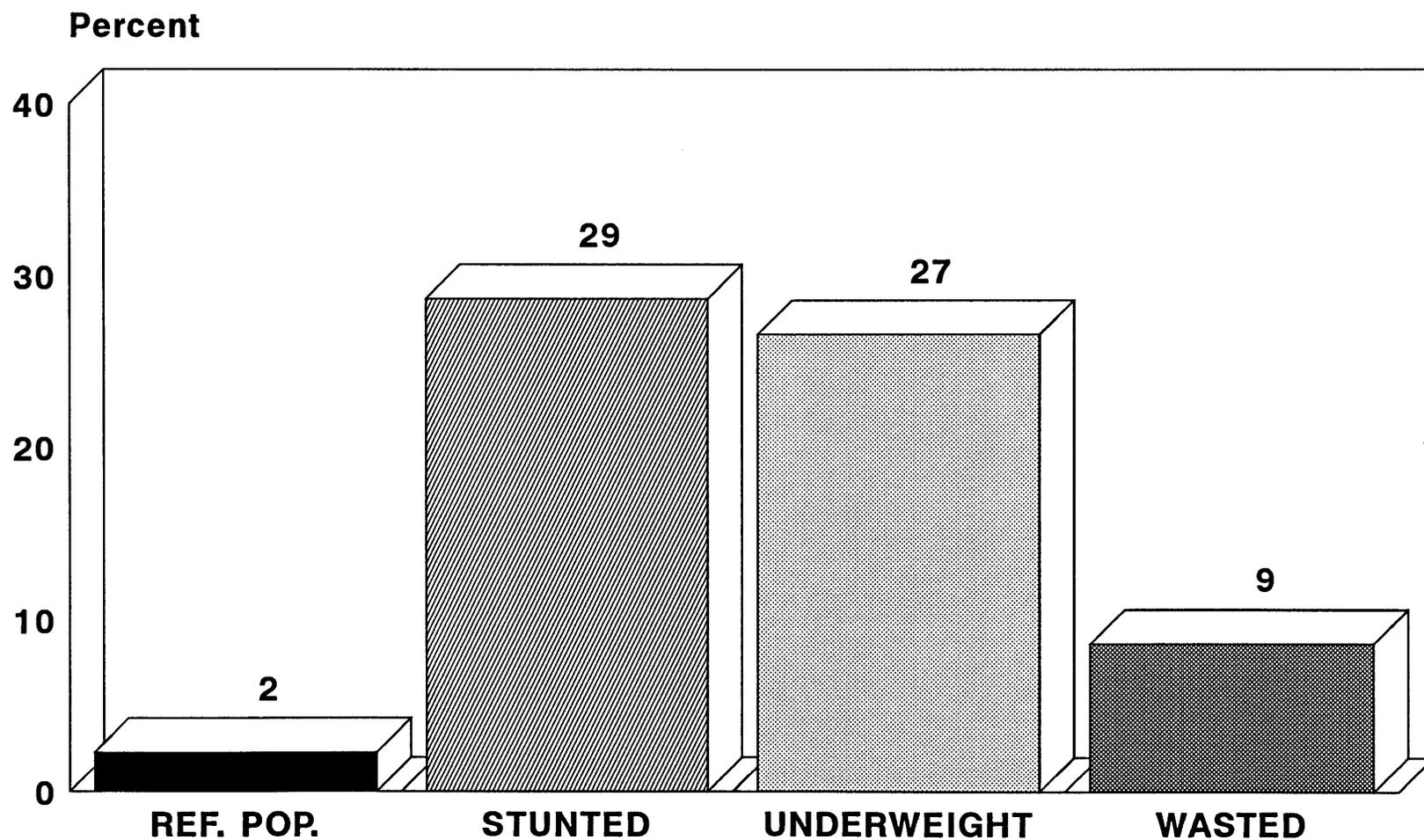
¹ A *stunted* child has a height-for-age Z-score that is below -2 SD based on the NCHS/CDC/WHO international reference population. Chronic undernutrition is the result of an inadequate intake of food over a period of time and could also be affected by chronic illness.

² An *underweight* child has a weight-for-age Z-score that is below -2 SD based on the NCHS/CDC/WHO international reference population. This condition can result from either chronic or acute undernutrition.

³ A *wasted* child has a weight-for-height Z-score that is below -2 SD based on the NCHS/CDC/WHO international reference population. Acute undernutrition is the result of a recent failure to receive adequate nutrition and may be affected by acute illness, in particular diarrhoea.

Figure 1

Undernutrition among Children under 5 Years, Namibia



Note: Stunted reflects chronic undernutrition; wasted reflects acute undernutrition; underweight reflects either chronic or acute undernutrition.

Undernutrition among Children Age 3 to 36 Months¹ in Namibia and other sub-Saharan Countries, DHS 1986-1992

Among the sub-Saharan countries surveyed:

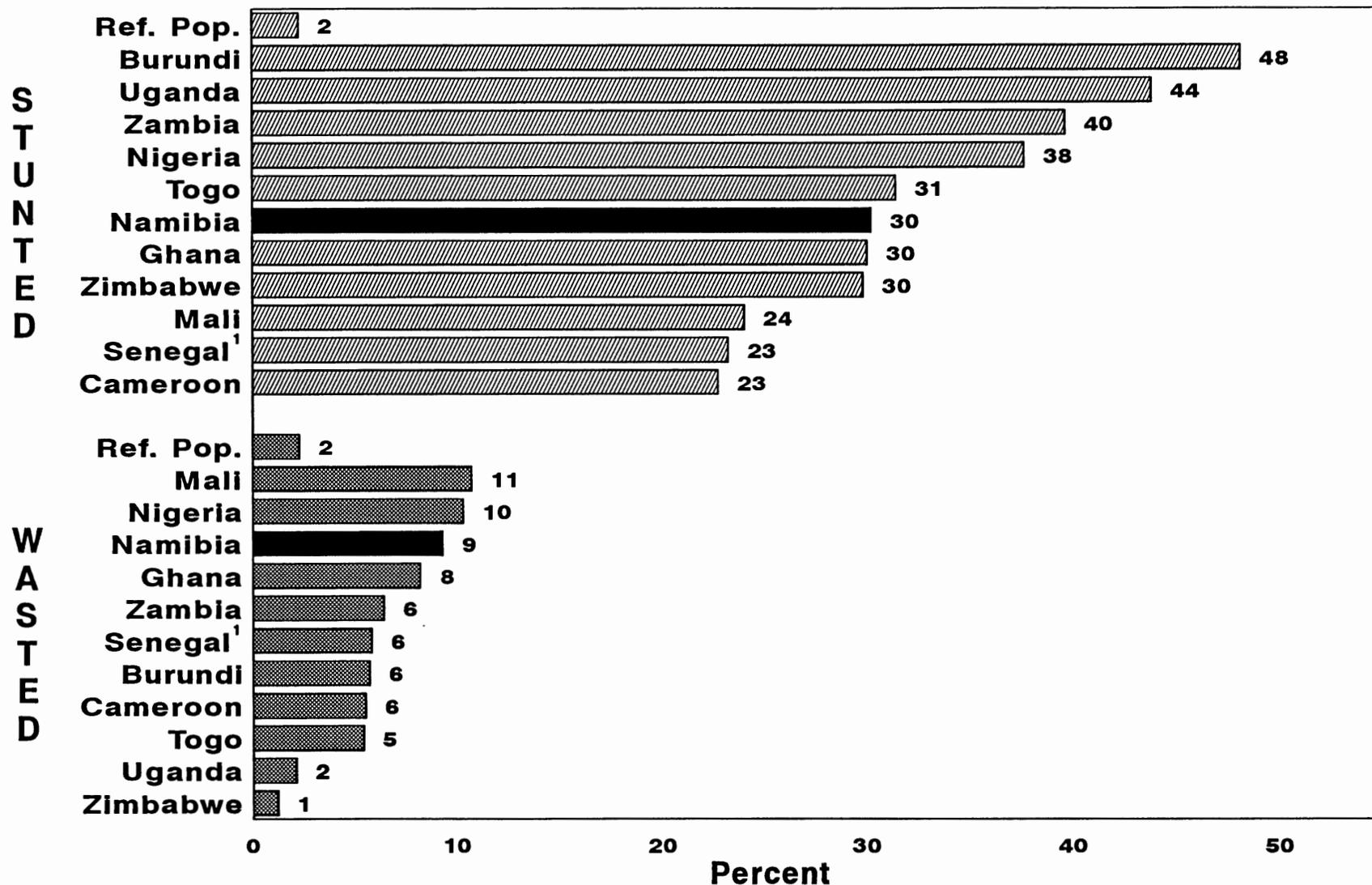
- **Namibia has the third highest level of acute undernutrition.²**
- **In contrast, Namibia, along with Ghana and Zimbabwe, has the third lowest proportion of children who are stunted, but the level is 13 times that expected in a well-nourished population.**

