PN-ABM-196

Africa

Demographic and Health Surveys

PN-ABM-196

Senegal: UN/John Isaac

Fact Book

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Ghana: World Bank/Yosef Hadar

This chartbook was produced by the International Programs of the Population Reference Bureau (PRB), Washington, D.C., as part of PRB's occasional series of booklets on international population and family planning themes. It summarizes some of the major policy-relevant findings for sub-Saharan Africa from the Demographic and Health Surveys organized by the Institute for Resource Development (IRD)/Macro International. PRB gratefully acknowledges IRD and the collaborating local institutions (see page 5 for a list of these institutions in Africa) as the source of the data and further thanks the IRD staff for its review of chartbook.

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February 1992

Summary

Sub-Saharan Africa is the world's fastest growing region. At the current growth rate (about three percent per year), the population will double in just 23 years. Africa also has the highest infant mortality rate and lowest life expectancy of any major world region, despite improvements over the last several decades.

Increasingly, policymakers throughout Africa are recognizing that rapid population growth places a heavy burden on development efforts, particularly on the human resource sectors of health, education, and employment. They also realize that through family planning programs, fertility — and thus population growth — can be reduced. Equally important, many African policymakers include family planning as a crucial element of strategies to improve the health of mothers and children.

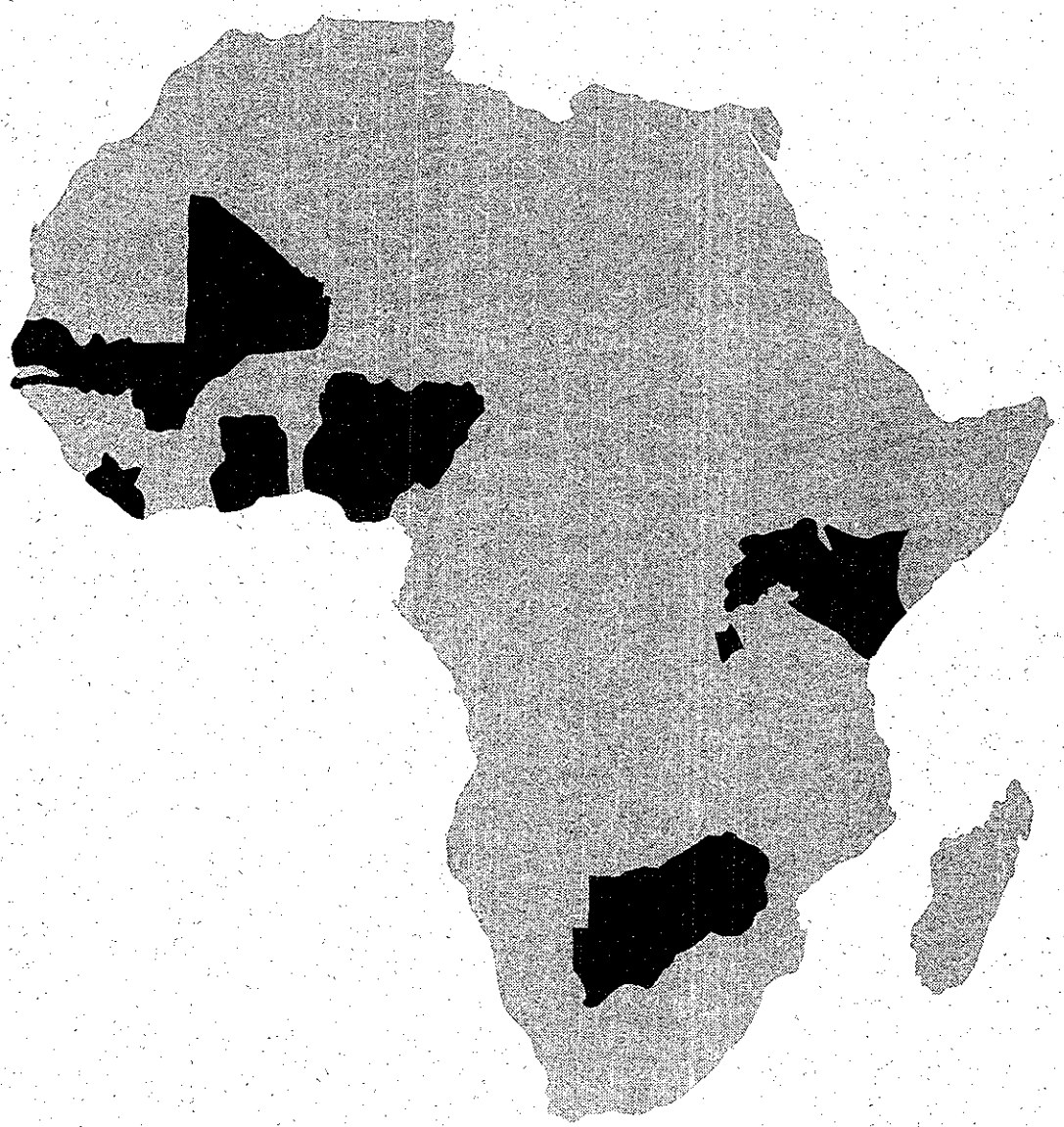
To plan effective family planning and maternal and child health programs, policymakers need up-to-date, detailed information. A recent series of national surveys — the Demographic and Health Surveys (DHS) — provide such data. This chartbook summarizes the major findings of the 11 African surveys completed between 1986 and 1990: Botswana, Burundi, Ghana, Kenya, Liberia, Mali, Nigeria, Senegal, Togo, Uganda, and Zimbabwe. In general, the surveys show that:

- **Fertility in Africa, though still very high, is beginning to decline in several countries.** This decline is associated with an increase in the percentage of women using family planning. In each country, fertility varies among women in different regions and with different levels of education.

- **Many married women either do not want any more children or want to delay future births.** However, most of these women are not currently using any method of family planning. They represent a pool of potential users for whom programs could be tailored.

- **Spacing births at least two years apart is an important means of improving child survival.** Both breastfeeding and use of contraceptives are ways to achieve healthy birthspacing.

- **Diarrhea, preventable childhood diseases, and undernutrition still threaten children in many countries.** Programs that provide oral rehydration therapy (ORT), immunizations, and nutrition education could help reduce the toll.



Collaborating Institutions in Africa

Botswana
Central Statistics Office,
Ministry of Finance and Development Planning
and
Family Health Division,
Ministry of Health

Burundi
Ministère de l'Intérieur,
Département de la Population

Ghana
Ghana Statistical Office

Kenya
National Council for Population and Development,
Ministry of Home Affairs and National Heritage

Liberia
Bureau of Statistics,
Ministry of Planning and Economic Affairs

Mali
Centre d'Etudes et de Recherches sur la Population pour le Développement (CERPOD),
Institut du Sahel

Nigeria
Federal Office of Statistics

Senegal
Ministère de l'Economie et des Finances,
Direction de la Statistique,
Division des Enquêtes et de la Démographie

Togo
Unité de Recherche Démographique,
Ministère de l'Education Nationale et de la Recherche
and
Direction de la Statistique,
Ministère du Plan et des Mines
and
Direction Générale de la Santé,
Ministère de la Santé Publique, des Affaires Sociales et de la Condition Féminine

Uganda
Ministry of Health

Zimbabwe
Central Statistical Office
Ministry of Finance, Economic Planning, and Development

Trends in Fertility

Chart 1 shows trends in the total fertility rates (TFRs)* of six African countries. These countries have had at least two fertility surveys, including a recent Demographic and Health Survey (DHS). Two points emerge. First, DHS data show that current fertility is still extremely high in Africa, at least six children per woman in four of the six countries shown on the chart.** Second, there appears to be a modest trend toward lower fertility. Although slight fertility shifts must be interpreted with caution, the data suggest that real fertility declines of between one and two children per woman have occurred in three sub-Saharan countries — Botswana, Kenya, and Zimbabwe.

Why has fertility declined in these countries? In addition to increased use of family planning (see Charts 3-5), socioeconomic factors like higher income, female education, and women's labor force participation can affect fertility. Among these, women's education has been found to be one of the most important. For example, Chart 2 shows that in Senegal higher levels of education for women are also linked to lower fertility.

Discussion

▶While sub-Saharan Africa has the highest fertility in the world, fertility declines have begun in several African countries.

Many African leaders now believe that reduced fertility is important for socioeconomic development. But many are also concerned that programs to reduce fertility will not work until the level of overall socioeconomic development in sub-Saharan Africa is raised. Successful family planning programs in Latin America were introduced at a time when improvements in health and education, as well as urbanization and exposure to new ideas through the media, were well advanced. However, the experience of many Asian countries shows that family planning can affect fertility in a variety of socioeconomic settings. In Bangladesh, for example, programs have helped fertility decline even though the overall level of development is low. Nonetheless, experts now feel that modest improvements in economic development *and* well organized family planning programs are mutually reinforcing, resulting in a faster decline in fertility than would have occurred through either factor alone. This is the case in the three African countries — Botswana, Kenya, and Zimbabwe — where fertility has declined the most.

▶Increased education for women is strongly associated with lower fertility.

The DHS data on fertility and education highlight the ways in which socioeconomic and demographic change work together. Increased schooling for girls, a goal in its own right, is associated with later age at marriage, preference for smaller families, higher contraceptive use, and lower fertility; it thus helps support countries' demographic goals. In turn, lowered fertility eventually reduces the burden of the ever-increasing number of students on educational systems, making it easier for governments to expand the reach and improve the quality of schooling.

* The total fertility rate (TFR) is an estimate of the number of children, on average, a woman would bear during her lifetime if current fertility rates prevail.

