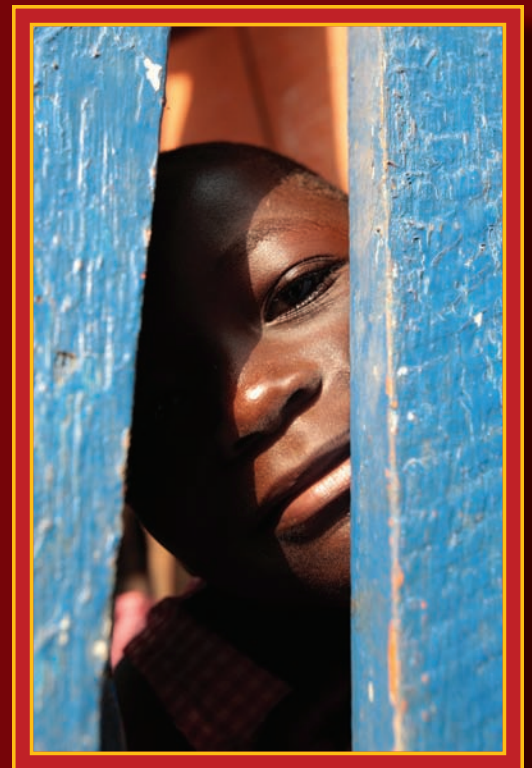GHANA TREND REPORT

Trends in Demographic, Family Planning, and Health Indicators in Ghana, 1960-2008

DHS Trend Report No. 6

Trends in Demographic, Family Planning, and Health Indicators in Ghana, 1960-2008

Trend Analysis of Demographic and Health Surveys Data

ICF Macro
Calverton, Maryland USA

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Ghana Statistical Service

Ghana Health Service

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1 INTRODUCTION

This report highlights important trends in key population, family planning, and health indicators in Ghana over the past four to five decades. In particular, the report addresses the prevailing demographic situation and describes trends in fertility, family planning, and maternal and child health, including infant and child mortality. It was prepared to provide policymakers and programme administrators the information needed to assess the current situation and to design more effective population, family planning, and maternal and child health programmes.

1.1 Data Sources

In the past, the earliest known method of demographic data collection in Ghana was the population census. This data-gathering activity dates back to the pre-colonial era in Ghana, a time when traditional rulers conducted counts of their country's population to obtain information about their realm, and in particular, about the number of fighting men within the realm. The first modern population censuses were conducted during the British Colonial Administration in 1891. After that, censuses were conducted regularly every 10 years until 1941 when the Second World War interrupted the activity of census taking until 1948.

Ghana became an independent country in March 1957, and the first modern census was conducted in 1960. Three other censuses have been conducted since that time—in 1970, 1984, and 2000. In addition, basic demographic data were collected in a number of surveys, including the Post Enumeration Survey (1960), the Supplementary Enquiry (1970), the Ghana Fertility Survey (1979-80), three rounds of the Ghana Living Standards Survey (1987-88, 1988-89, and 1991-92), and five rounds of the Ghana Demographic and Health Survey (1988, 1993, 1998, 2003, and 2008).

Six of these surveys—the Ghana Fertility Survey (GFS) and the five Ghana Demographic and Health Surveys (GDHS)—serve as the principal data sources for this report. Details of these surveys are provided in the Appendix. Although the GFS and GDHS surveys were implemented by the same statistical institution in Ghana, differences in the data collection methodology and the estimation methods used in these surveys affect the comparability of some results. In a few instances, such differences limit the number of indicators amenable to trend analysis.

The report begins with a brief description of the current population and family policies and programmes in Ghana, including targets, goals, and achievements. Information is then presented on key demographic, social, and economic trends. The remaining sections of the report deal with trends in other important demographic and social variables related to marriage, fertility, family planning, and maternal and child health.

1.2 Population and Family Planning Policies and Programmes

Ghana's population is growing rapidly. Estimated to be growing at a rate of 1.9 percent, the population was 23.9 million in 2008 (CIA, 2010). The young age of the population—39 percent of the population is less than 15 years of age, and only 4 percent is age 65 or older—is a result of the high rate of population growth.

Ghana adopted an explicit and comprehensive population policy in 1969. Although the 1969 policy was retained by successive governments, very little progress was made during the next two decades in reducing the rate of population growth because political commitment was absent. In 1994, after 25 years of implementation, Ghana's population policy was revised to recognize the fact that the socioeconomic

conditions of the time differed from those prevailing in 1969 when the original policy was drafted. The new policy seeks to ensure that Ghana will achieve and maintain a level of population growth that is consistent with national development.

The government's long-term vision (Ghana-Vision 2020) for the country is to attain a balanced economy that helps people attain a middle-income status and standard of living by the year 2020. The vision sets a goal to reduce population growth from its present level of around 3 percent to 2 percent each year. This would allow real income per capita to rise to more than four times the level in 1993.

A commitment to family planning is considered basic to the achievement of the National Development Policy Framework's goals. In Ghana, a wide gap exists between the knowledge of family planning and the level of contraceptive practice. Efforts are therefore being made through maternal and child health activities to expand family planning services and to enhance the capabilities of the private agencies providing these services.

1.3   Health Priorities and Programmes

The overall objective of a national health policy is to improve the health status of all Ghanaians. Currently, the average life expectancy at birth in Ghana is 60 years (CIA, 2010), which represents a considerable improvement over the 1957 level of 45 years. Life expectancy at birth is heavily influenced by the rates of infant and under-five mortality. In 2008, these rates were estimated at 50 and 80 deaths per 1,000 live births, respectively (GSS, GHS, and ICF, Macro, 2009). The relatively high childhood mortality in Ghana is due to an amalgam of factors, especially the lack of protection from preventable diseases. To address this issue, the Ministry of Health has pursued a policy to achieve universal child immunisation.

Other factors that contribute to ill health and low child survival in Ghana include a lack of access to safe drinking water, unsanitary living conditions, and poor nutrition. Policies have been put in place to control risk of major communicable diseases; to reduce the incidence of water-borne and other environmental diseases arising from unsanitary practices and inadequate housing; to eradicate child malnutrition; to increase access to health services, especially in rural areas; to establish a health system that effectively delivers public health services; and to strengthen the overall management of the health care system.

2 DEMOGRAPHIC, SOCIAL, AND ECONOMIC INDICATORS

2.1 Population Growth and Spatial Distribution

Ghana's population has grown rapidly. During the 27-year period from 1921 to 1948, the country's population almost doubled, expanding from 2.2 million to 4.1 million (Figure 2.1). In 1960, the population of Ghana had reached 6.7 million, and, by 1984, it had increased to 12.3 million, triple its size in 1948 and nearly double its size in 1960. The population continued to expand throughout the 1980s and 1990s. In 2009, Ghana's population was estimated to be 23.9 million, an increase of 11.6 million, or 94 percent, over the population in 1984, and 5 million, or 26 percent, over the population in 2000.