¹ Unlike Namibia, in some countries data were collected only for children age 3 to 36 months. For comparative purposes data for this age range are presented.

² It is important to note that these data come from surveys carried out in different seasons between 1986 and 1992, which could affect the comparability of the results.

Figure 2

Undernutrition among Children Age 3 to 36 Months in Namibia and other sub-Saharan Countries, DHS 1986-1992



Note: Stunted reflects chronic undernutrition; wasted reflects acute undernutrition.

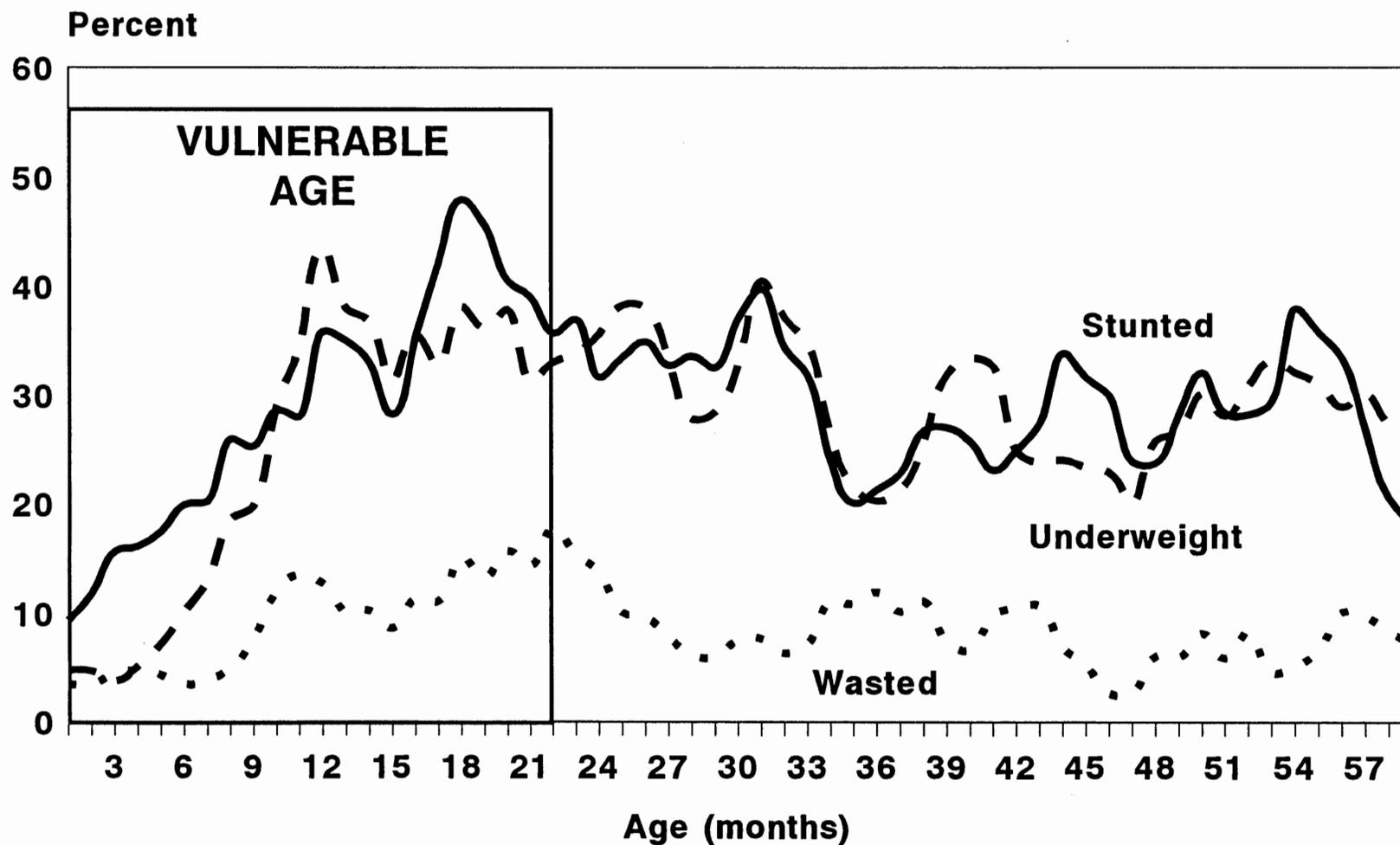
¹ Infants and children age 6 to 36 months

Undernutrition by Age, Namibia

In Namibia, the time between 1 and 22 months of age is the vulnerable age:

- **Wasting**, indicating acute malnutrition, peaks around 12 months of age and stays high through 22 months when it affects more than **one in ten** children.
- **Stunting**, indicating chronic malnutrition, begins early in life and increases rapidly until 18 months of age when it affects **one in two** children.
- The proportion of children **underweight** increases to over **four in ten** by the age of 12 months before declining and stabilizing at around 35 percent.

Figure 3 Undernutrition by Age, Namibia



Note: Stunted reflects chronic undernutrition; wasted reflects acute undernutrition; underweight reflects either chronic or acute undernutrition.