** TFRs for the DHS countries not shown in Chart 1 are given in the World Summary Chart on page 16.

Chart 1 Trends in Total Fertility Rates

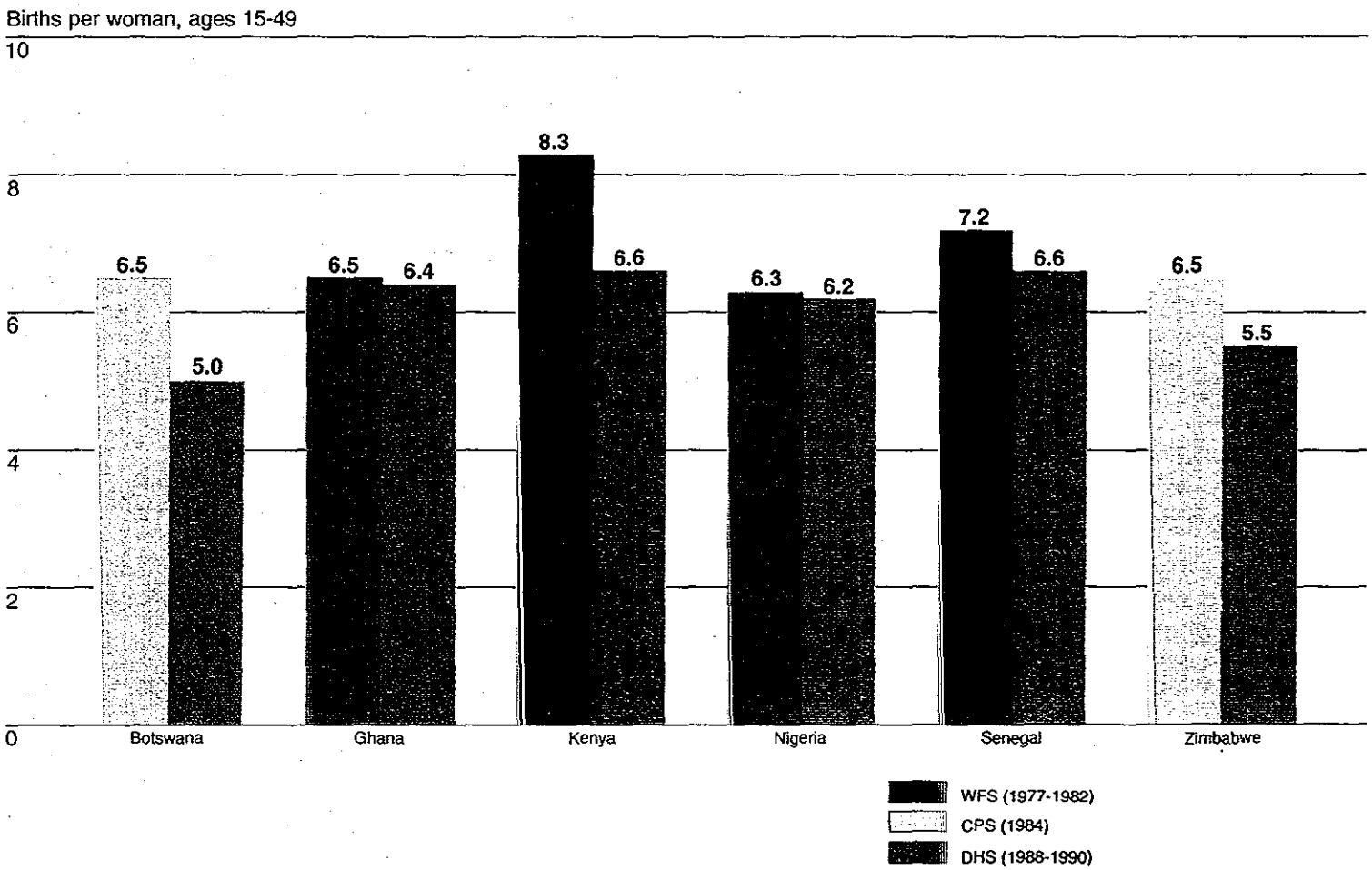
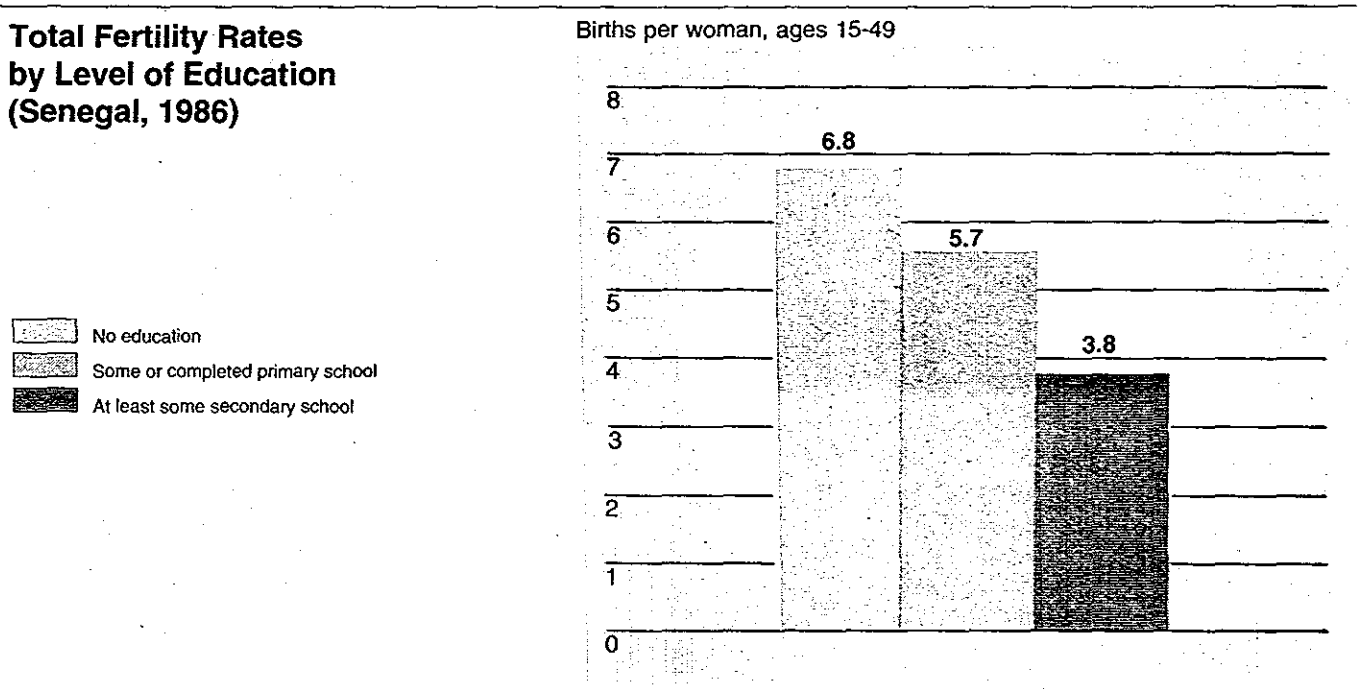


Chart 2 Total Fertility Rates by Level of Education (Senegal, 1986)



Contraceptive Use

Reductions in fertility are directly linked to the use of contraceptives. Chart 3 shows the percentage of married women who are currently using a contraceptive method in the 11 countries surveyed. Data on the current use of contraceptives, also known as the contraceptive prevalence rate (CPR), provide a "snapshot" of use at the time of the survey. In three countries, the CPR is more than 25 percent. Zimbabwe has the highest rate; over 40 percent of married women are currently using some method of family planning. This is comparable to the rate in several Latin American and Asian countries. However, in eight other countries, fewer than 15 percent of women are currently using contraception.

Chart 4 shows changes in contraceptive prevalence rates for those countries that also had earlier surveys. Kenya, which not so long ago had the world's highest population growth rate, has experienced a fourfold increase in contraceptive use in just ten years. In Botswana and Zimbabwe, CPRs have had modest increases from levels which, at the time of the earlier surveys, were already high for the region. Ghana has also seen a modest increase while contraceptive use in Nigeria and Senegal has hardly increased.

Discussion

▶ Contraceptive use is low in Africa.

Contraceptive use is lower in Africa than in any other region. Consequently, patterns of high fertility persist in most countries. Under current conditions of mortality and immigration, these fertility patterns mean that Africa's population will continue to grow well into the next century.

▶ In several sub-Saharan African countries, however, contraceptive use has increased.

These successes dispel the myth that family planning programs cannot work in Africa. Nonetheless, organizing and implementing family planning programs in other African countries remains a challenge. In addition, countries with relatively successful family planning programs still need to move beyond the current percentage of users to reach the vast majority of married women. This task is made more difficult because of the rapidly growing number of women to be served, and because those who are least likely to use family planning are often the hardest to reach — rural residents, the poor, and the uneducated.

Chart 3 Current Use of Family Planning

Percentage of married women, ages 15-49

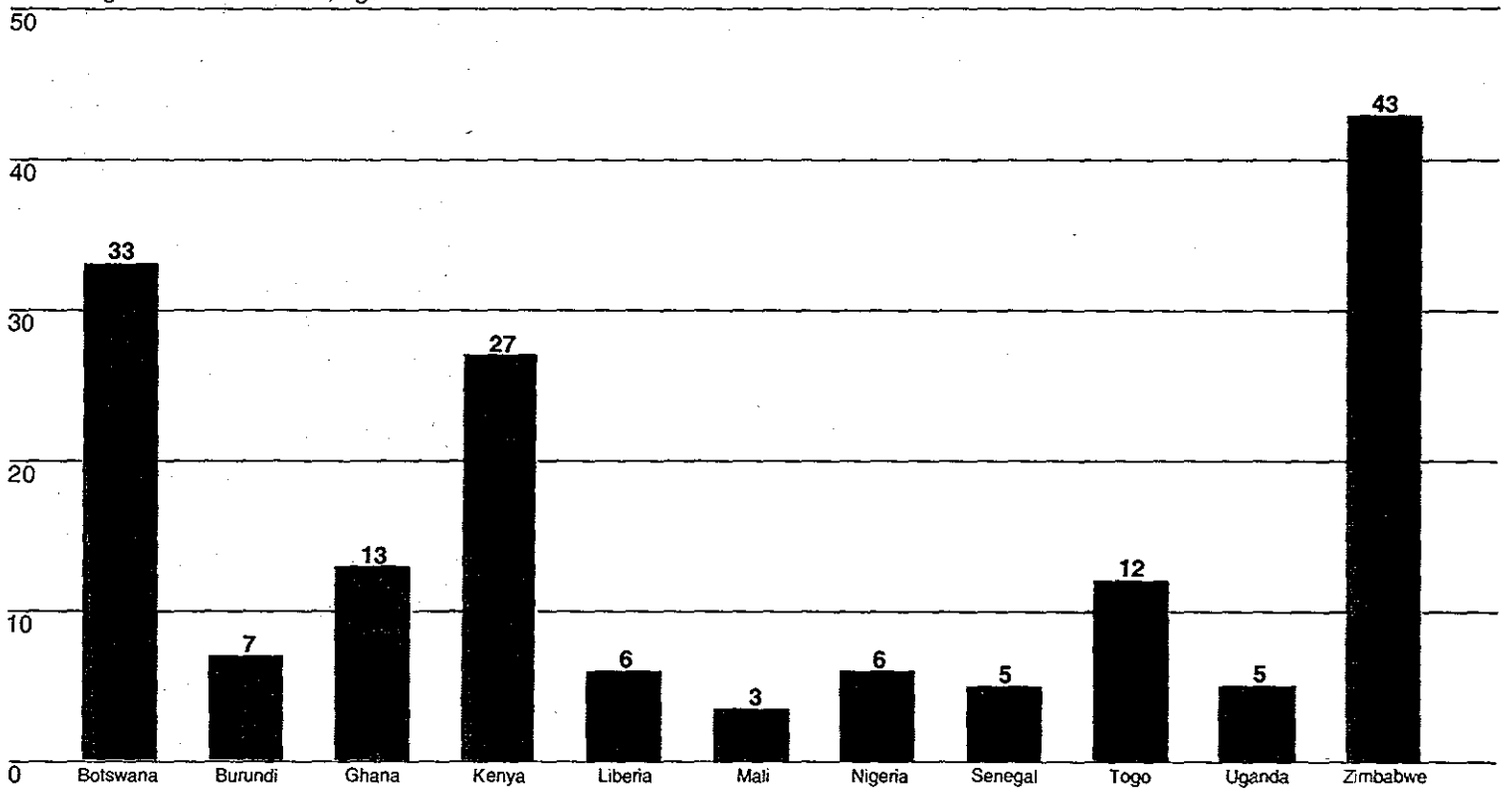


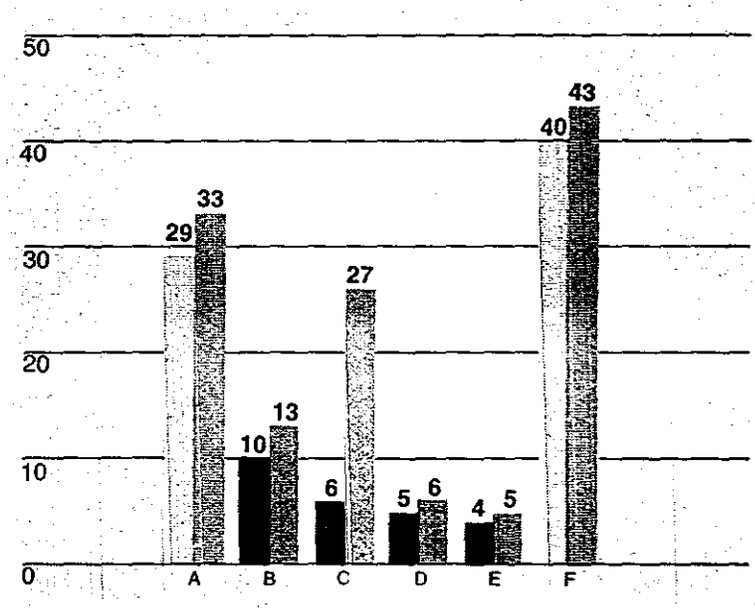
Chart 4 Change in Contraceptive Prevalence Rates*

A — Botswana
B — Ghana
C — Kenya
D — Nigeria
E — Senegal
F — Zimbabwe

WFS (1977-1982)
CPS (1984)
DHS (1988-1990)

* Includes modern and traditional methods except prolonged abstinence.