**Figure 2.1
Size of the Population**

Population in millions
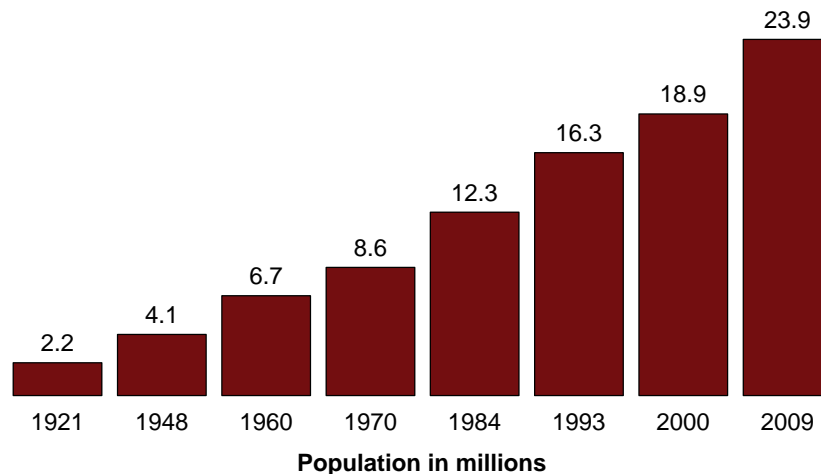
Table 2.1 shows the growth in the population at the regional level between the 1960, 1970, 1984, and 2000 censuses. Between 1960 and 1970, Greater Accra, Northern, Ashanti, and Brong Ahafo regions grew at a faster rate than the national average of 2.4 percent. From 1970 to 1984, the highest growth rates were in Greater Accra and Northern regions, followed by Brong Ahafo and Western. Between 1984 and 2000, Greater Accra again experienced the highest growth rate, followed by Ashanti, Western, and Northern regions.

In terms of absolute size, the Ashanti Region was the most populous region in Ghana between the 1960 and 2000 censuses. In 2000, 19 percent of the total population was living in Ashanti. Upper West region, which had 3 percent of the total population in 2000, was the smallest region.

Finally, while Ghana's population is predominantly rural, urbanization between 1960 and 2000 is one of the most significant demographic trends. The proportion of the population living in urban areas has grown gradually, from 23 percent at the time of the 1960 census to 44 percent at the time of the 2000 census (Figure 2.2). In other words, the proportion of Ghana's population that is urban has almost doubled since 1960. The 2008 GDHS reported that a similar proportion of the population, 44 percent, was living in urban areas (GSS, GHS, and ICF Macro, 2009).

Table 2.1
Population size and inter-censual growth rates

Region	Population size (in thousands)				Annual growth rate		
	1960	1970	1984	2000	1960-70	1970-84	1984-2000
Western	625	770	1,158	1,925	2.1	3.0	3.2
Central	725	890	1,142	1,594	1.7	1.8	2.1
Greater Accra	542	852	1,431	2,906	5.2	3.4	4.4
Eastern	1,044	1,262	1,681	2,107	1.5	2.4	1.4
Volta	777	947	1,212	1,635	2.0	1.8	1.9
Ashanti	1,109	1,482	2,090	3,613	2.9	2.3	3.4
Brong Ahafo	587	767	1,207	1,815	2.7	3.3	2.5
Northern	532	728	1,165	1,821	3.2	3.4	2.8
Upper West	289	320	438	577	1.0	2.3	1.7
Upper East	469	543	773	920	1.5	2.6	1.1
Total	6,701	8,561	12,296	18,913	2.4	2.6	2.7

Source: Census data

Figure 2.2
Percent Distribution of De Facto Household Population
According to Urban-Rural Residence
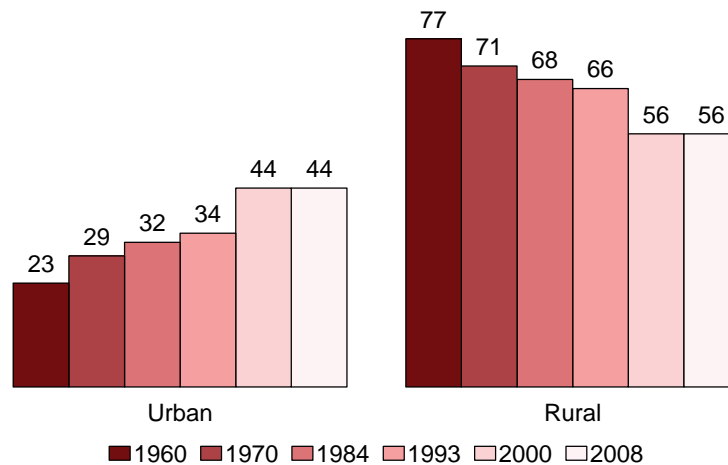
2.2   Social and Economic Indicators

The economy of Ghana is mixed, consisting of a large, traditional agricultural sector made up primarily of small-scale farmers; a small, capital-intensive modern sector involving mining and a few manufacturing establishments; and a growing informal sector of small businessmen, artisans, and technicians. The agricultural sector absorbs three-fifths of the country's labour force and accounts for about one-third (34 percent) of the gross domestic product (GDP) (GSS, 2008). It employs about 50 percent of the population (GSS, 2002). The service sector, with a growth rate of 10 percent, is the fastest growing sector of the economy, and it contributes one-third of the country's GDP. The industrial sector contributes a little over one-quarter (26 percent) to the country's GDP (GSS, GHS, and ICF Macro, 2009). The leading exports are gold, timber, and cocoa.

After Ghana declared independence, the economy performed at its worst. During the late 1970s and early 1980s, the GDP grew at a negative rate of 0.5 percent from 1975 to 1982. The Economic Recovery Programme (ERP) was introduced in 1983 to halt the deterioration of the economy and to stabilize the macroeconomic framework. The programme was successful, and Ghana achieved a remarkable increase (52 percent) in the GDP between 1984 and 1993. The estimated annual growth of the GDP for 2009 was 4.7 percent (CIA, 2010).

One of the most important indicators of economic and social development in a country is the educational level of its population. Moreover, education, especially for women, is closely associated with key indicators examined in this report, including fertility, use of contraception, and the health status of children. There have been substantial improvements in educational levels since the country's independence, as more children take advantage of the opportunities to attend school. In 1993, 74 percent of men and 62 percent of women age 6 and older had attended school at some time (Figure 2.3). By 1998, the proportions were 79 percent for men and 65 percent for women. Although the figures from the 2003 GDHS indicate a slight decline, with 74 percent of men and 62 percent of women reporting school attendance, by 2008, the proportion of men who attended school had again increased—to almost the same level as in 1998 (78 percent). The proportion of women attending school had also climbed—to the highest level ever reported—of 69 percent (GDHS, 2008).

Figure 2.3
Percent Male and Female Household Population
Age 6 and Over Who Ever Attended School
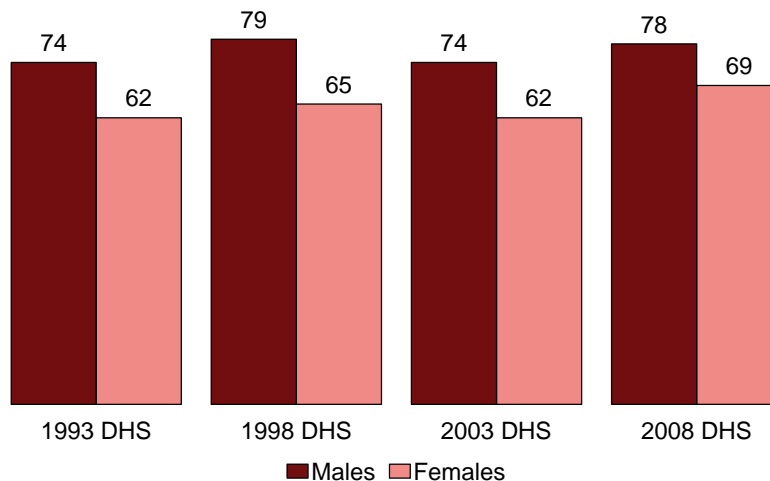
Data from the GDHS can be used to examine in greater detail the changes in educational attainment among women of reproductive age (15-49). As Figure 2.4 shows, the percentage of women age 15–49 with no education fell by half, from 40 percent in 1988 to 21 percent in 2008, while the proportion with primary schooling only increased from 16 to 20 percent over the same period. Women in Ghana are increasingly enjoying better education over time. The proportion of women with Junior Secondary School (JSS) or middle school education increased significantly from 37 percent in 1988 to 45 percent in 2008. Figure 2.4 also shows that the proportion of women with a secondary school or higher level of education increased from 8 to 14 percent between 1988 and 2008.