Feeding Practices for Infants under 4 Months, Namibia

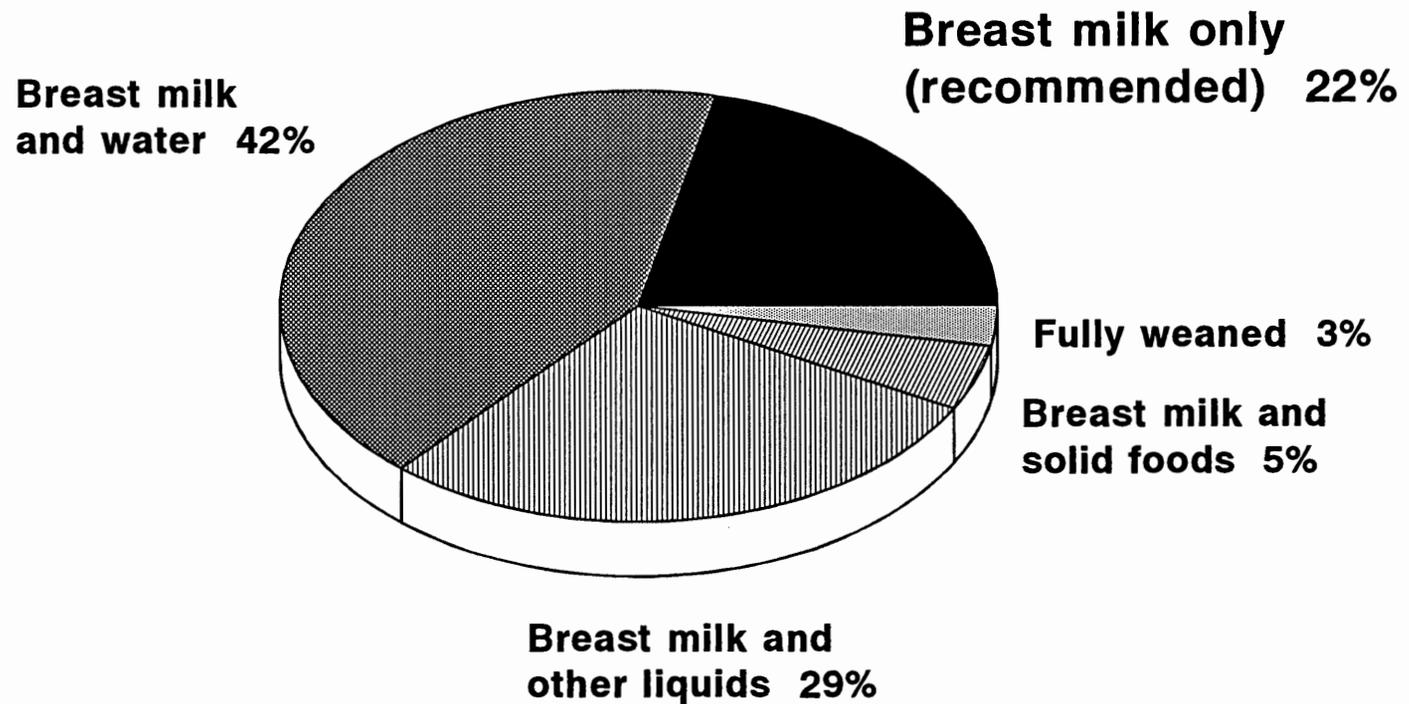
Feeding patterns, as well as diarrhoeal disease, are important determinants of undernutrition.¹ The World Health Organization (WHO) recommends that all infants be exclusively breastfed from birth to 4 to 6 months of age. In other words they should be fed only breast milk.

In Namibia, the introduction of liquids, such as water, sugared water, teas, commercial formulae, and solid foods takes place far too early in life. This practice has a deleterious effect on nutritional status for a number of reasons. First, the liquids and solid foods offered are nutritionally inferior to breast milk. Second, the intake of liquids and solid foods results in lower breast milk intake which, in turn, reduces the mother's supply of milk because breast milk production is determined, in part, by both the frequency and intensity of suckling. Third, feeding young infants liquids and solid foods increases their exposure to pathogens and consequently puts them at greater risk of diarrhoeal disease.

- Only about **one in five** Namibian children under the age of 4 months is **exclusively breastfed**, as recommended by WHO.
- **One in three** infants under 4 months is given some form of supplemental feeding, **contrary to recommendations**.
- To a large extent, the failure to exclusively breastfeed for the first 4 to 6 months of life accounts for the rapid increase in undernutrition among young infants.

¹ Information on feeding practices is based on the 24 hours preceding the survey.

Figure 4
Feeding Practices for Infants under 4 Months, Namibia



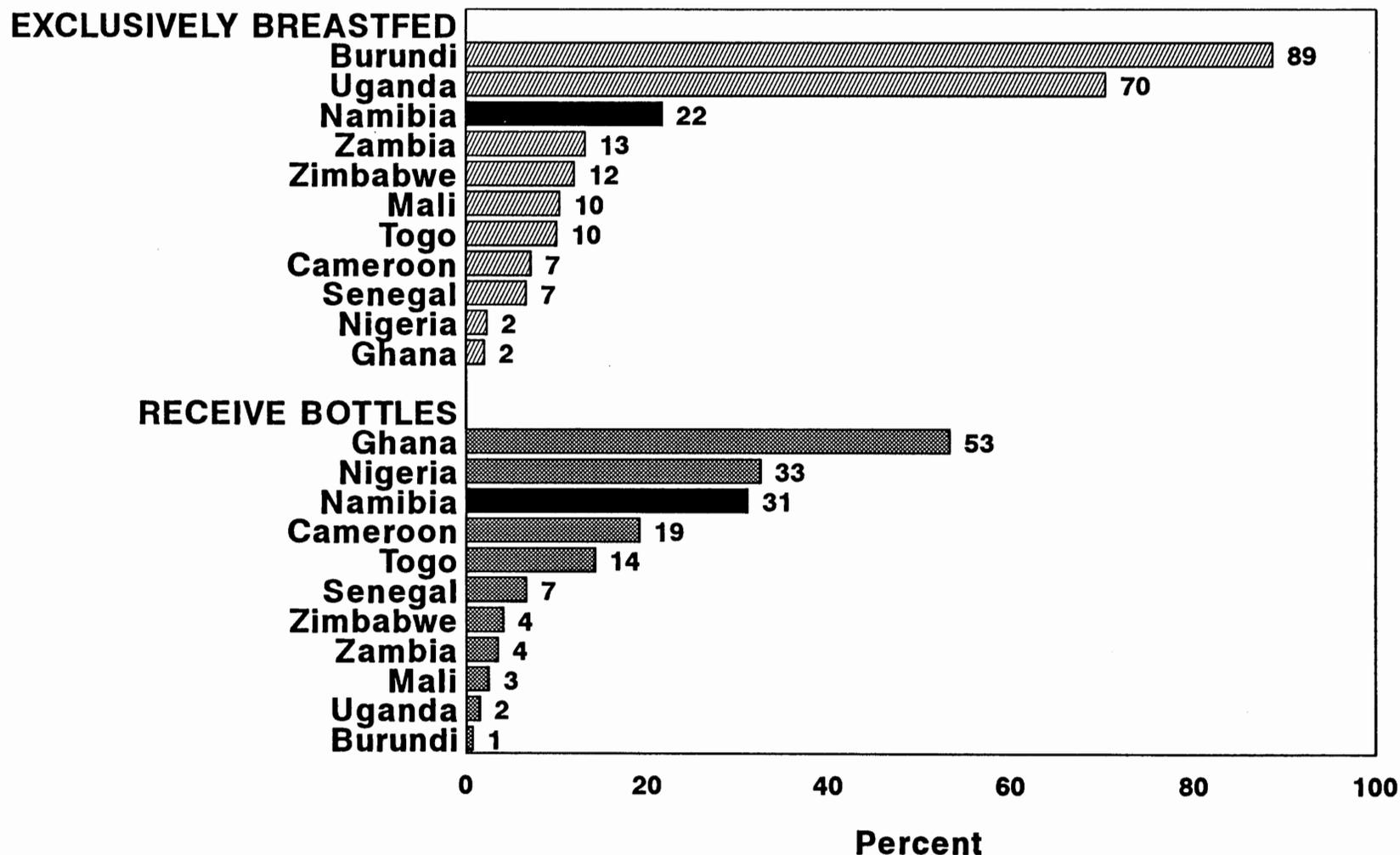
Note: WHO recommends that all infants be breastfed exclusively until they are 4 to 6 months old.

Infants under 4 Months Who Are Exclusively Breastfed and those Who Receive Supplemental Bottles, in Namibia and other sub-Saharan Countries, DHS 1986-1992

Not breastfeeding exclusively and introducing liquids and solid foods prematurely both increase the risk of diarrhoeal disease, a highly important cause of mortality in Africa.

- In the sub-Saharan countries surveyed few mothers of infants under 4 months follow the recommended practice of exclusively breastfeeding. Although **Namibia has the third highest proportion of infants who are exclusively breastfed**, nearly four out of five infants are fed inappropriately. In contrast, almost all infants are exclusively breastfed in Burundi.
- **Bottle feeding**, a non-recommended practice, is used by **more than three in ten Namibian mothers for infants under 4 months**; the third highest level among the countries surveyed.