Percentage of married women, ages 15-49



Urban/Rural Differences in Contraceptive Use

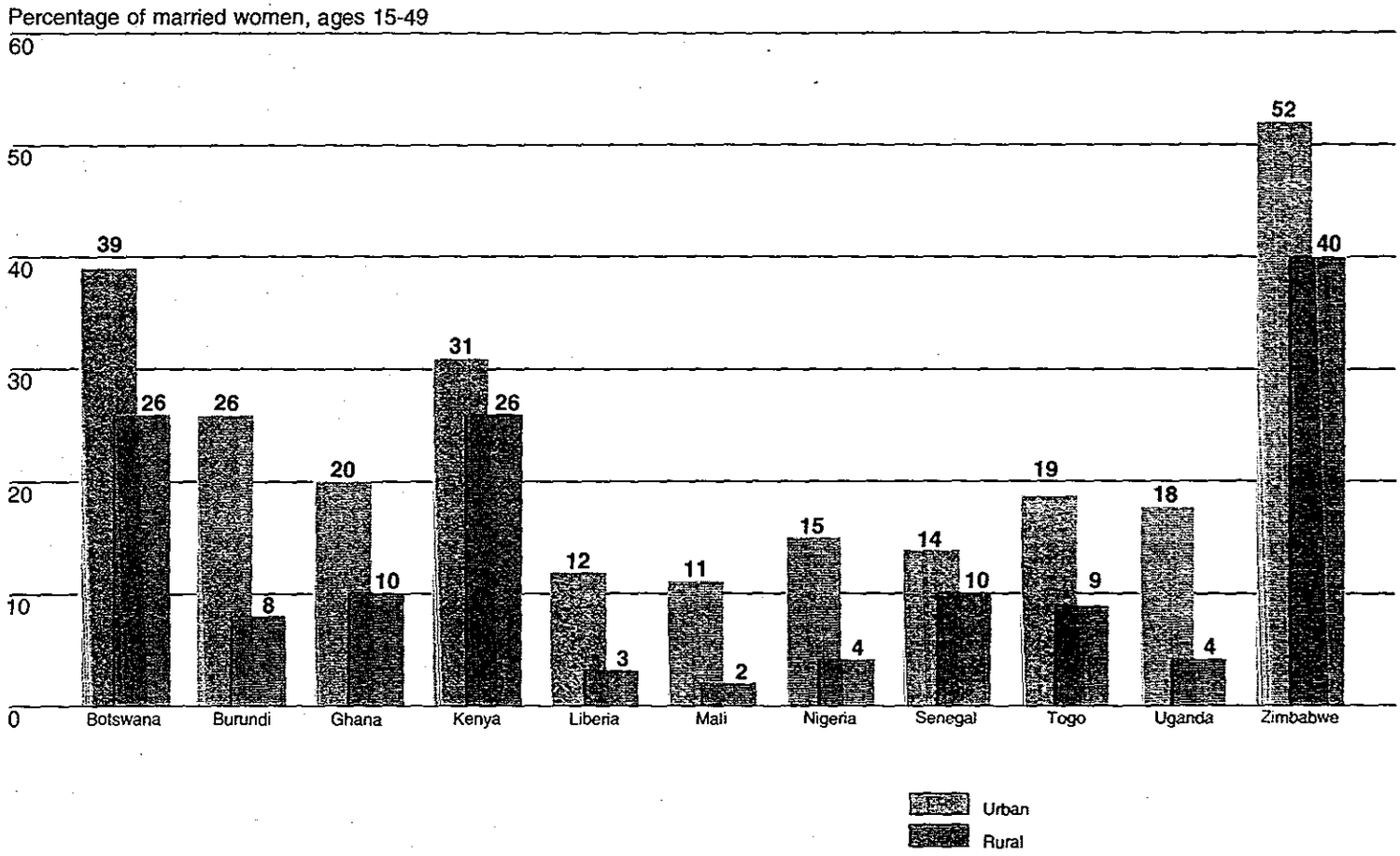
Throughout the developing world, contraceptive prevalence rates are higher in urban than in rural areas. Chart 5 shows that this is also true in Africa. Botswana, Kenya, and Zimbabwe are notable because, even despite their urban/rural differentials, rural contraceptive prevalence is as high or higher than the other countries' urban rates. These three countries have active family planning programs, thus their rural contraceptive-use rates are relatively high.

Discussion

▶Contraceptive use is lower in rural than in urban areas of sub-Saharan African countries.

There are many reasons for urban/rural differentials: family planning services may be less accessible in rural areas; agrarian households may want larger families; if there are fees for family planning services, rural families may be less able to afford them; and, with limited exposure to mass media and less formal education, rural parents may not be as informed about family planning options. In addition to urban/rural differences, disparities in contraceptive use may also exist among regions within countries because of cultural, religious, or socioeconomic differences or because family planning services may be less accessible. Policymakers can use DHS data to get an overview of their countries' family planning status and to begin to tailor programs more effectively.

Chart 5 Contraceptive Prevalence Rates in Urban and Rural Areas



Couples living in urban areas are more likely to practice family planning than those living in rural areas.

Swaziland: FAO/F. Botts

Desire for More Children

An understanding of women's preferences with regard to family size and birthspacing is important for those who design family planning programs. In the DHS, women were asked whether they wanted to have any more children and, if so, when they would like to have them. Chart 6 summarizes their responses. In all of the countries shown on the graph, at the time of the survey at least 47 percent of the married women said they either wanted no more children or wanted to delay the birth of their next children by at least two years. In five countries — Burundi, Ghana, Kenya, Togo, and Zimbabwe — more than two-thirds of the women fell into these categories. The fertility desires of these women suggest a large pool of potential users of modern contraception.

Chart 7 looks at how women's desires for, and preferred timing of, additional children change as their family size grows. The data are from Uganda, a country where contraceptive prevalence is very low, yet where many women say they would like to space or limit their births. Even women with only one child show a strong interest in delaying their next births. More than 40 percent of these women want to wait at least two years for their next children. Not surprisingly, as the number of their living children increases, the proportion of women who want no more children also grows, reaching 58 percent for women with six or more children.

Discussion

▶ Many African women want to space or limit their births.

The Demographic and Health Surveys show that there is considerable potential demand for family planning services. The data on the World Summary Table (page 16) show this is true not just in Africa but around the world, regardless of each country's cultural and religious background. Understanding women's fertility preferences can help policymakers estimate the need for various family planning services and thus plan better for the future.

▶ The desire to limit births is greater among women with more children.

Differences in fertility preferences have implications for the types of family planning services women may want. Younger women with few children may want to use temporary family planning methods to achieve healthy birthspacing. The needs of older women with many children may be better served by the long-acting or permanent methods of family planning.

Chart 6 Childbearing Preferences

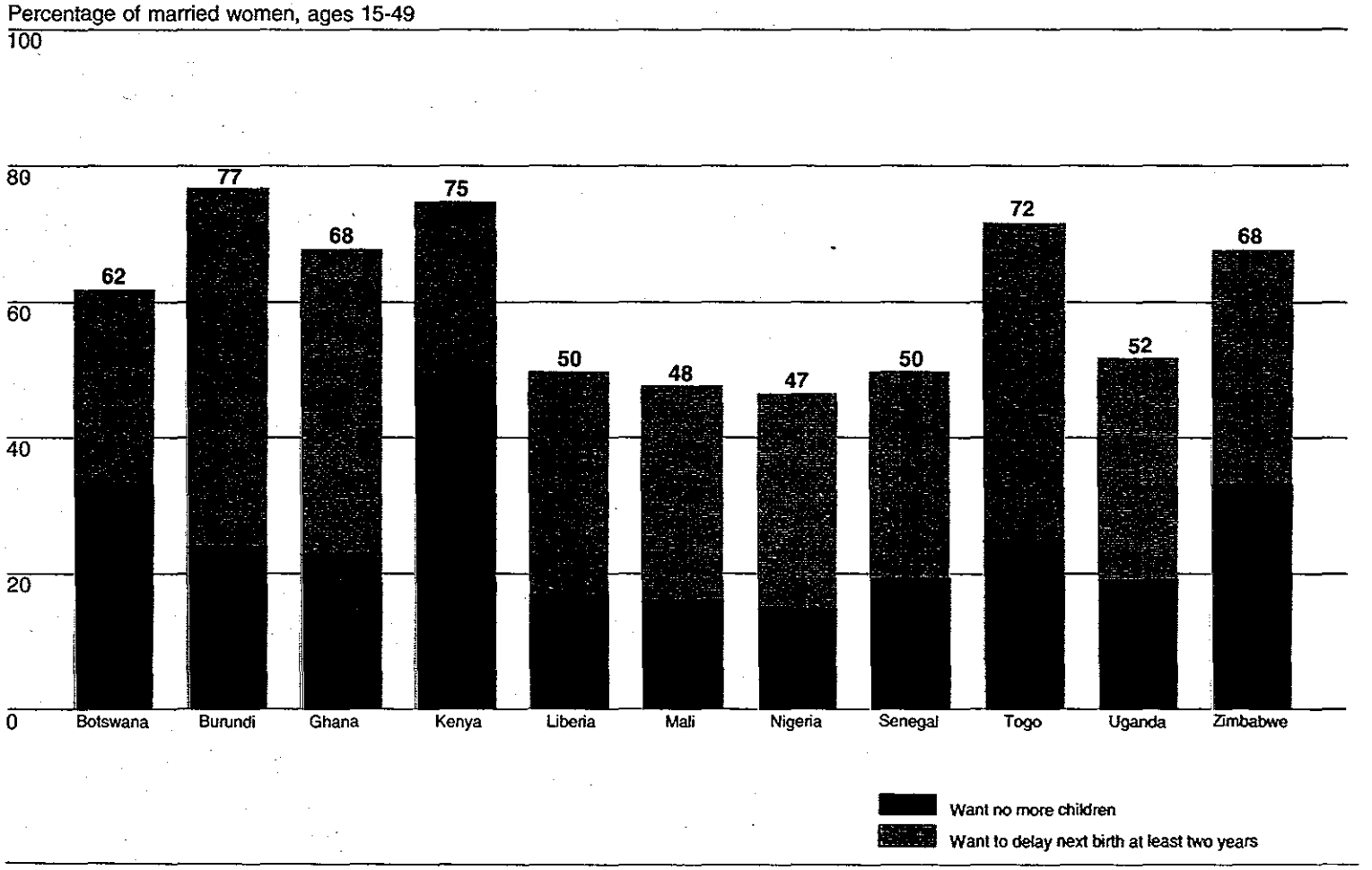
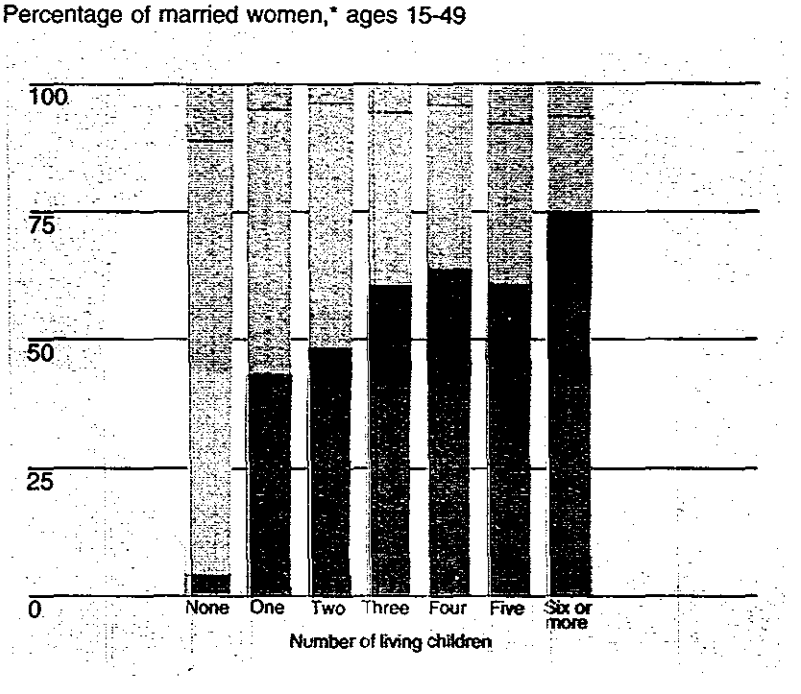


Chart 7 Desire for More Children by Number of Living Children (Uganda, 1988/89)



* Excludes infecund women.