Figure 2.4
Percent Distribution of Women 15-49
by Level of Education

No education — 40, 35, 29, 28, 21
Primary — 16, 16, 18, 20, 20
Middle/JSS — 37, 39, 43, 40, 45
Secondary+ — 8, 10, 10, 12, 14

1988 1993 1998 2003 2008
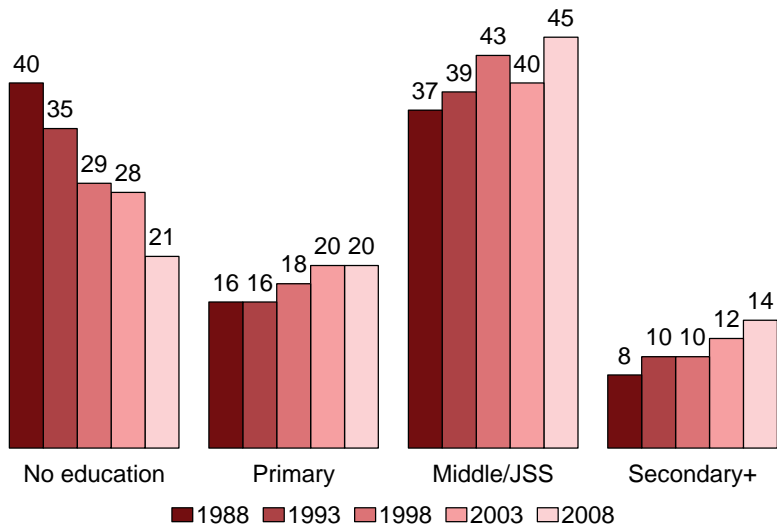
3   HOUSEHOLD CHARACTERISTICS

Household characteristics, such as housing conditions and ownership of consumer durables, serve as indirect indicators of a household's standard of living. Trends in these characteristics reflect a society's material progress, which has implications both for the economic well-being of the population and also for maternal and child health. This section examines the relationship between household characteristics and women's welfare.

3.1   Housing Characteristics

Figure 3.1 presents data on trends in the proportion of women age 15-49 that live in households with piped drinking water and in households with electricity, by urban-rural residence, and from the five GDHS surveys. Overall, in the two decades between 1988 and 2008, there was an increase of 11 percentage points in the households with piped drinking water, from 33 percent in 1988 to 44 percent in 2008. In 2008, the percentage of women living in urban households with piped drinking water is more than three times that of women in rural households (68 percent versus 22 percent).

The 2008 GDHS findings show an increase in the use of electricity over the past two decades, especially among rural households. The proportion of women living in households with access to electricity increased from 27 percent in 1988 to 60 percent in 2008. Although the gap between urban and rural households in the proportion of women with electricity is substantial, the increase in access to electricity in the rural areas has been quite steady and rapid, from 7 percent in 1988 to 36 percent in 2008.

Figure 3.1
Percentage of Women 15-49 Living in Households with
Piped Drinking Water and with Electricity,
by Urban-Rural Residence
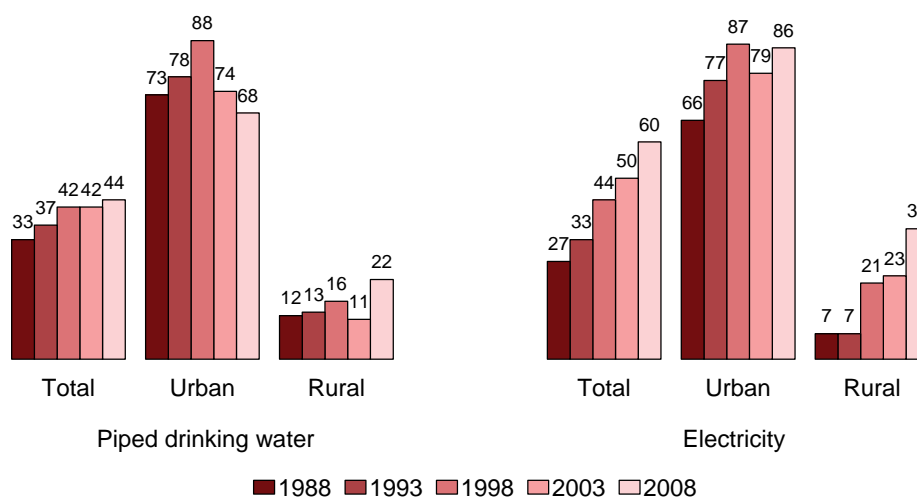
Access to sanitary toilet facilities is an important indicator of the well-being of the population. Figure 3.2 shows that, for the country as a whole, the proportion of women age 15-49 living in households with a flush toilet more than doubled—increasing from 7 percent to 16 percent between 1988 and 2008. At the same time, those living in households with no toilet facilities have declined somewhat, from 24 percent to 20 percent, during the same time period. There is a considerable gap between urban and rural households in the availability of toilet facilities. In urban areas, the proportion of women living in households with a flush toilet increased from 17 percent in 1988 to 30 percent in 2008, while in rural areas it increased only from 1 percent to 4 percent during the same period.

Figure 3.2
Percentage of Women Living in Households with a Flush
Toilet and with No Toilet/Bush, by Urban-Rural Residence

■1988 ■1993 ■1998 ■2003 □2008
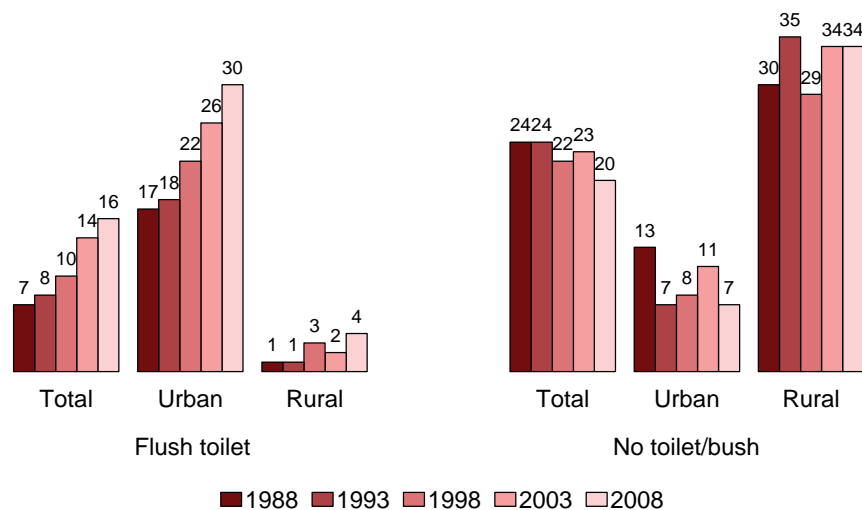
3.2   Exposure to Mass Media

Another important household socioeconomic indicator is the ownership of the radio and the television. Research has shown that radio and television can be powerful tools not only to create awareness about new technology but also to stimulate the desire for information and to facilitate efforts to apply this information to individual behaviour. Families who own a radio or television are likely to have greater exposure to health education messages about common childhood diseases, infant feeding practices, vaccination, reproductive health, and HIV/AIDS. The percentage of women age 15-49 in households that have a radio has increased steadily, from 41 percent in 1988 to 76 percent in 2008 (Figure 3.3). Only 9 percent of women lived in households with a television in 1988, compared with 46 percent in 2008. Access to television has increased substantially in the past five years, especially in rural areas (11 percent in 2003 compared with 22 percent in 2008).