Figure 5
Infants under 4 Months Who Are Exclusively Breastfed and Those Who Receive Supplemental Bottles¹, in Namibia and other sub-Saharan Countries, DHS 1986-1992



Note: WHO recommends that all infants should receive nothing but breast milk until 4 to 6 months of age.

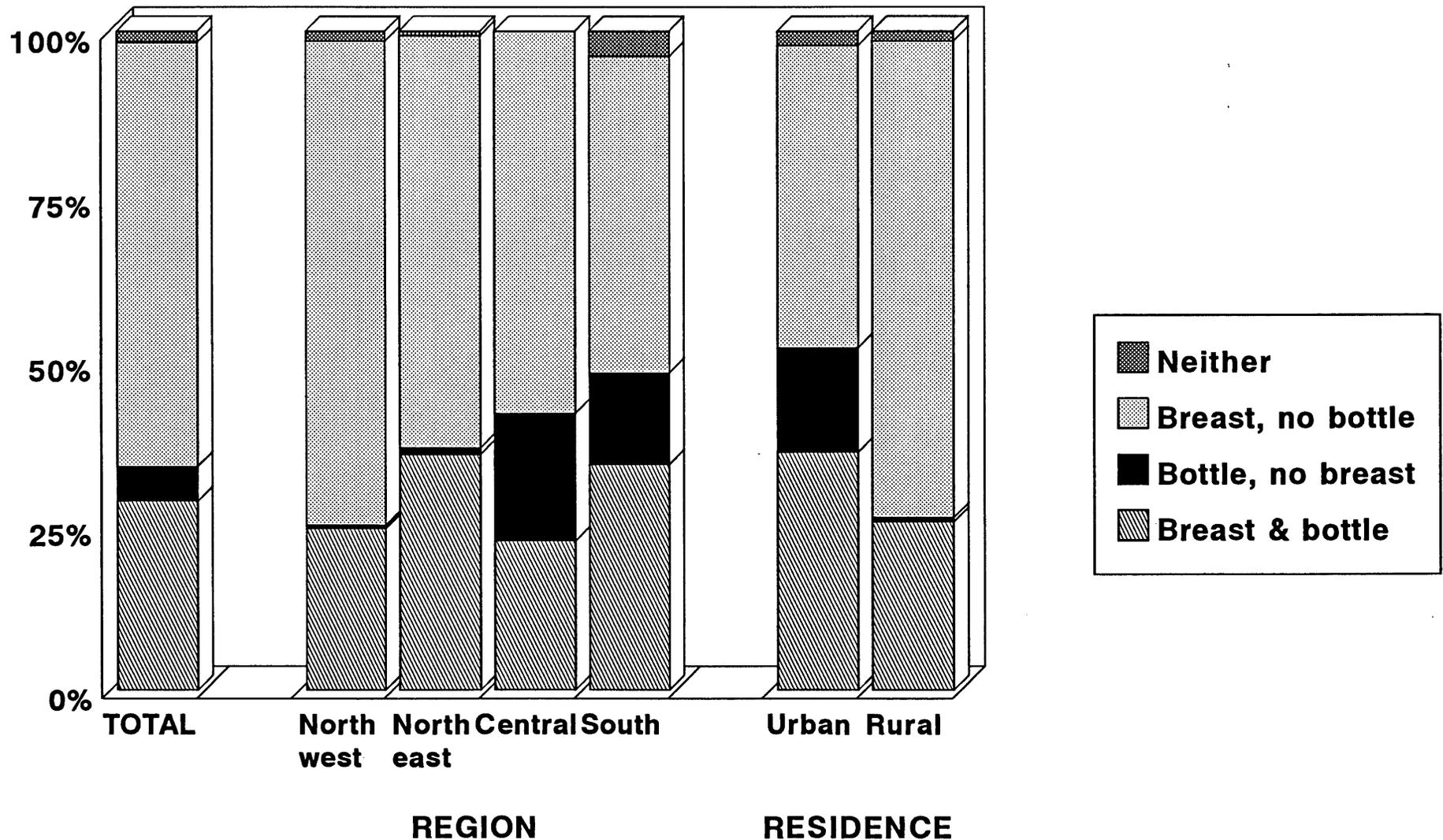
¹Information on feeding practices is based on the 24 hours preceding the survey.

Regional and Residential Differences in Feeding among Infants under 6 Months, Namibia

Improper use of bottles can lead to infant illness due to exposure to contaminants and thus disease pathogens. An equally important risk is that bottle use can reduce the maternal milk supply because the suckling stimulus of the infant, which promotes breast milk production, is reduced.

- **More than one in three breastfed Namibian infants under 6 months of age is also given a bottle.**
- **Fifty percent of infants in the South region receive a bottle, compared with 25 percent in the Northwest region.**
- **Bottle use is twice as common in urban areas than in rural areas.**

Figure 6
Regional and Residential Differences in Feeding
among Infants under 6 Months, Namibia

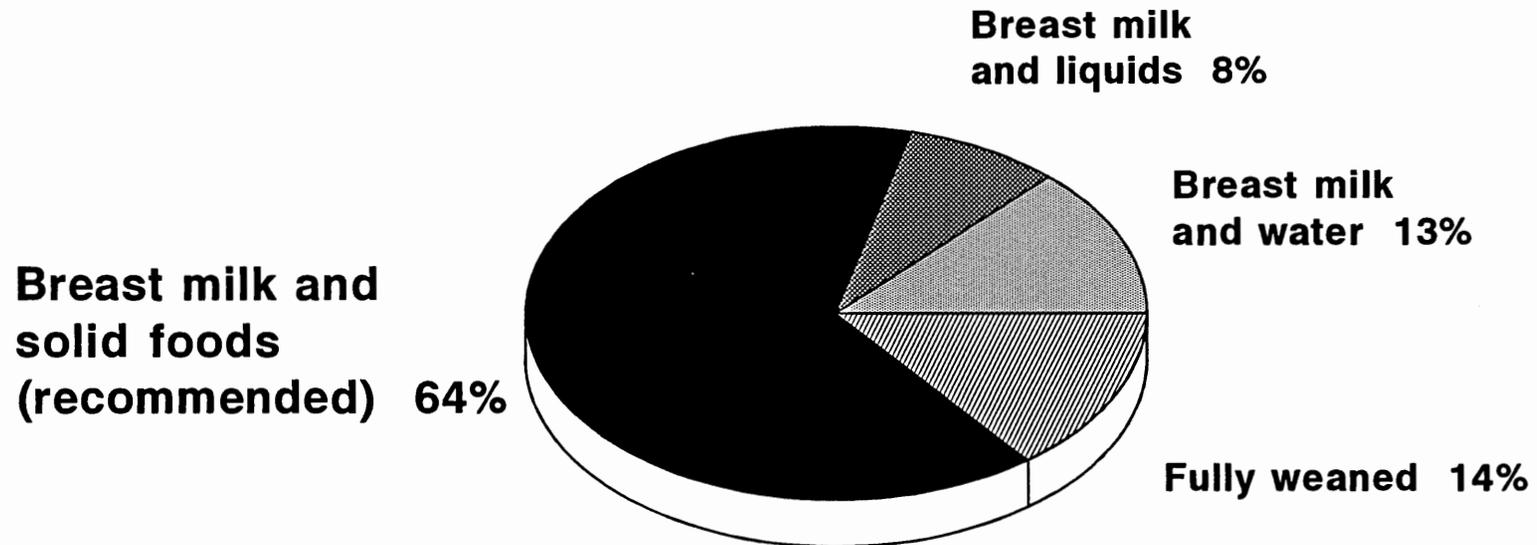


Feeding Practices for Infants Age 6 to 9 Months, Namibia

The World Health Organization also recommends that solid foods be introduced to infants between the ages of 4 to 6 months because breast milk, on its own, is no longer sufficient to maintain optimal child growth. Thus, all infants over 6 months of age should be receiving solid foods along with breast milk.