Unmet Need for Family Planning

Comparison of Chart 6 with Chart 4 presents an apparent anomaly: many African women express the wish to limit the number of children they have or to lengthen the interval between the birth of one child and the next, yet contraceptive-use rates in Africa are very low. This leads many analysts to believe there may be an "unmet need" for family planning.* Chart 8 highlights this gap between preference and practice in sub-Saharan Africa. Between 20 and 40 percent of married women in each country do not practice family planning although they wish to delay or terminate childbearing. For example, 9 percent of married Ghanaian women say they do not want more children but are not using a contraceptive method; an additional 26 percent express an interest in birthspacing but also are not using a method — 35 percent in all.

In contrast to Latin America and Asia, where the unmet need for family planning is mainly among women who want to limit childbearing, more of the potential family planning users in Africa express a desire to delay their next birth. Throughout Africa there is traditional cultural support for birthspacing, which is widely — and correctly — believed to be healthy for the newborn. (Chart 12 highlights this in more detail.) Only Zimbabwean women show a higher proportion of unmet need for those who want to limit the number of children they have.

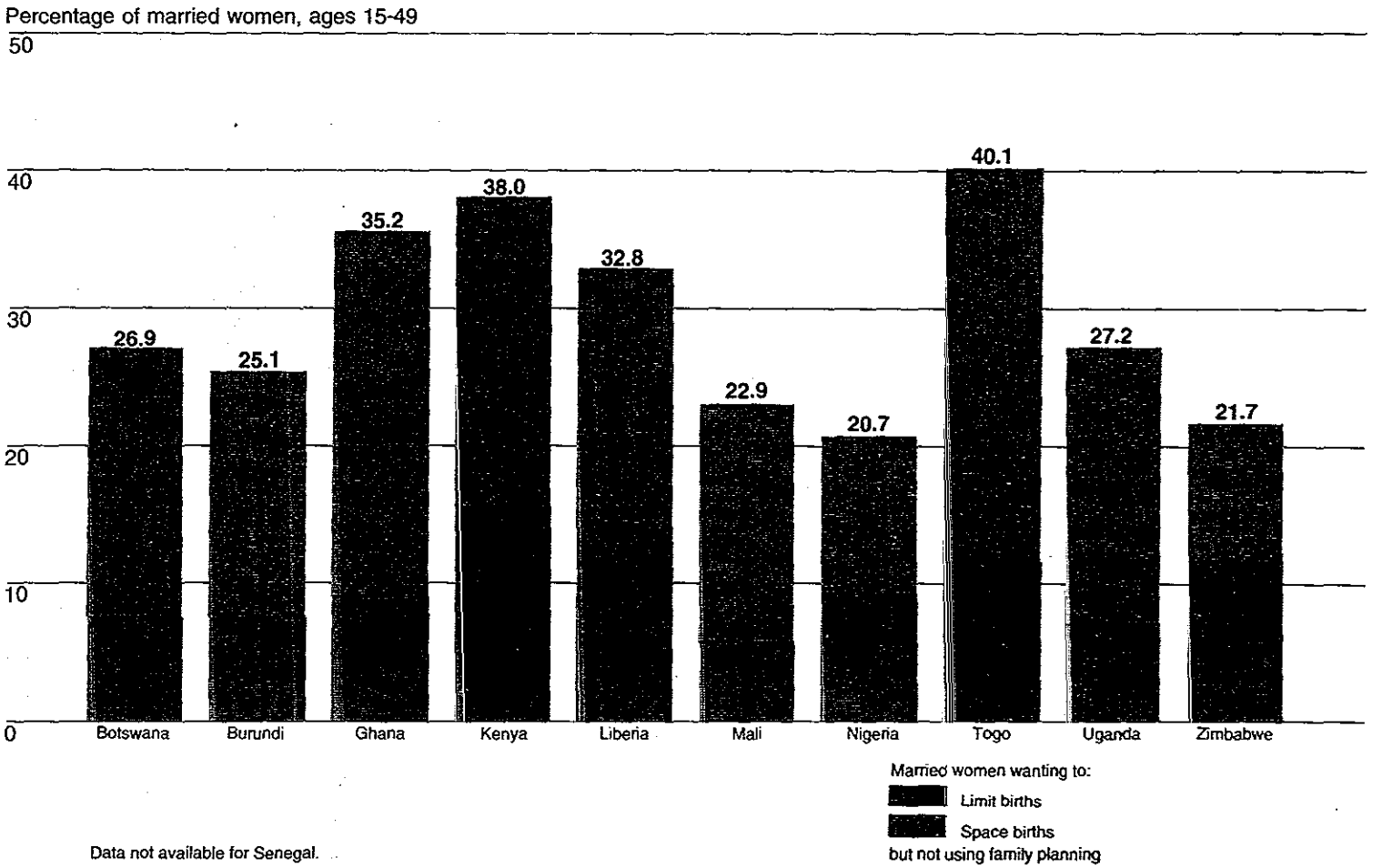
Discussion

▶There appears to be a significant level of unmet need for family planning in sub-Saharan Africa.

There is a gap between women's stated fertility preferences and their contraceptive-use patterns. There are many reasons why women who are interested in birthspacing or in having fewer children do not practice family planning. Many women lack access to high-quality family planning services and would take advantage of such services if they were available. In these cases, easily accessible, well advertised, high-quality family planning services may well reduce the number of unintended births. Others may be unaware of the range of methods available, be afraid of the side-effects of contraceptives, or fear their husbands' disapproval. These and other issues can be addressed through information campaigns, education, and better counseling.

* The term "unmet need for family planning" refers to married women who want to either space or limit their childbearing, but who are not practicing family planning.

Chart 8 Unmet Need for Family Planning



Data not available for Senegal.

Many women in sub-Saharan Africa who are not yet practicing family planning say they would like to either delay the birth of their next child or cease childbearing. These women form a pool of potential family planning users.

Kenya: World Bank

DHS World Summary Table

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				Fertility preference[b] (%)				Contraceptive prevalence rate[d]			Contraceptive			
								WFS/CPS[e]						
	Population estimate mid-1991 (millions)	Natural increase (annual %)	Total fertility rate[a]	Want no more children	Want child after 2 years	Want child within 2 years	Other[c]	Year	Rate	DHS	Female sterilization	Pill	IUD	Male methoc
Sub-Saharan Africa														
Botswana 1988	1.3	2.7	4.7	33	29	24	14	84	29	33	4.3	14.8	5.6	1.6
Burundi 1987	5.8	3.2	6.5	24	53	16	7	—	—	7	0.1	0.2	0.3	0.1
Ghana 1988	15.5	3.2	6.1	23	45	19	13	79-80	10	13	1.0	1.8	0.5	0.3
Kenya 1989	25.2	3.8	6.5	49	26	12	12	77-78	6	27	4.7	5.2	3.7	0.5
Liberia 1986	2.7	3.2	6.4	17	33	32	18	—	—	6	1.1	3.3	0.6	0.0
Mali 1987	8.3	3.0	6.9	16	32	33	18	—	—	3	0.1	0.9	0.1	0.0
Nigeria 1990	122.5	2.8	6.0	15	32	31	21	81-82	5	6	0.3	1.2	0.8	0.4
Senegal 1986	7.5	2.8	6.2	19	31	48	2	78	4	5	0.2	1.2	0.7	0.1
Togo 1988	3.8	3.7	6.1	25	47	19	9	—	—	12	0.6	0.4	0.8	0.4
Uganda 1988-89	18.7	3.5	7.2	19	33	39	9	—	—	5	0.8	1.1	0.2	0.0
Zimbabwe 1988-89	10.0	3.1	5.3	33	35	23	9	84	40	43	2.3	31.0	1.1	1.4
North Africa														
Egypt 1988-89	54.5	2.9	4.5	60	12	12	16	80	25	38	1.5	15.3	15.7	2.4
Morocco 1987	26.2	2.5	4.5	48	21	19	11	79-80	20	36	2.2	22.9	2.9	0.5
Sudan 1989-90[m]	25.9	2.9	4.6	26	32	33	9	78-79	5	9	0.8	3.9	0.7	0.1
Tunisia 1988	8.4	2.2	4.1	57	21	12	10	78	32	50	11.5	8.8	17.0	1.3
Asia														
Indonesia 1987	181.4	1.7	3.0	51	27	10	12	76	28	48	3.1	16.1	13.2	1.8
Sri Lanka 1987	17.4	1.5	2.7	65	18	12	4	75	34	62	24.9	4.1	2.1	6.8
Thailand 1987	58.8	1.3	2.2	66	17	11	6	75	36	66	22.8	18.6	6.9	6.8
Latin America and the Caribbean														
Bolivia 1989	7.5	2.6	4.9	72	9	10	9	83	26	30	4.4	1.9	4.8	0.
Brazil 1986	153.3	1.9	3.4	65	16	14	4	—	—	66	26.9	25.2	1.0	2.
Colombia 1986	33.6	2.0	3.2	70	15	13	2	76	45	65	18.3	16.4	11.0	2.
Dominican Republic 1986	7.3	2.3	3.6	63	16	18	3	75	33	50	32.9	8.8	3.0	1.
Ecuador 1987	10.8	2.4	4.1	63	19	11	7	79	35	44	15.0	8.5	9.8	0.
El Salvador 1985	5.4	2.8	4.4	63	21	10	6	78	34	47	31.8	6.6	3.3	1.
Guatemala 1987	9.5	3.0	5.5	47	27	12	14	78	18	23	10.4	3.9	1.8	2.
Mexico 1987	85.7	2.3	4.0	62	13	4	20	76-77	32	53	18.6	9.7	10.2	2
Paraguay 1990	4.4	2.8	4.6	36	26	20	18	77	31	48	7.4	13.6	5.7	2
Peru 1988	22.0	2.3	4.0	70	13	9	8	77-78	33	46	6.1	6.5	7.4	0
Trinidad and Tobago 1987	1.3	1.6	3.1	55	20	16	8	77	55	53	8.2	14.0	4.4	12

Note: For sources, see page 32.
— Indicates data is unavailable.
a. For women age 15-44 for the period 0-2 years prior to the survey (except Sudan and Nigeria, 0-4 years before the survey).
b. Percent distribution of currently married women by reproductive intention.
c. Includes non-respondants and women who are undecided about the number or timing of more children or who consider themselves infecund.
d. Percent of currently married women 15-49 (except Brazil and Guatemala, 15-44) currently using any method of contraception.
e. World Fertility Survey/Contraceptive Prevalence Survey.
f. Percent distribution of currently married women by contraceptive method currently used.
g. Includes condoms and male sterilization.
h. Includes implants, spermicides, and barrier methods.