Figure 3.3
Percentage of Women 15-49 Living in Households with a
Radio and with a Television, by Urban-Rural Residence

Radio / Television

■1988 ■1993 ■1998 □2003 □2008
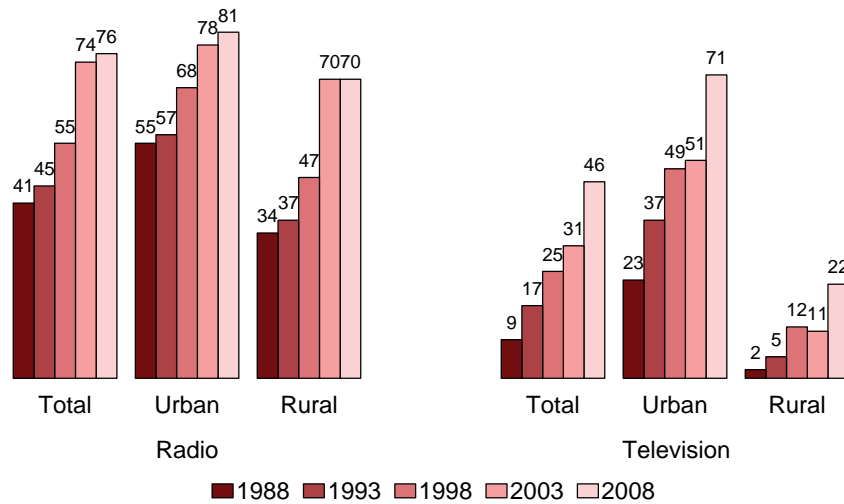
Figure 3.4 shows the trends in the proportion of women of childbearing age who listened to the radio every week. The results suggest that there was an increase in the women's exposure to radio broadcasts between 1988 and 2008. (Weekly radio exposure was not available from the 1998 GDHS data.) Overall, three in four women reported hearing a radio broadcast at least weekly in 2003 (74 percent) and 2008 (76 percent) compared with about half (49 percent) in 1988. Radio exposure levels continued to increase among rural residents while remaining constant among urban residents over the last five years. Thus, the difference between urban and rural areas was smaller in 2008 than in previous years.

Figure 3.4
Percentage of Women 15-49 Who Listen to Radio at least
Once a Week, by Urban-Rural Residence

■1988 ■1993 □2003 □2008
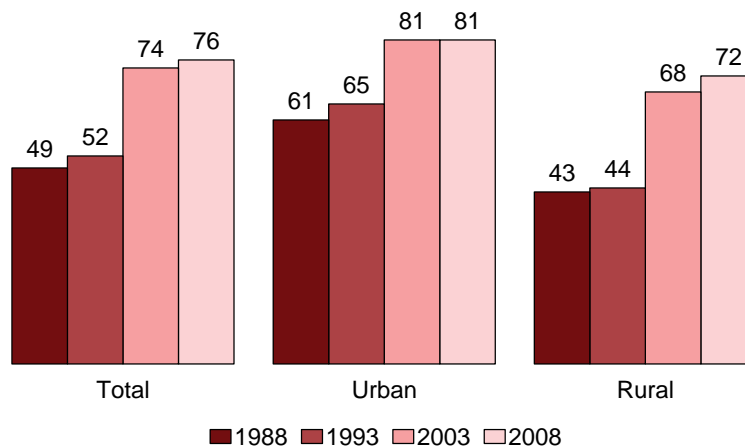
Note: Data on weekly radio listening were not available for the 1998 survey.

3.3   Ownership of Means of Transportation

In Ghana, ownership of a means of transportation is an indicator that a household has a relatively high living standard. The percentage of women age 15-49 living in households that own a car increased only slightly from 1988 to 2008, from 6 to 9 percent. Over the same period, however, ownership of bicycles almost tripled, from 11 to 31 percent.

**Figure 3.5
Percentage of Women 15-49 Living in Households with a
Car and with a Bicycle, by Urban-Rural Residence**
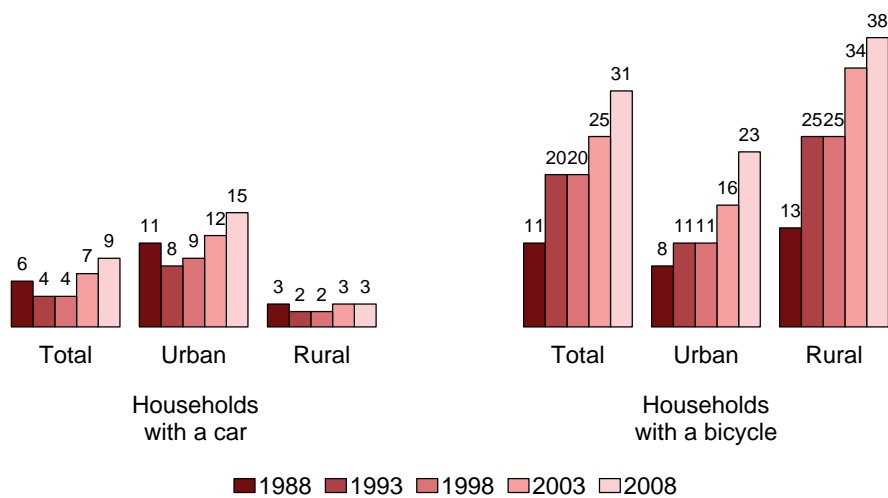
4   MARRIAGE PATTERNS

There are various types of marriages and unions in Ghana, ranging from customary, civil, and religious marriages to more informal unions. Childbearing is therefore not confined to marital unions, and there are both premarital births and births occurring in informal unions. However, most births occur within marriage, making marriage an important indicator of the onset of the primary period of exposure to the risk of pregnancy for the majority of women.

4.1   Never-married Women

In the GFS and GDHS surveys, "marriage" was defined as a stable cohabitation between a man and a woman irrespective of whether or not any validating legal, religious, or customary rites or ceremonies had been performed. Ghanaian women are delaying the age at which they establish a stable marital union. The proportion of women who have never married has increased over time in each age group. The increases are especially striking for women under age 30. The proportion of never-married women age 15-19 increased from 69 percent in 1979 to 91 percent in 2008. Among women age 20-24, the proportion rose from 15 to 49 percent. These increases in the proportion of women who have never married is a trend toward delaying the onset of the primary period of exposure to the risk of pregnancy, which may partially account for the noticeable drop in fertility over the period (see Section 5).