- **Nearly two out of three Namibian infants age 6 to 9 months are fed solid food in addition to breast milk. In other words, only about two-thirds of the infants between the ages of 6 and 9 months are fed according to the recommended practice.**
- **Over 10 percent of infants age 6 to 9 months are still fully breastfed; 8 percent are fed only liquids in addition to breast milk; and 14 percent are fully weaned from the breast.**

Figure 7
Feeding Practices for Infants Age 6 to 9 Months, Namibia

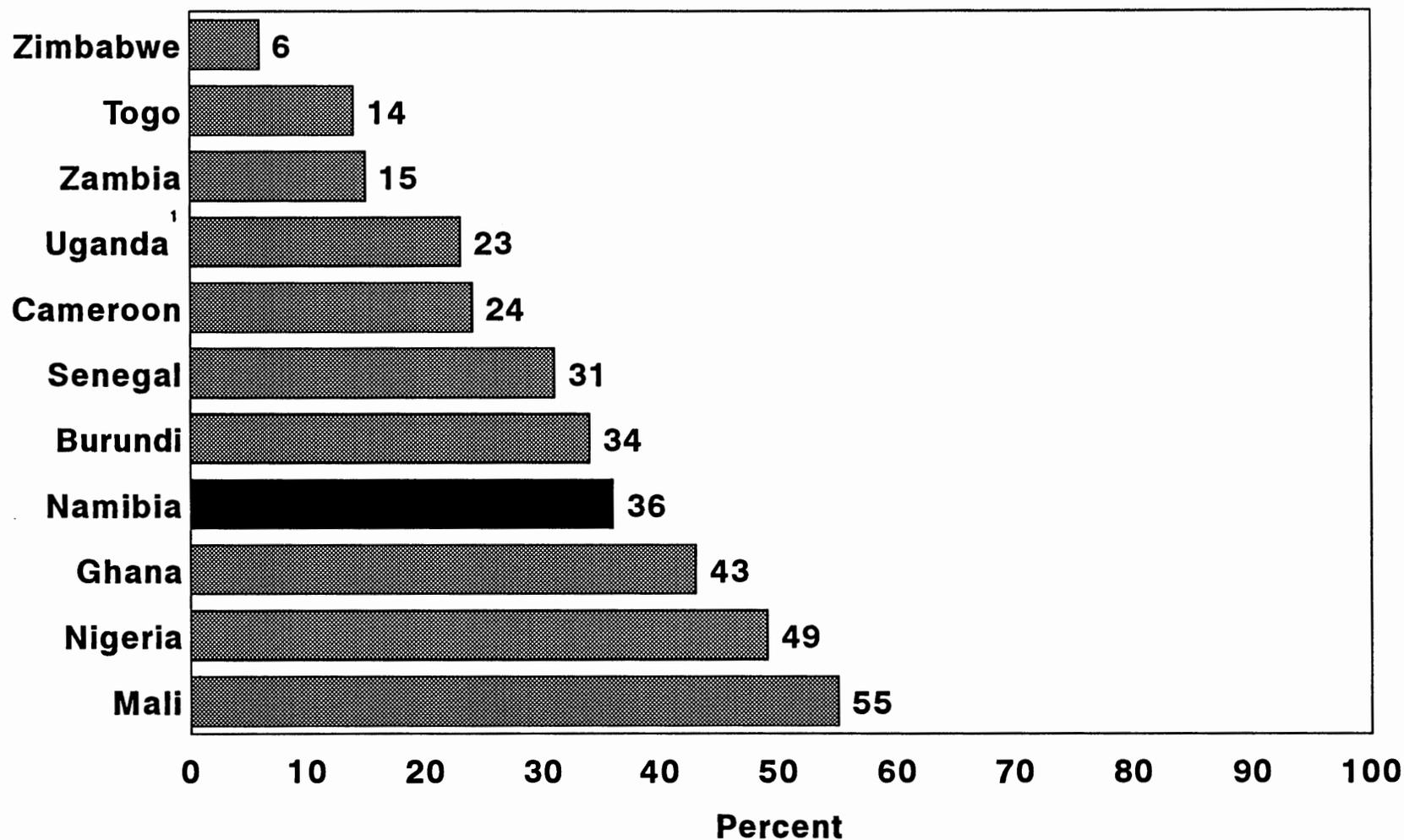


Note: WHO recommends that by the age of 6 months all infants should receive solid foods in addition to breast milk.

Infants 6 to 9 Months Not Receiving Food in Addition to Breast Milk in Namibia and other sub-Saharan Countries, DHS 1986-1992

- **In Namibia over 35 percent of the infants age 6 to 9 months are not fed according to the World Health Organization recommendations. This is the fourth highest proportion of infants that receive neither breast milk nor solid foods among the sub-Saharan countries for which DHS data are available.**

Figure 8
Infants 6 to 9 Months not Receiving
Food in Addition to Breast Milk in Namibia
and other sub-Saharan Countries, DHS 1986-1992



Note: WHO recommends that by the age of 6 months all infants should receive solid foods in addition to breast milk.

¹Includes liquids.

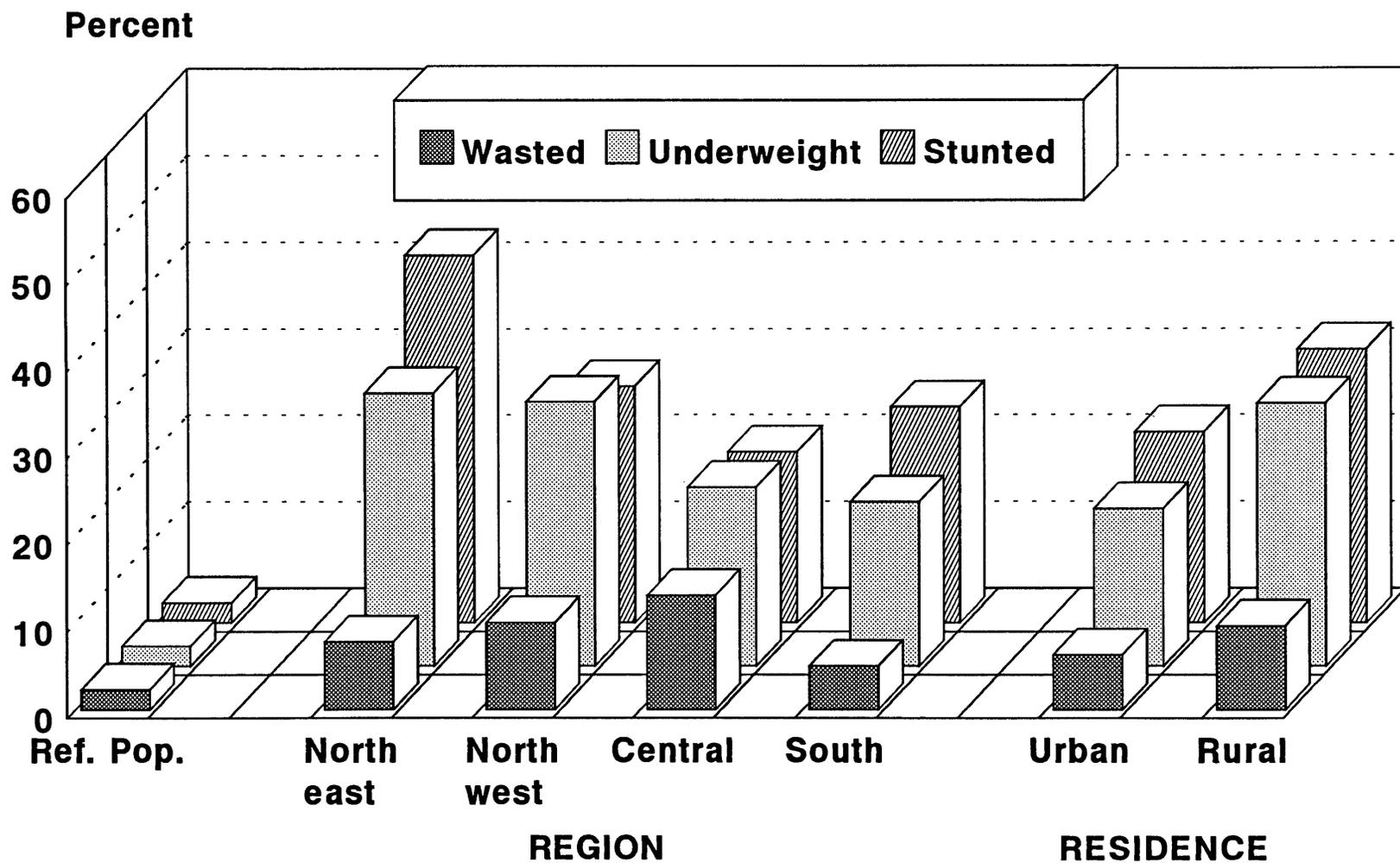
Undernutrition among Children under 5 Years by Region and Residence, Namibia