5)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	
				Mean duration (in months)			Infant mortality rate				Childhood diarrhea[i]				
mix[f] (%)								By birthspacing interval					Immunization[k]		
ection	Other modern[h]	Traditional	Not using	Breast-feeding	Amen-orrhea	Absti-nence	National rate	Less than 2 years	2 to 3 years	4 years or more	Had diarrhea in 2 weeks before survey (%)	Given ORT or home solution[j] (%)	Measles	DPT[l]	
															Sub-Saharan Africa
.4	0.0	1.3	67.0	19	12	13	37	68	35	32	10	67	87	88	Botswana
.5	0.0	5.5	93.3	23	19	3	75	129	70	30	18	33	59	55	Burundi
.3	1.3	7.7	87.1	20	14	14	77	115	68	52	26	36	51	42	Ghana
.3	0.4	9.0	73.2	19	11	6	60	76	48	36	13	62	72	82	Kenya
.3	0.2	0.9	93.6	17	11	13	144	203	124	72	39[n]	10	47	20	Liberia
.1	0.1	1.4	97.3	22	15	7	108	202	81	45	34	3	27	8	Mali
.7	0.1	2.5	94.0	20	16	14	87	118	69	39	18	27	46	33	Nigeria
.1	0.1	3.0	94.6	19	16	8	86	115	72	58	38	6	39	14	Senegal
.2	0.6	8.9	88.1	23	14	18	81	121	71	57	29	22	—	—	Togo
.4	0.0	2.4	95.1	19	13	4	101	142	84	68	25	15	49	38	Uganda
.3	0.0	7.0	56.9	19[o]	13[o]	4[o]	53	79	48	43	20	70	88	86	Zimbabwe
															North Africa
.1	0.4	2.4	62.2	17	8	3	73	153	58	39	16[p]	29	76	66	Egypt
.3	0.1	6.9	64.2	14	9	—	73	117	58	34	29	16	58	63	Morocco
.1	0.0	3.1	91.3	—	—	—	70	—	—	—	30	36	—	—	Sudan
.8	1.0	9.4	50.2	16	7	2	50	84	32	28	21	20	84	88	Tunisia
															Asia
.4	0.4	3.7	52.3	25	11	5	70	109	62	51	—	—	—	—	Indonesia
7	0.0	21.2	38.2	23	8	7	25	43	25	30	6	35	67	91	Sri Lanka
5	0.0	2.0	34.4	17	7	4	36	58	38	32	16	40	45	66	Thailand
															Latin America and the Caribbean
7	0.1	18.0	69.8	16	11	6	88	154	77	43	28	32	58	28	Bolivia
6	0.5	9.3	34.0	9[o]	4[o]	3[o]	75	136	59	52	17	11	79	70	Brazil
4	2.3	12.3	35.2	11	5	6	27	51	39	23	19	40	64	72	Colombia
1	0.6	2.9	50.2	9	5	4	67	82	54	45	25	42	—	—	Dominican Republic
7	1.5	8.1	55.8	15	8	3	58	89	52	44	39	—	—	—	Ecuador
7	0.2	2.7	52.8	16	10	5	71	—	—	—	36	26	—	—	El Salvador
5	0.5	4.0	76.8	21	13	7	73	120	52	51	17	16	55	36	Guatemala
3	0.6	8.1	47.3	11	6	4	47	81	45	43	23	4	59	34	Mexico
2	0.8	13.2	51.5	11	7	5	34	40	33	18	9	51	57	52	Paraguay
1	1.0	22.8	54.2	16	9	6	76	121	63	38	31	4	72	58	Peru
1	5.0	8.2	47.4	10	4	3	26	41	15	26	6	59	33	74	Trinidad and Tobago

Among children under five years of age.
Data for Egypt, Mexico and Peru do not include home solution, while data for Zimbabwe only include home solution.
Percentage of children 12-23 months immunized based on health card information and maternal recall.
Diphtheria, pertussis, and tetanus.
Survey conducted only in northern Sudan.
In four weeks before survey.
Median duration.
In week before survey.

Contraceptive Methods Used

*W*hich family planning methods are the most frequently used? Chart 9 shows contraceptive use in those African countries where more than 15 percent of women (or their husbands) are currently using some method. Tunisia, a North African country with a relatively high contraceptive prevalence rate, is included for comparison.

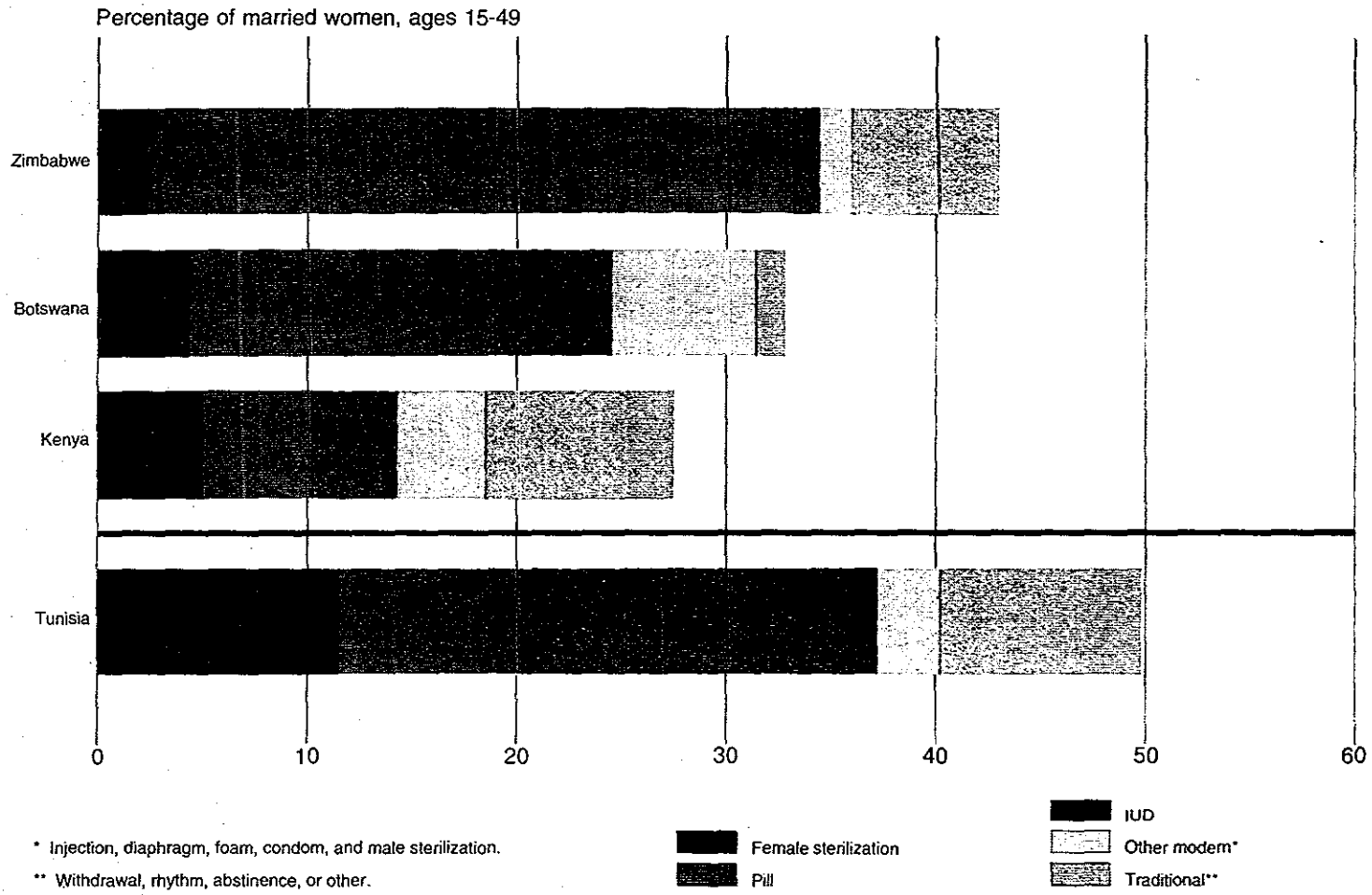
The chart shows that a large percentage of contraceptive users in these countries have chosen from the range of effective modern methods, although the proportion varies from country to country. In Botswana and Kenya, women use several methods in a fairly balanced mix, whereas in Zimbabwe, most women rely on a single method — the pill. Data for Tunisia illustrate a balanced mix of methods in a country where about 50 percent of women practice family planning.

Discussion

▶ **In the sub-Saharan African countries where a relatively large proportion of women practice family planning, most of these women use effective modern methods.**

In Zimbabwe, Botswana, and Kenya, family planning programs reach out to inform and serve a large number of women. In addition, in these countries, most users choose effective modern methods. Because women's needs vary, successful programs offer a wide range of methods and provide the information needed to teach clients to use those methods correctly. The more selection there is, the more likely it is that clients will find a method that suits their particular needs. An array of temporary methods is particularly appropriate for Africa to help women address the strong interest in birthspacing identified earlier.

Chart 9 Contraceptive Methods Used



* Injection, diaphragm, foam, condom, and male sterilization.

** Withdrawal, rhythm, abstinence, or other.

The most successful family planning programs provide a wide range of modern and traditional methods.

Somalia: UNICEF

Sources of Family Planning Methods

Chart 10 shows that the public sector far outstrips the private sector in the provision of family planning methods in the African countries with the highest prevalence rates: Botswana, Kenya, and Zimbabwe. In these three countries, between 73 and 92 percent of methods are provided through the public sector, which includes government hospitals, clinics, mobile health stations, and community-based workers. Up to now, private sector channels, including private physicians, clinics and hospitals, non-governmental organizations (NGOs), and pharmacies, have played a more limited role in these and most other African countries.