Figure 4.1
Percentage of Women Never Married,
by Five-Year Age Group
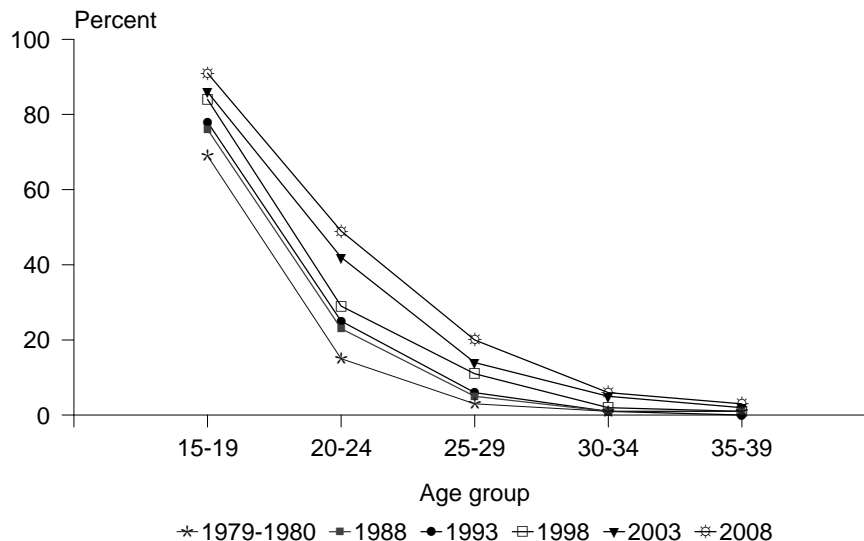
4.2   Median Age at First Marriage

One indicator that is used to explore trends in the timing of marriage is the median age at first marriage, that is, the age by which 50 percent of the women in a group were married for the first time. In Ghana, the median age at first marriage for women age 25-49 years was 18.1 years between 1979-80 and 1988, but increased to 18.8 years by 1993, and to 19.8 years by 2008 (Figure 4.2).

Figure 4.2
Median Age at First Marriage Among Women 25-49,
by Urban-Rural Residence

Total, Urban, Rural bar chart values:

Total: 18.1, 18.1, 18.8, 19.1, 19.4, 19.8
Urban: 18.2, 18.5, 19.5, 19.7, 20.2, 21.3
Rural: 18.1, 17.9, 18.6, 18.8, 18.8, 18.7

Legend: ■1979-1980 ■1988 ■1993 ■1998 □2003 □2008
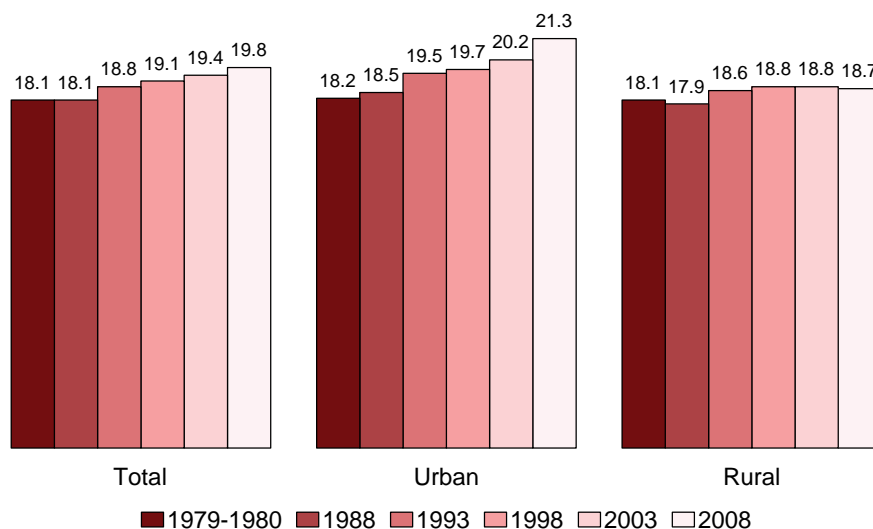
Urban women generally marry at a later age than their rural counterparts. Figure 4.2 shows that the increase over time in the median age at first marriage is more pronounced among urban than rural women. For urban women, median age at first marriage increased steadily from 18.2 years in 1979-80 to 21.3 years in 2008, an increase of more than three years. The median age at first marriage for rural women was 18.1 years in 1979-80 and 18.7 years in 2008, an increase of less than one year, and the increase has not followed a steady pattern.

Figure 4.3 shows a strong positive association between the age at which women first marry and the number of years of schooling they have attained. For example, in 2003, the median age at first marriage among women who had attended secondary school or higher was 25 years, 6 years greater than the median age among women who had never attended school (19 years). The relationship between age at marriage and level of schooling is partially explained by the postponement of marriage in order to continue school attendance; however, education also places a woman in a social context in which early marriage is less attractive. These women have alternatives to marriage, including further education and employment in the formal sector.

With regard to trends in the age at marriage, the results in Figure 4.3 show increases in the median age at first marriage among women at all educational levels, with the most notable increases occurring among women with middle/JSS and secondary or higher education.

**Figure 4.3
Median Age at First Marriage Among Women 25-49,
by Level of Education**

No education: 17.7, 18.5, 18.5, 18.8, 18.6
Primary: 17.6, 18.3, 18.8, 18.6, 18.3
Middle/JSS: 18.5, 18.9, 19.2, 19.5, 20.1
Secondary+: 21.7, 22.3, 23.2, 24.8

■1988 ■1993 ■1998 □2003 □2008
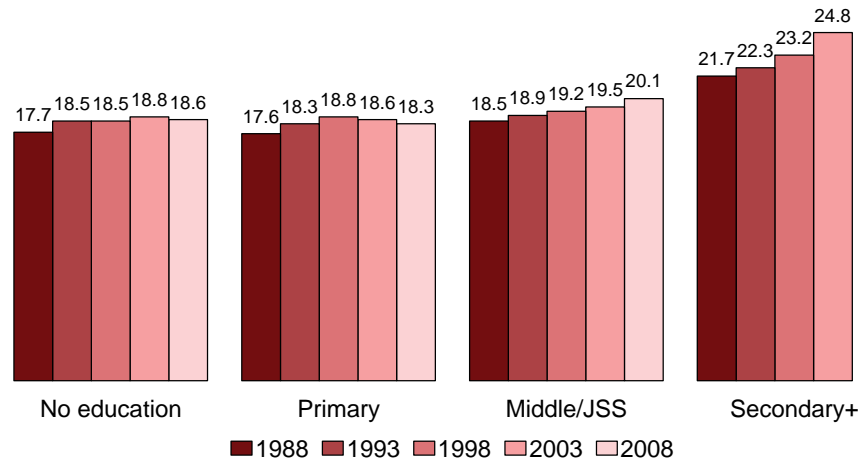
Note: The figure for the 2008 'Secondary+' education category has been omitted because less than 50 percent of the women were married for the first time before reaching the beginning of the age group.

4.3   Prevalence of Polygyny

The extent of the practice of polygyny in Ghana was assessed in the 1979-80 GFS and the GDHS surveys by asking married women whether their husband had other wives and, if so, the number of wives. One of the major connections between polygyny and fertility is that polygyny provides women who might otherwise have remained single the opportunity to marry and contribute to a greater level of exposure to the risk of pregnancy among women (especially those in the younger age groups) than might have prevailed in the absence of polygyny.