In Namibia:

- **More than two in five children in the Northeast region are stunted versus about one in four in the Northwest and South regions and one in five in the Central region.**
- **Underweight is prevalent in all areas of Namibia, but much more so in the Northwest and Northeast regions, where more than three in ten children are underweight.**
- **Wasting affects more than one in ten children in the Central and Northwest regions.**
- **Stunting, underweight, and wasting are all higher in rural areas, where about 60 percent of the population lives, than in urban areas.**

Figure 9

Undernutrition among Children under 5 years by Region and Residence, Namibia



Note: Stunted reflects chronic undernutrition; wasted reflects acute undernutrition; underweight reflects either chronic or acute undernutrition.

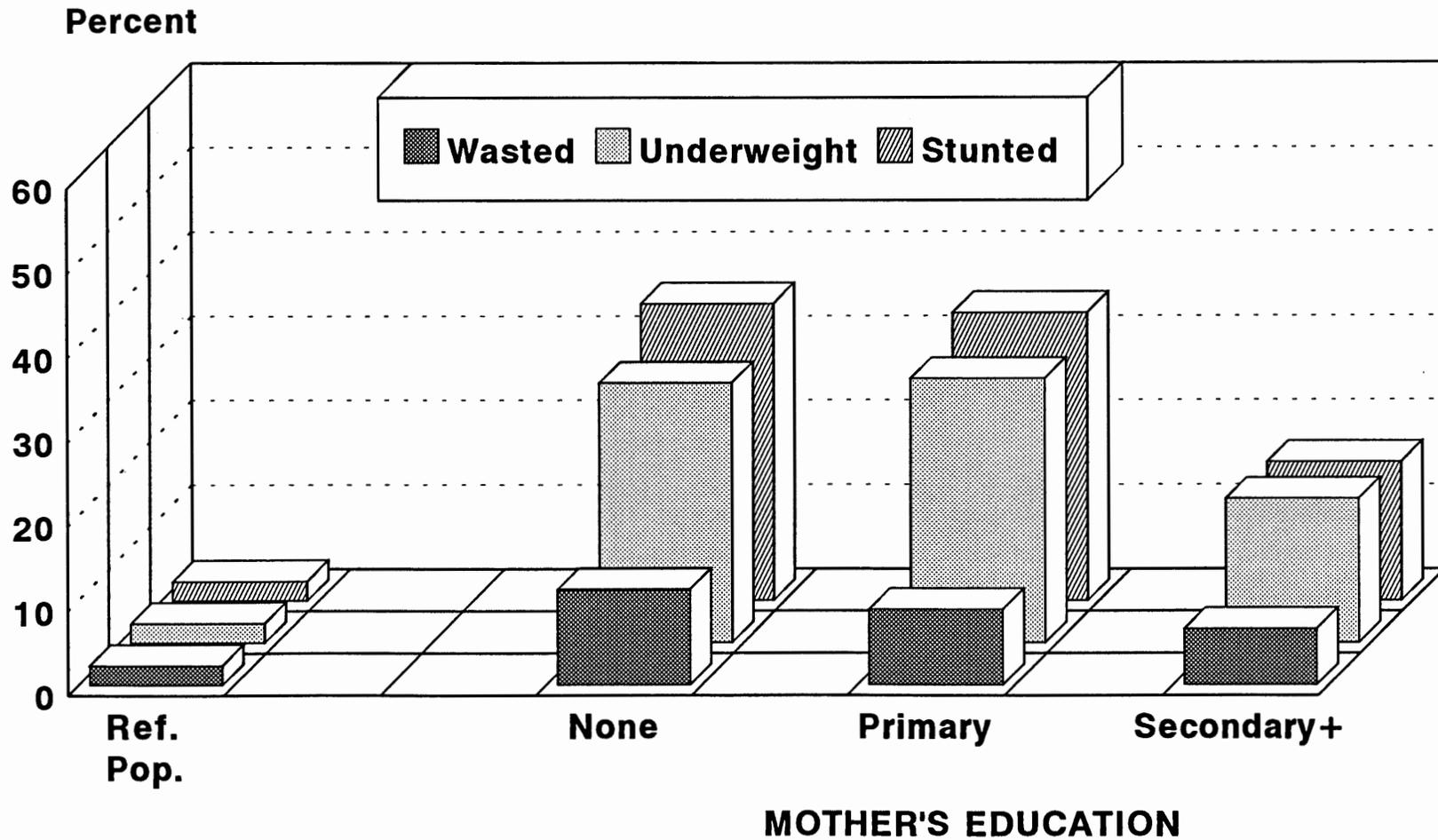
Undernutrition among Children under 5 Years by Mother's Education, Namibia

Maternal education is related to both a knowledge of good child-care practices and household wealth. Fifteen percent of Namibian mothers have never attended school and about 50 percent have attended only primary school. However, there are regional differences; mothers in the Central region are less likely to have been to school, while the opposite is true for mothers in the Northwest and South regions.

- **One in three children of mothers with no education or primary education is stunted whereas one in six children of mothers with secondary or higher education is stunted.**
- **Underweight is nearly twice as high among children of mothers with no education or primary education than it is among children whose mothers have attended secondary school or higher education.**

Undernutrition is high even among the children of educated women, suggesting that traditional infant and child feeding practices are inadequate for good nutrition and may have serious adverse effects on children's growth.

Figure 10
Undernutrition among Children under 5 Years by
Mother's Education, Namibia



Note: Stunted reflects chronic undernutrition; wasted reflects acute undernutrition; underweight reflects either chronic or acute undernutrition.

Undernutrition among Children under 5 Years by Source of Water and Type of Toilet, Namibia

The source of water and type of a toilet are representative of both household wealth and environmental sanitation. Poor households are more likely to obtain water from open-air or public sources, and are less likely to have toilet facilities. Where water is not readily available, food hygiene is often inadequate. Furthermore, poor sanitation results in an increased number of insects (particularly flies) thus increasing the risk of food contamination. Both of the above increase the risk of diarrhoeal disease, which can result in undernutrition.

- **Over 40 percent of Namibian households have water piped to their house or have a private well, about 20 percent use a public tap, 20 percent use a public well, and the remainder use open-air sources of water.**
- **More than one-half of households do not have any toilet facilities, one-third have a flush toilet, and the remainder have a pit latrine.**

Infants and children from households that have neither a private water supply nor a flush toilet are at greater risk of being undernourished than those from households with these amenities. This reflects not only the association between environmental sanitation (and thus the risk of diarrhoeal disease) and nutritional status, but also household wealth. Wealth determines a household's food supply and the ability to have a private water supply and flush toilet. Although the availability of a private water supply or a flush toilet may be associated with a reduced risk of a child being undernourished, they do not ensure that a child will be well-nourished.