Discussion

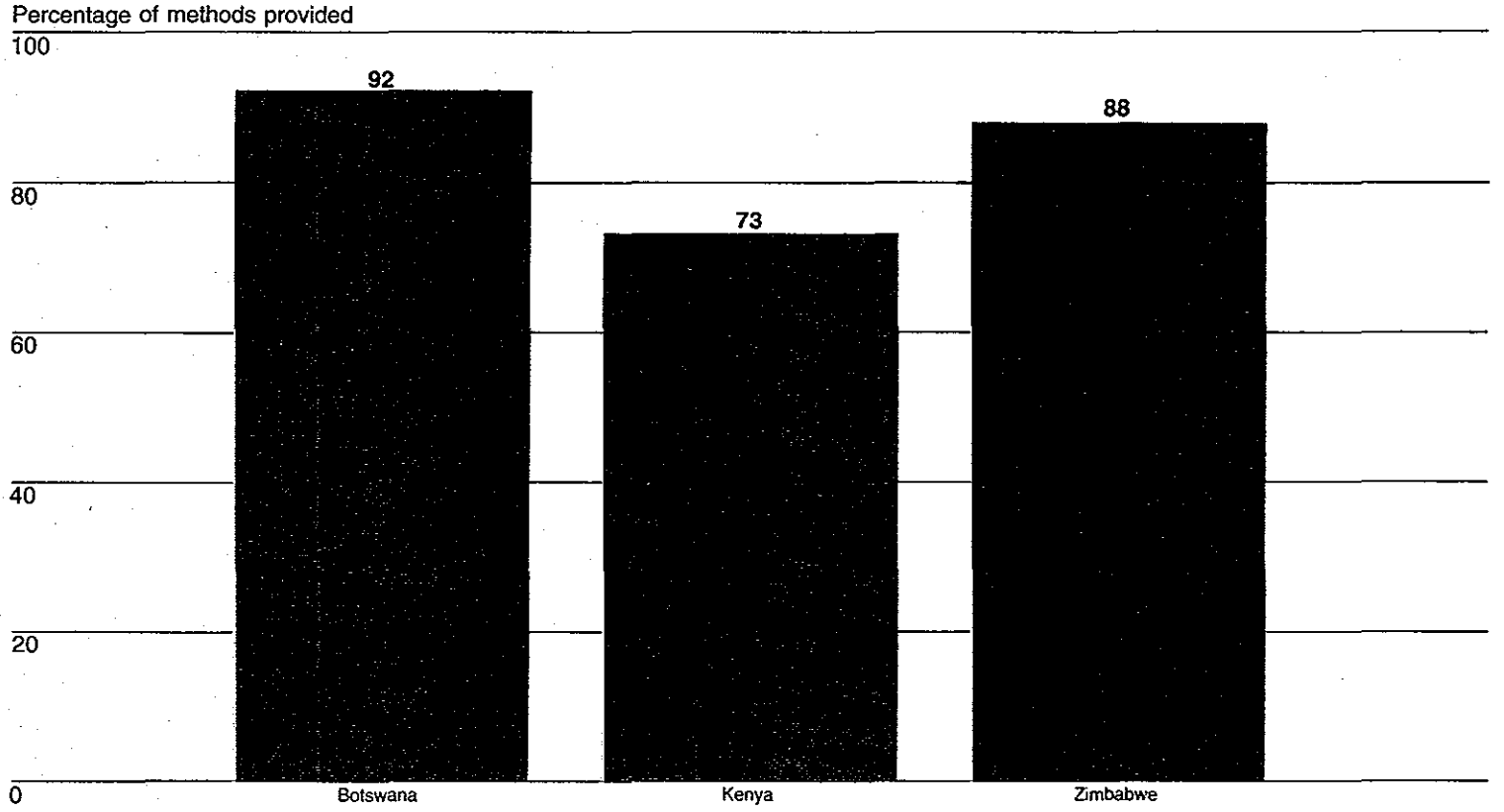
▶The public sector is the predominant provider of family planning methods in sub-Saharan Africa.

With public-sector resources limited and the demand for family planning services likely to expand, governments may want to encourage private-sector alternatives. In a number of Latin American and Asian countries, the private sector has contributed significantly to the expansion of family planning services. Users of the private sector may be able to pay for a higher proportion of their family planning services. Programs can be structured so that free or low-cost government services will be reserved for those who cannot pay, while those who can afford it will be served through private or commercial channels.

Governments can encourage the expansion of private-sector alternatives in a number of ways, including:

- identifying family planning as a national priority;
- organizing services so that the public sector and the private sector complement rather than compete with each other; and
- relaxing regulations that restrict the private sector's ability to import, advertise, and dispense contraceptives.

Chart 10 Percentage of Family Planning Methods Obtained through the Public Sector



In sub-Saharan Africa, most family planning services are provided by the government; in other regions of the developing world, the private sector also plays a major role in service delivery.

Kenya: World Bank/Kay Chernush

Birthspacing and Infant Mortality

Generally, people think of family planning as a means for couples to have the number of children they want and can support. But there is another important role: by helping to space births, family planning can reduce infant and child mortality. Chart 11 illustrates this connection. DHS data show that babies born at least two years after their mothers' last births are much less likely to die during the first year of life than babies born after shorter intervals.

The reduction in infant mortality rates (IMR)* is striking for babies born more than two years after the preceding birth. In Mali, a child born less than two years after a sibling is 2.5 times more likely to die than one born after a two- to three-year interval. Even in Kenya, the country with the smallest differential, a child born after less than a two-year interval is 1.6 times more likely to die. Although not always so dramatic, this relationship holds in developing countries around the world. Babies born after longer intervals — four or more years — have even lower infant mortality rates, although in most countries the reduction in IMR is only slightly greater than for intervals of two to three years.

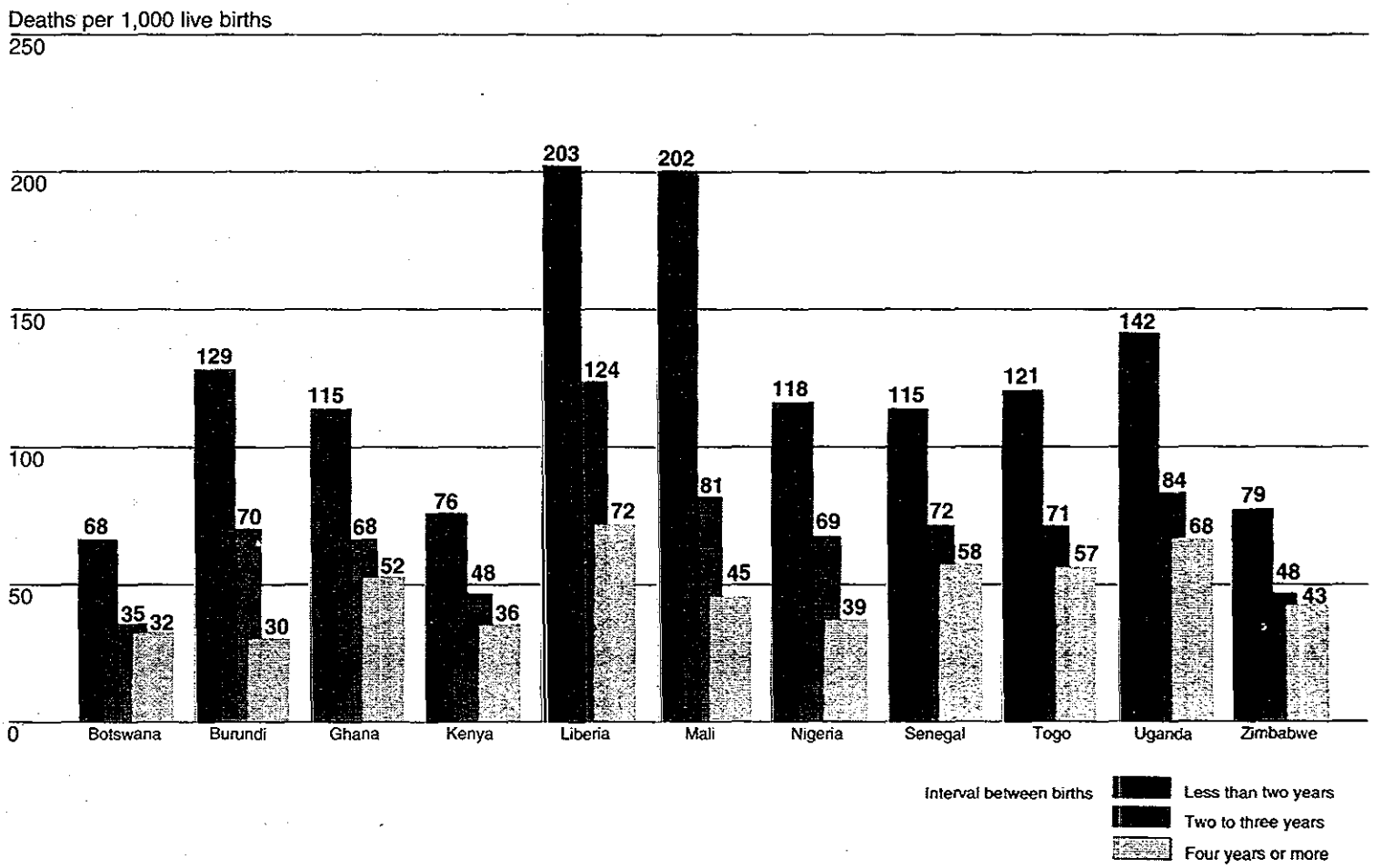
Discussion

▶Spacing births at least two years apart significantly reduces infant mortality.

Although scientists do not fully understand why birthspacing reduces infant mortality, its health benefits are universally recognized. Healthy birthspacing can be achieved using a variety of modern and traditional family planning methods. Traditional practices such as breastfeeding and abstinence can be effective ways of spacing births (see Chart 12). These traditional practices are already widely practiced and culturally sanctioned in Africa. However, such practices have declined in other parts of the developing world as modernization has brought about changes like urbanization and increased employment of women. Reductions in these traditional practices are also under way in Africa and could lead to increased fertility and lower child survival unless effective modern contraceptive methods are substituted. Widespread education about the improved child survival benefits of birthspacing could mobilize popular support for the expansion of family planning programs. Individual couples are much more likely to practice family planning if they understand its health benefits.

* The infant mortality rate is the number of deaths among infants less than one year of age per 1,000 live births during one year.

Chart 11 Infant Mortality Rates by Different Birth Intervals



Spacing births at least two years apart is an important way mothers can help to prevent infant deaths.

Somalia: Mario Ascari

Breastfeeding, Amenorrhea, and Abstinence

Chart 12 shows the average duration of breastfeeding, amenorrhea, and abstinence after birth in 11 African countries. These data are important because both breastfeeding and postpartum abstinence play a role in helping women to space their births.

For the countries surveyed in Africa, the average duration of breastfeeding ranges from about a year-and-a-half to just under two years. A woman who is fully breastfeeding her newborn, i.e., not giving supplemental feedings, will be protected from a new pregnancy for some time because breastfeeding temporarily interrupts ovulation — a necessary component of her biological ability to conceive a child. The length of this infecund period, called postpartum amenorrhea, depends on the woman's general health and other individual factors. Chart 12 shows that the average period of postpartum amenorrhea, ranging from 11 to 19 months, is somewhat shorter than that for breastfeeding.

Abstinence is another way of avoiding pregnancy. In Africa, many women abstain from sexual relations for several months after they give birth. In some instances, women return to their maternal homes to deliver their babies and reside there for several months. In other instances, there are taboos against nursing mothers engaging in sexual relations. Whatever the cultural origins of abstinence, it clearly means there will be no new pregnancy for the time it is practiced. Average intervals vary widely, from a low of three months in Burundi to a high of 18 months in Togo.