Overall, the level of polygyny fell from 35 percent in 1979-80, to 28 percent in 1993, and to 18 percent in 2008. However, between 1998 and 2008, the percentage of women in a polygynous union remained about the same. Urban women are less likely to be in a polygynous union than rural women. Between 1988 and 1998, the decrease in polygyny was more rapid among urban than among rural women. Between 1998 and 2003, polygyny remained at about the same level or increased slightly in both urban and rural areas. However, between 2003 and 2008 the prevalence of polygynous marriages declined in both urban and rural areas (Figure 4.4).

Figure 4.4
Percentage of Currently Married Women 15-49
in a Polygynous Union, by Urban-Rural Residence

Total: 35, 33, 28, 23, 23, 18
Urban: 32, 28, 22, 16, 17, 12
Rural: 36, 35, 31, 26, 27, 23

■1979-1980 ■1988 ■1993 ■1998 □2003 □2008
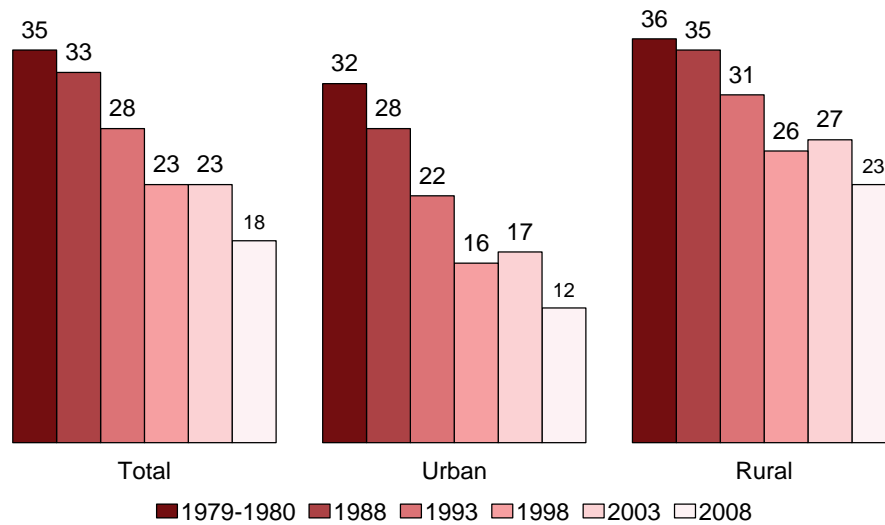
Figure 4.5 shows that the practice of polygyny in Ghana decreases as a women's level of education increases. Also, the level of polygyny associated with each educational category has declined over time, with the most rapid declines occurring among women with higher levels of education. While the proportion of women with no education in a polygynous union decreased by 23 percent between 1988 and 2008, the proportion of women with primary education dropped by a third over the same period, and the proportion for women with middle/JSS decreased by more than half. The greatest decline, by far, is among women with secondary school or higher education, from 19 percent in 1988 to 4 percent in 2008, a 79 percent decrease.

Figure 4.5
Percentage of Currently Married Women 15-49
in a Polygynous Union, by Level of Education

No education: 40, 36, 32, 36, 31
Primary: 28, 24, 23, 19, 19
Middle/JSS: 27, 22, 16, 13, 12
Secondary+: 19, 18, 13, 9, 4

■1988 ■1993 ■1998 □2003 □2008
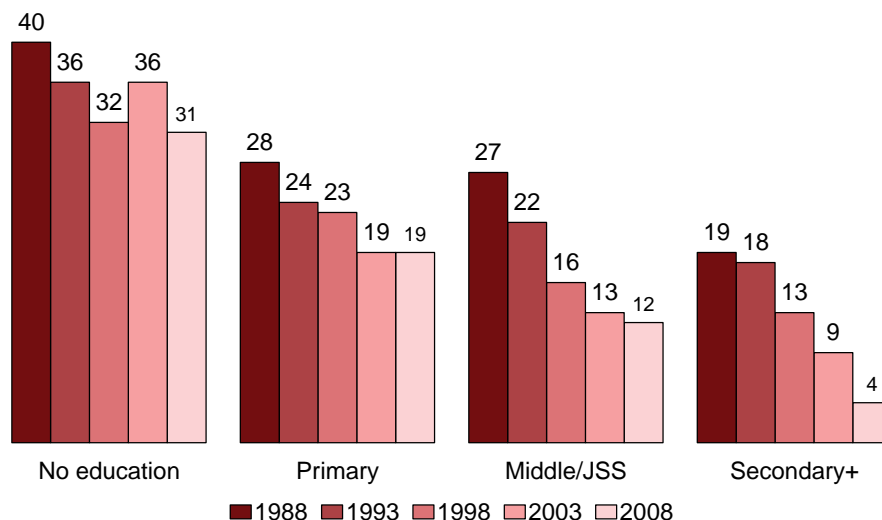
5   FERTILITY

Data from the five GDHS surveys suggest that Ghana has begun the transition to lower fertility that is characteristic of more developed countries.

5.1   Total Fertility Rates

The total fertility rate (TFR) is an estimate of the average number of births a woman would have at the end of her reproductive years if she were to bear children at the prevailing age-specific fertility rates throughout her childbearing years. Figure 5.1 shows the trend in the total fertility rate based on results from the GDHS surveys from 1988 to 2008. These surveys show evidence of an overall decrease in fertility in Ghana. However, the pace of decline was most rapid from 1988 to 1998. The TFR declined markedly from 6.4 births per woman in 1988 to 4.4 births per woman in 1998, a decrease in fertility of two births per woman. Births stabilised at that level until 2003, and then declined to 4.0 in 2008.

Figure 5.1
Total Fertility Rates for the Three-Year Period
Preceding the Survey, by Urban-Rural Residence
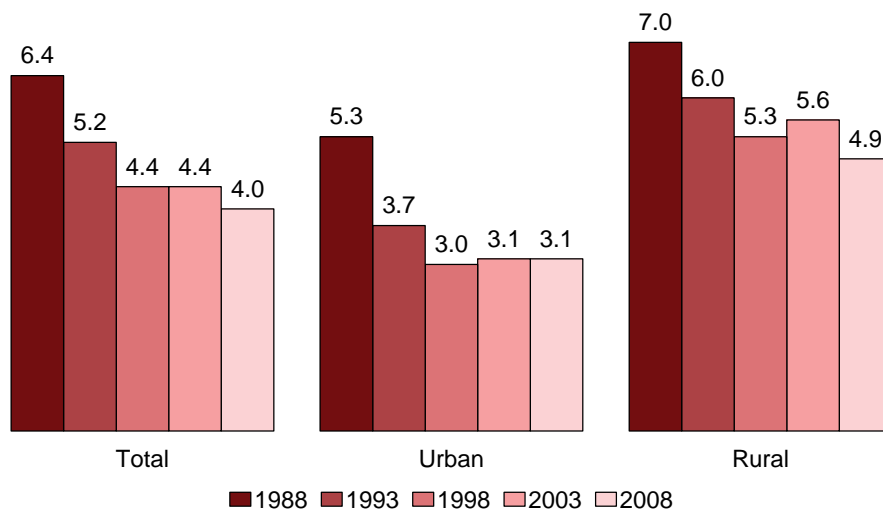
5.2   Total Fertility Rates by Residence

Fertility trends differed in urban and rural areas. During the period between the 1988 and 1998 GDHS surveys, urban fertility declined, from 5.3 to 3.0 births per woman, but thereafter stalled and remained at approximately that level over the last decade from 1998 through 2008. In the rural areas, the decline in fertility continues through the present day, falling from 7.0 births per woman in 1988 to 5.6 births in 2003 to 4.9 births per woman in 2008 (Figure 5.1).