- **Even among households with a private supply of water, one in four children is too short for his or her age as is one in five children from households with a flush toilet.**
- **About one in five children from households with a private supply of water is underweight as is one in six children from households that have a flush toilet.**

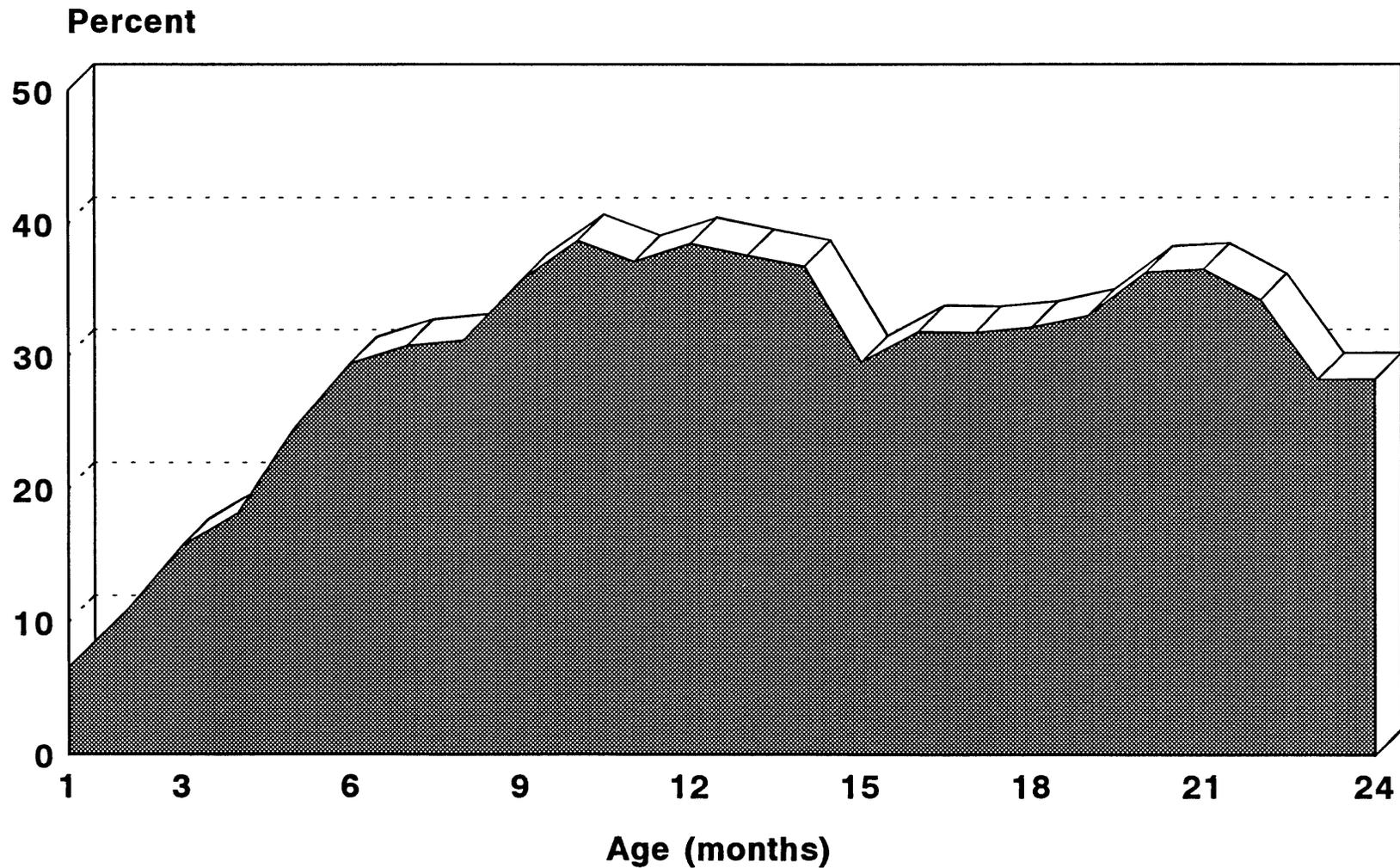
Age-related Pattern of Diarrhoea among Children Age 1 to 24 Months, Namibia

In Namibia:

- **The prevalence of diarrhoea increases rapidly and dramatically among infants under 10 months of age before levelling off, and declining slightly.**
- **The age-related pattern of diarrhoeal disease is similar to that for acute undernutrition. This is not surprising given that diarrhoea is a major determinant of acute undernutrition.**

The age-related pattern of diarrhoea reflects the increased risk of pathogen contamination associated with the early introduction of water, other liquids, and solid foods. In addition, once young children begin to crawl and move around, they tend to put objects into their mouths, increasing the risk of pathogen contamination.

Figure 12
Age-related Pattern of Diarrhoea among
Children Age 1 to 24 Months, Namibia



Prevalence of Diarrhoea, Fever, and Cough among Children Age 1 to 24 Months¹ in Namibia and Other sub-Saharan Countries, DHS 1986-1992

- **One in three Namibian children under 24 months had diarrhoea** in the two weeks preceding the survey. This is one of the lowest proportions of children with diarrhoea among the countries surveyed.

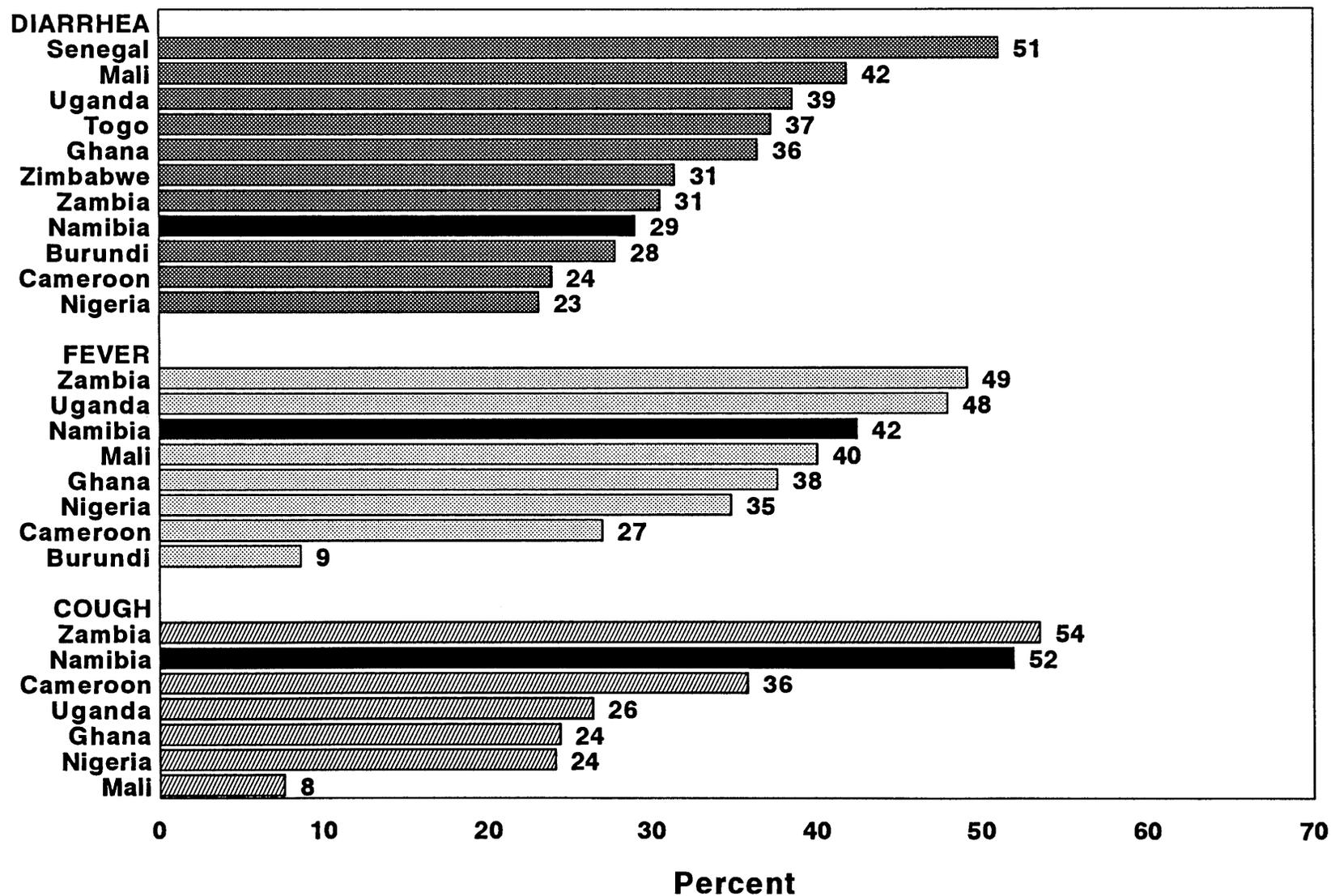
It must be borne in mind that a mother's perception of diarrhoea may differ by country and this could influence these findings.