Discussion

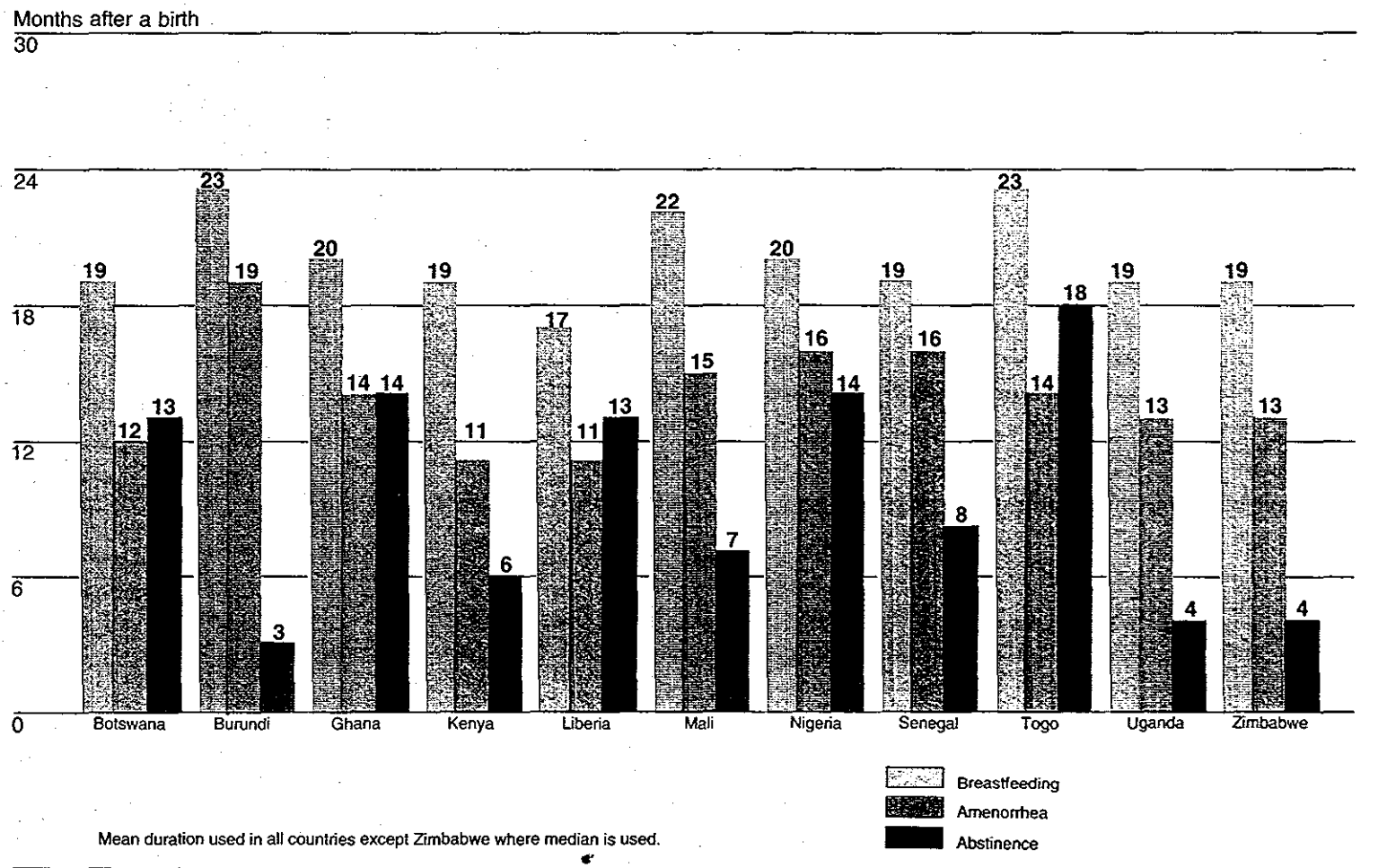
▶ Breastfeeding, amenorrhea, and abstinence contribute to effective birthspacing and improved child survival in Africa.

It is important to recognize the important role played by traditional practices. They provide the best form of birthspacing in a population where contraceptive prevalence rates are low. In countries where such practices are in decline, policymakers may want to expand family planning programs in order to maintain healthy birthspacing patterns.

▶ In Africa, most women currently practice breastfeeding for an extended interval.

Breastfeeding is doubly important because it not only offers a new mother temporary protection against pregnancy but also increases her infant's chances of survival. Breast milk, the ideal source of nutrition during the first six months of life, contains antibodies that help protect the child from disease. Breastfeeding is a traditional, healthy practice that deserves to be supported even as modernization occurs.

Chart 12 Average Duration of Breastfeeding, Amenorrhea, and Abstinence



Mean duration used in all countries except Zimbabwe where median is used.

Breastfeeding plays an important role in infant survival.

Somalia: M.A. Abeyta-Behnke

Nutritional Status of Children

Child survival depends on many other factors in addition to birthspacing. One of these is nutritional status, which is highlighted on Chart 13.* To assess nutritional status, young children were weighed and measured. Indices such as height-for-age were then constructed and the results were compared to an international reference population recommended by the World Health Organization. Using this system, a very low score on the height-for-age index is associated with chronic undernutrition.**

In the eight countries shown in Chart 13, undernutrition is a serious problem. Children up to three years of age were monitored; between 23 and 48 percent have low height for their age, an indication of chronic deficiency in vitamins, minerals, proteins, and calories over an extended period of time.

There are also differences in children's nutritional status by rural/urban residence and by mothers' education. For example, Chart 14 shows that in Nigeria, children living in urban areas and those whose mothers have more education are less likely to suffer from undernutrition.

Discussion

▶ Undernutrition remains a serious problem for children in Africa, particularly in rural areas.

The DHS data on children's nutritional status can help policymakers understand the extent of nutritional problems in their countries. Low height-for-age is an indicator of long-run, food-consumption problems, not necessarily an indicator of ill health at the time the child is measured. The information can be used as a base to begin identifying and targeting at-risk populations for appropriate action programs.

* Not all surveys gathered this type of nutritional data.

** Of course, the height of children will vary in any population. Children are considered to have low height-for-age only if they fall significantly below the average heights of the reference population (two or more standard deviations).

Chart 13 Undernutrition among Children

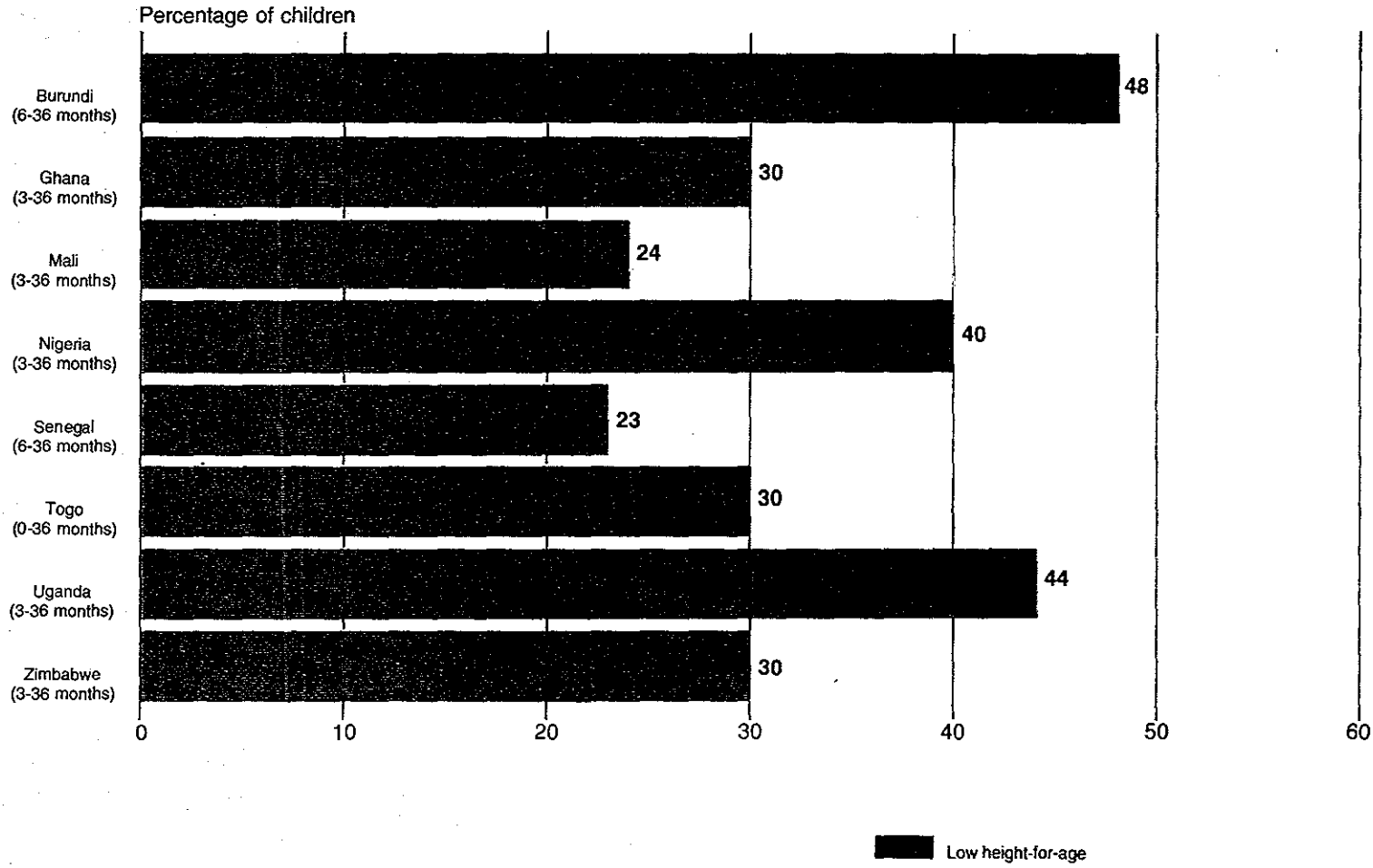
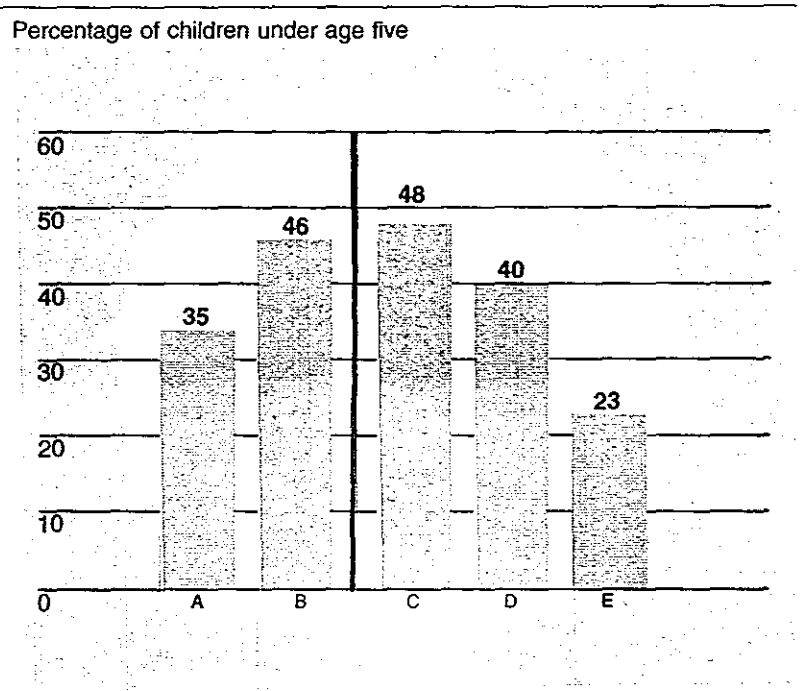


Chart 14 Undernutrition among Young Children by Residence and Mother's Education (Nigeria, 1990)



Diarrhea: Incidence and Treatment

Charts 15 and 16 highlight two other important aspects of child survival: diarrhea (its incidence and treatment) and immunization against several common childhood diseases.