Table 5.1 shows that fertility levels have fallen sharply in almost all regions. Currently, the total fertility rate ranges from 2.5 births per woman in Greater Accra to 6.8 births per woman in the Northern region. Changes in the TFR at the regional level generally reflect the national trend, declining between 1988 and 1998, and then levelling off from 1998 to 2008. Throughout the period, the TFR in Greater Accra remained substantially lower than the TFR in the other regions.

Brong Ahafo and Volta are among the regions with the greatest fertility decline since 1988. The TFR in the Northern region is not only higher than that of other regions, but it has also generally increased since 1993, the first year for which data are available. Data from the 2008 GDHS show that the TFR in all regions except the Central region has declined between 2003 and 2008, while the TFR in the Central region has increased from 5.0 to 5.4 births per woman.

Table 5.1
Total fertility rate for women 15-49 for the
three-year period preceding the survey, by region

Region	1988	1993	1998	2003	2008
Western	6.4	5.4	4.3	4.5	4.2
Central	6.6	5.4	4.7	5.0	5.4
Greater Accra	4.7	3.4	2.7	2.9	2.5
Volta	7.2	5.4	4.3	4.4	3.8
Eastern	6.0	5.0	4.5	4.3	3.6
Ashanti	6.3	5.4	4.9	4.1	3.6
Brong-Ahafo	7.6	4.7	5.2	4.8	4.1
Northern, Upper West, Upper East	6.9	6.0	5.4	6.0	u
Northern	u	6.4	6.6	7.0	6.8
Upper West	u	5.2	5.9	5.5	5.0
Upper East	u	5.7	4.4	4.7	4.1
Total	6.4	5.2	4.4	4.4	4.0

u = Unknown (not available)

5.3   Total Fertility Rates by Women's Education

Research has shown that women who are more educated tend to want and have fewer children than less educated women. A partial explanation for this pattern is that better educated women have higher expectations for their children and therefore plan to have fewer children in order to make a greater investment in each child's well being and education. Women with greater earning potential (as a result of education) are also likely to value their time more highly and to appreciate the high "opportunity costs" of having a large family. According to the survey findings, fertility levels are inversely associated with the number of years of schooling attended. Fertility has declined in all educational categories. However, the largest decline in the TFR between 1988 and 2008 was seen among women who attended middle school/JSS or higher education (Figure 5.2).

Figure 5.2
Total Fertility Rates for the Three-Year Period
Preceding the Survey, by Level of Education

No education: 7.0, 6.0, 5.7, 6.0, 6.0
Primary: 6.5, 5.8, 5.0, 5.3, 4.9
Middle/JSS: 6.0, 4.7, 3.8, 3.5, 3.5
Secondary+: 3.6, 2.8, 2.7, 2.5, 2.1

■1988 ■1993 ■1998 □2003 □2008
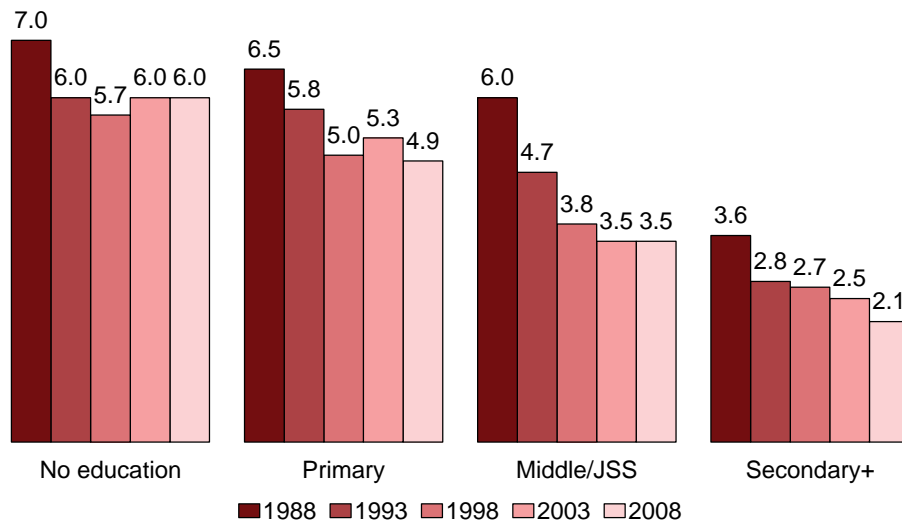
5.4 Median Age at First Birth

Women who have their first birth early tend to have a greater number of children than those who delay their first birth. The median age at which women started childbearing increased from 19.5 years to 20.7 years between the 1988 GDHS and the 2008 GDHS (Figure 5.3). Urban women continue to postpone having their first birth, while the rise in age at first birth among rural women has stalled over the last decade, resulting in a widening gap in urban-rural differential in age at onset of childbearing. On average, rural women start childbearing about two years earlier than urban women (20.0 years versus 22.1 years).

Figure 5.3
Median Age at First Birth Among Women 25-49,
by Urban-Rural Residence

Total: 19.9, 19.5, 20.2, 20.3, 20.5, 20.7
Urban: 20.0, 20.1, 20.9, 21.0, 21.1, 22.1
Rural: 19.9, 19.2, 19.9, 20.0, 20.1, 20.0

■1979-1980 ■1988 ■1993 ■1998 □2003 □2008
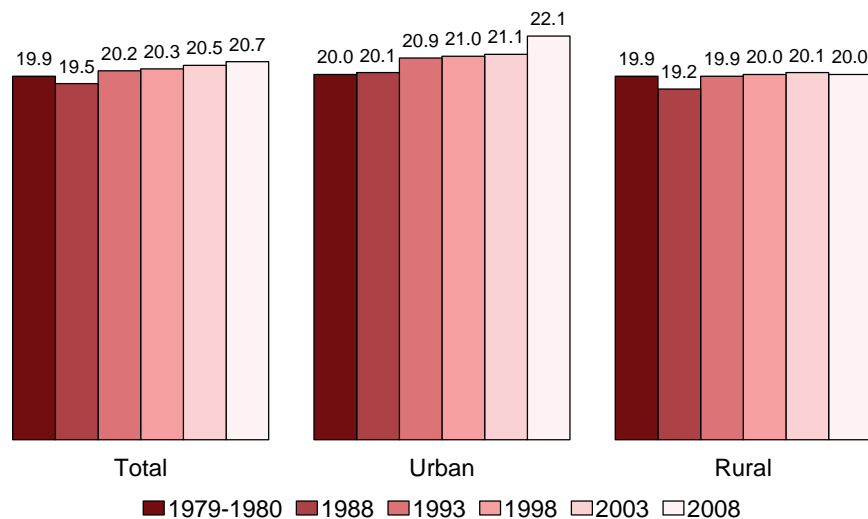
5.5   Adolescent Fertility

Research suggests that teenagers are more likely than older women to suffer from pregnancy-related complications that can lead to death. Furthermore, adolescent pregnancy is risky not only for the young woman but for the child as well, particularly when the young mother is not adequately prepared for the experience of childbearing. Figure 5.4 shows that there has been a decline in the percentage of teenage girls who are pregnant or who are already mothers, from 27 percent in 1979-80 to 22 percent in 1993 to 14 percent in 1998. However, in the past decade (1998-2008) the proportion of teenagers that have started childbearing has stayed at the same level of 13-14 percent.