- **Over two in five Namibian children were reported to have had fever in the preceding two weeks.** This is in the upper range of the countries surveyed.
- **More than one in two Namibian children was reported to have had a cough or rapid breathing** in the preceding two weeks. This is the second highest level of the countries surveyed.

There are seasonal patterns in the prevalence of diarrhoea, fever, and respiratory illness which must be taken into account when comparing the results of the various surveys.

¹ Data are presented only for children under 2 years because this age group is the most vulnerable to diarrhoeal disease.

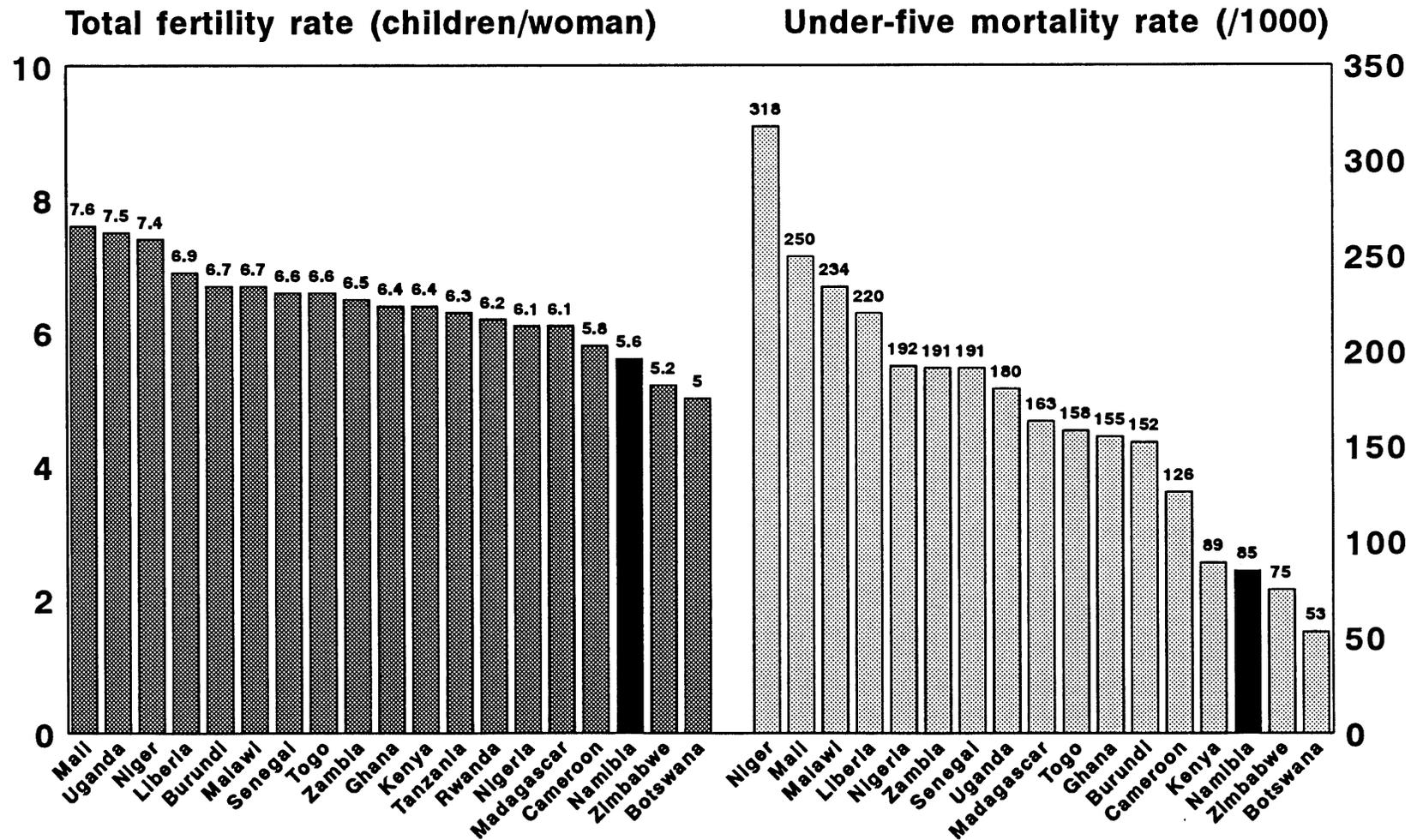
Figure 13
Prevalence of Diarrhoea, Fever, and Cough among
Children Age 1 to 24 Months in Namibia and
other sub-Saharan Countries, DHS 1986-1992



Fertility and Under-five Mortality in Namibia and other sub-Saharan Countries, DHS 1986-1992

- **The rate of childbearing in Namibia is high. At current levels, Namibian women have an average of 5.6 children by the end of their childbearing years (total fertility rate for women age 15 to 49 years), which although high is lower than that for many of the other sub-Saharan countries surveyed.**
- **About one in twelve Namibian children die before their fifth birthday. Namibia has an under-five mortality rate of 85 deaths per 1000 births, which, while still excessive, is the third lowest for the countries surveyed. It is likely that the mortality rate in Namibia is related to the high levels of acute undernutrition found in that country.**

Figure 14
Fertility and Under-five Mortality in Namibia
and other sub-Saharan Countries, DHS 1986-1992



Appendix

The Nutrition Standard Distribution

The assessment of nutritional status is based on the concept that in a well-nourished population the distributions of children's height and weight, for a given age, will approximate a normal distribution. This means that about 68 percent of children will have a weight within 1 standard deviation of the mean for children of that age or height, and a height within 1 standard deviation of the mean for children of that age. About 14 percent of children will be between 1 and 2 standard deviations above the mean; these are considered relatively tall or overweight for their age or fat for their height. Another 14 percent will be between 1 and 2 standard deviations below the mean; these are considered relatively short or underweight for their age or thin for their height. Of the remainder, 2 percent will be very tall or very overweight for their age or very fat for their height, and 2 percent will be very short (stunted) or very underweight for their age or very thin (wasted) for their height, i.e., these categories are more than 2 standard deviations above or below the mean.

For comparative purposes nutritional status has been determined using the International Reference Population defined by the United States National Center for Health Statistics and the Centers for Disease Control and recommended by the World Health Organization.