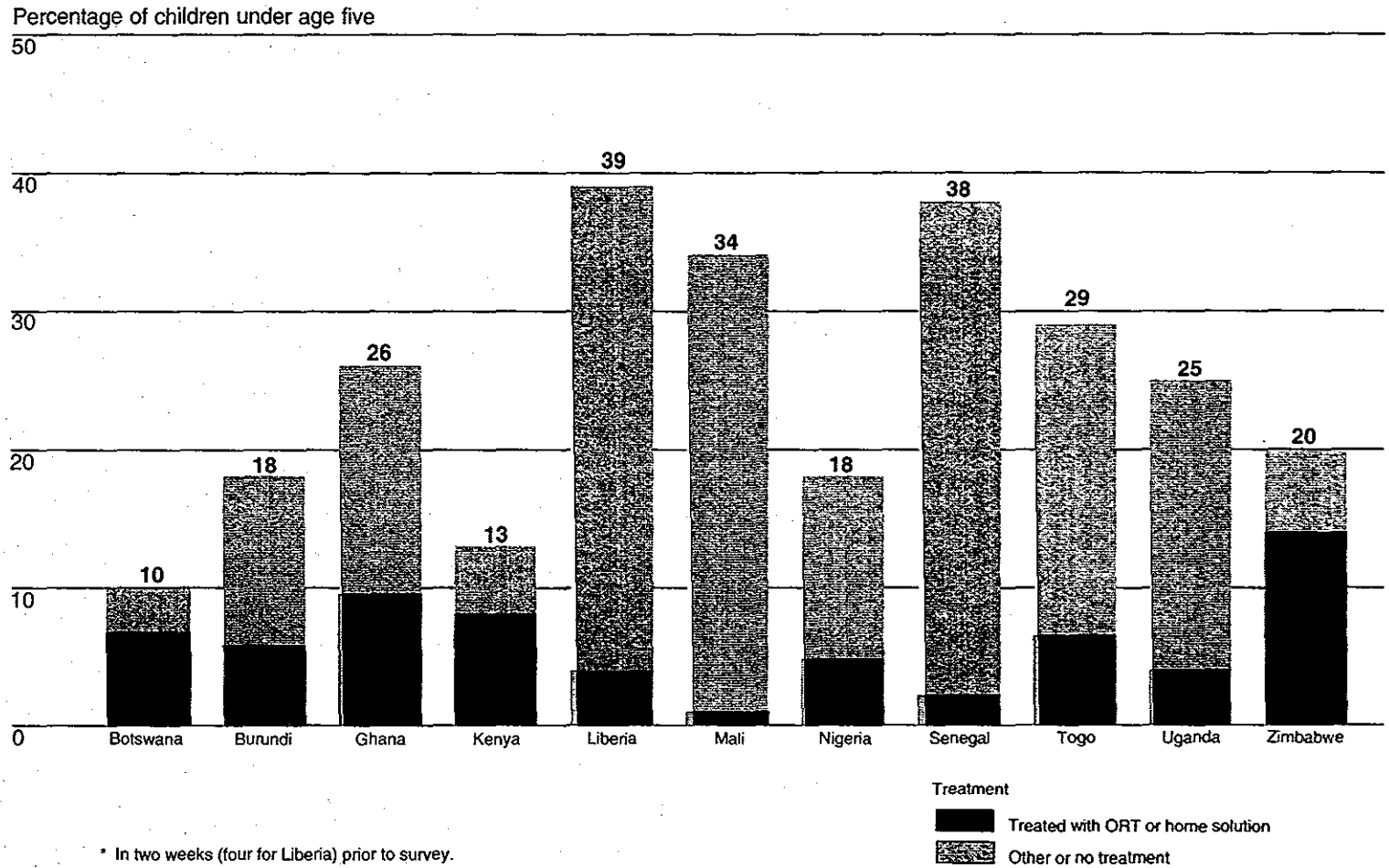
Chart 15 shows the percentage of children under age five who had an episode of diarrhea in the two weeks prior to the survey, according to whether or not they received oral rehydration therapy (ORT) — an inexpensive salt-sugar-water solution given to children with diarrhea. In the African countries surveyed, a relatively high percentage of children experienced an episode of diarrhea in the two weeks prior to each survey, ranging from 10 percent in Botswana to almost 40 percent in Senegal and Liberia. However, in 10 out of the 11 countries, fewer than 10 percent of the children received ORT. Liberia, Mali, and Senegal — the countries with the highest incidence of diarrhea — also had the lowest use of ORT.

Discussion

▶ **Diarrhea remains a major health problem for children in sub-Saharan Africa. Furthermore, ORT, though simple and inexpensive, is not often used.**

Diarrhea is often related to contaminated water supplies and food prepared under unsanitary conditions. In the developing world, it remains one of the main causes of infant and child mortality. Countries around the world are organizing educational campaigns to teach parents about better hygiene and the benefits of ORT, which is considered to be the single-most important treatment because it prevents the severe dehydration that can accompany diarrhea.

Chart 15 Incidence* and Treatment of Diarrhea in Children



* In two weeks (four for Liberia) prior to survey.

In sub-Saharan Africa, diarrhea is one of the main causes of infant and child deaths; treatment with oral rehydration therapy (ORT) could prevent many of those deaths.

Botswana: WFP/F. Mattioli

Immunizations

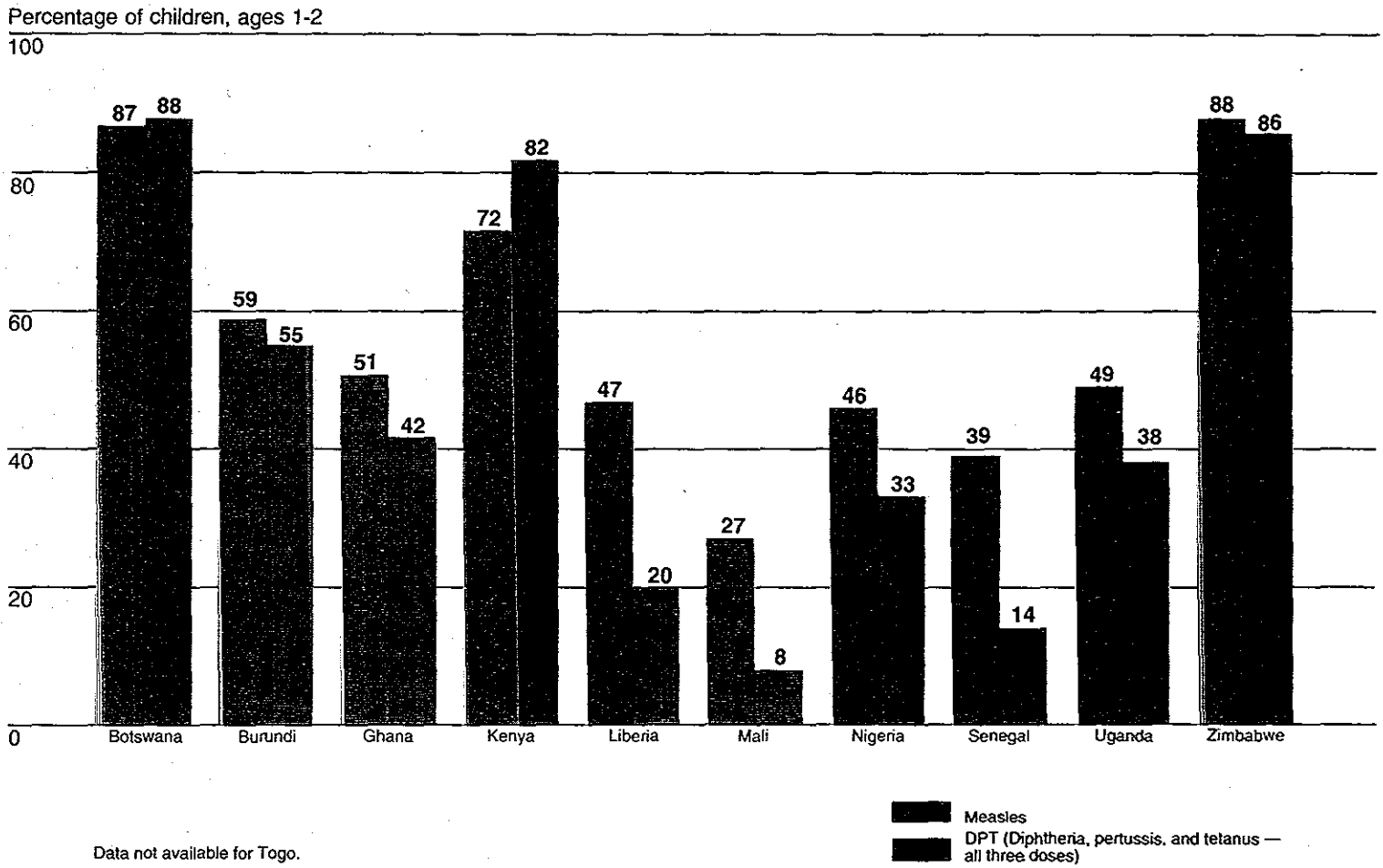
Chart 16 shows immunization coverage for children between one and two years of age. In seven of the ten countries shown, less than 60 percent of children have been immunized against measles and an even lower percentage have received the full series of three doses required for protection against diphtheria, pertussis, and tetanus (DPT). Many children received the first dose of this series but not the follow-up doses and thus are still susceptible to these dangerous but preventable diseases.

Discussion

▶Many children in Africa are still not protected against measles, diphtheria, pertussis, and tetanus, diseases easily prevented by immunizations.

Immunization programs are cost-effective interventions which significantly improve child survival. DHS data can help leaders measure progress in their immunization campaigns and, where necessary, target educational campaigns and services to population subgroups at higher risk.

Chart 16 Children Immunized against Measles and DPT



Data not available for Togo.

Immunizations are available to prevent several common childhood diseases. Unfortunately, many children in sub-Saharan Africa are not yet fully protected.

Somalia: Mario Ascari

Sources

Charts

All data are from the individual DHS country reports unless specifically cited below.

Chart 1: Population Reports, *Fertility and Family Planning Survey: An Update* (Population Information Program, Johns Hopkins University, Series M, No.8) Table 12; International Statistical Institute, *Fertility in the Developing World* (Voorburg, Netherlands: International Statistical Institute, 1984) Chart 3; Fred Arnold and Ann K. Blanc, "Fertility Levels and Trends," *Demographic and Health Surveys Comparative Studies No. 2* (Columbia, Maryland: Institute for Resource Development, 1990) Table 2.1.

Chart 3: *DHS Newsletter*, Vol. 3, No. 1, data table.

Chart 4: "Fertility and Family Planning Survey: An Update," *Population Reports*, Series M, No.8, Table 4; International Statistical Institute, *Fertility in the Developing World* (Voorburg, Netherlands: International Statistical Institute, 1984) Chart 11; *DHS Newsletter*, Vol. 3, No. 1, data table.

Chart 6: Charles F. Westoff, "Reproductive Preferences: A comparative View," *Demographic and Health Surveys Comparative Studies No. 3* (Columbia, Maryland: Institute for Resource Development, 1990) Table 3.1.

Chart 7: Special data analysis by Institute for Resource Development (IRD).

Chart 8: Charles F. Westoff and Luis Hernando Ochoa, "Unmet Need and the Demand for Family Planning," *Demographic and Health Surveys Comparative Studies No. 5* (Columbia, Maryland: Institute for Resource Development, 1990) Table 4.2.

Chart 10: Special data analysis by IRD.

Chart 13: Special data analysis by IRD.

Chart 14: Special data analysis by IRD.

Chart 16: J.T. Boerma, A.E. Sommerfelt, S.O. Rutstein, and G. Rojas, "Immunization: Levels, Trends and Differentials," *Demographic and Health Surveys Comparative Studies No. 1* (Columbia, Maryland: Institute for Resource Development, 1990) Table 4.1.

DHS World Summary Table

All data are from the individual DHS country reports unless specifically cited below.

Columns 1-2: *1991 World Population Data Sheet* (Washington, D.C.: Population Reference Bureau, 1991).

Column 3: Fred Arnold and Ann K. Blanc, "Fertility Levels and Trends," *Demographic and Health Surveys Comparative Studies No.2* (Columbia, Maryland: Institute for Resource Development, 1990) Table 2.1.

Columns 4-7: Charles F. Westoff, "Reproductive Preferences: A Comparative View," *Demographic and Health Surveys Comparative Studies No. 3* (Columbia, Maryland: Institute for Resource Development, 1991) Table 3.1.

Columns 8-9: "Fertility and Family Planning Survey: An Update," *Population Reports* (Population Information Program, Johns Hopkins University, Series M, No. 8) Table 6.

Column 27: *Demographic and Health Surveys World Conference, August 5-7, 1991*, wallchart (Columbia, Maryland: Institute for Resource Development, 1991).

Columns 28-29: J.T. Boerma, A.E. Sommerfelt, S.O. Rutstein, and G. Rojas, "Immunization: Levels, Trends and Differentials," *Demographic and Health Surveys Comparative Studies No. 1* (Columbia, Maryland: Institute for Resource Development, 1990) Table 4.1.