Marked differentials exist in the pattern of teenage childbearing by urban-rural residence. In 1979-80, the proportion of teenage girls who were mothers or pregnant with their first child was similar in urban and rural areas (27-28 percent). Between 1979-80 and 1988, there was a substantial decrease in the proportion of urban teenage girls who were mothers, and a further decrease occurred between 1993 and 2003. However, between 2003 and 2008, there was a significant increase in the proportion of urban young women who started childbearing—from 7 percent to 11 percent.

Young women in rural areas show a different pattern. From 1979 to 1993, the proportion remains at the same level of 26-27 percent. In 1998, only 17 percent of teenagers reported having had a child or being pregnant with a first child. This figure went up to 22 percent in 2003, but declined to 16 percent in 2008. In 2008, the gap in the level of teenage childbearing between rural areas and urban areas has narrowed significantly compared with previous years (11 percent and 16 percent, respectively).

Figure 5.4
Percent of Women 15-19 Who Are Mothers or Are Pregnant
with Their First Child, by Urban-Rural Residence
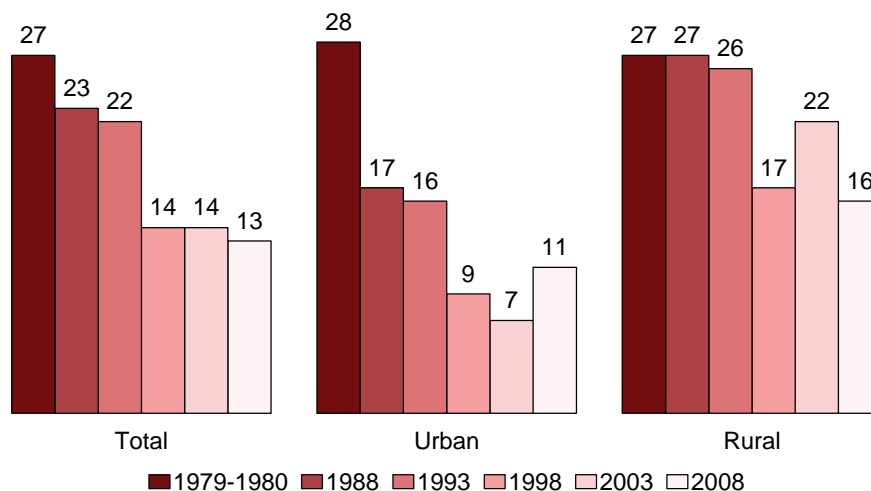
5.6   Birth Intervals

A child's health status is related to the length of the preceding birth interval. Children born shortly after a prior birth are at greater risk of illness and death than those born after a long interval. Further, the occurrence of closely spaced births gives the mother insufficient time to restore her health, which may limit her ability to take care of her children.

Figure 5.5 shows that the length of the median birth interval increased from 33 months for births in the five years preceding the 1979-1980 GFS survey to 40 months for births in the five years preceding the 2008 GDHS. The median interval between births in urban areas and births in rural areas was similar (33 months) at the time of the GFS survey in 1979-80; however, by 2008, urban mothers were waiting 6 months longer than rural mothers to have the next child (44 months versus 38 months).

**Figure 5.5
Median Length of the Preceding Birth Interval,
by Urban-Rural Residence**

■1979-1980 ■1988 ■1993 ■1998 □2003 □2008
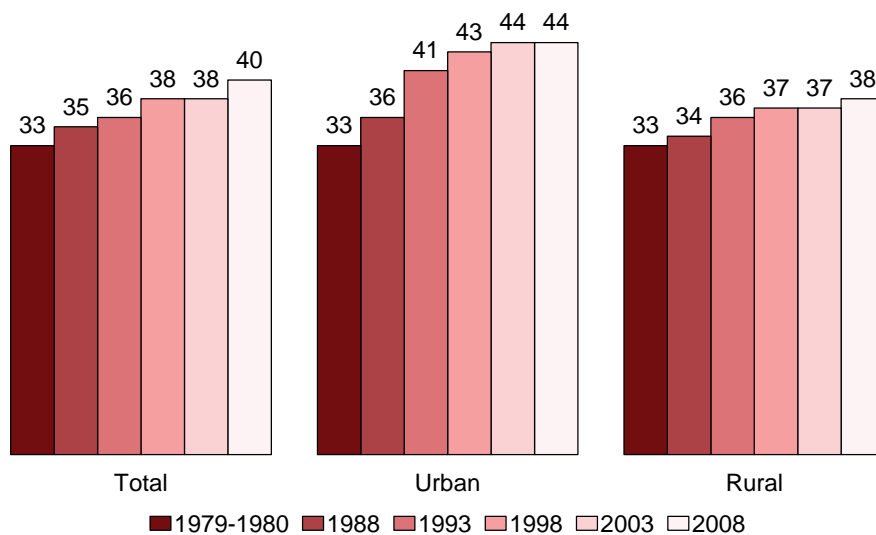
6   FAMILY PLANNING

Information on knowledge, attitudes, and the practice of family planning is of particular interest to policymakers, programme managers, and researchers concerned with planning and evaluating population and family planning interventions. In Ghana, the introduction of modern family planning activities as a public welfare service dates back to 1961 when the Christian Council of Ghana opened a Family Advice Centre in Accra to offer advice on family planning and responsible parenthood to married couples. A second organized effort to promote fertility control began in 1967, when the Planned Parenthood Association of Ghana (PPAG) was set up with branches at various centres throughout the country. The most comprehensive and positive move on the part of the government of Ghana to control population growth was in 1969, when Ghana became the first sub-Saharan country to adopt a national population policy. In pursuance of the objectives of the policy, a secretariat was established in 1970 to develop and operate a national family planning programme. A range of family planning services is currently offered at both government hospitals and clinics and also facilities operated by nongovernmental organizations (NGOs).

The 1969 National Population Policy was revised in 1994 to consider emerging issues, such as HIV/AIDS, the environment, and health care of the elderly and children, and to develop new strategies to ensure achievement of the revised policy objectives (GSS, GHS, and ICF Macro, 2009).

The major goals of the revised population policy include:

- Reducing the total fertility rate from 5.5 in 1993 to 5.0 by the year 2000, to 4.0 by 2010, and to 3.0 by 2020. Accordingly, the policy aims at achieving a contraceptive prevalence rate (CPR) of 15 percent for use of modern methods by the year 2000, 28 percent by 2010, and 50 percent by the year 2020

- Reducing the population growth rate from about 3 percent per annum to 1.5 percent per annum by the year 2020

- Increasing life expectancy from the current level of 58 years, to 65 years by 2010, and to 70 years by 2020 (NPC, 1994)

6.1   Knowledge of Family Planning

Familiarity with contraceptive methods is among the prerequisites for the adoption of fertility regulation methods. Since the initiation of family planning programmes in Ghana, information about contraceptive methods has been disseminated through a variety of channels, including the mass media. An examination of GFS and GDHS data indicates that knowledge of family planning has increased over time, a result that can, at least in part, be attributed to information campaigns.

Figure 6.1 shows that contraceptive knowledge was already moderately high among Ghanaian women in 1979-1980. According to the GFS survey, 68 percent of women age 15-49 knew at least one family planning method in 1979-1980, and 59 percent reported knowing a modern method. By 1988, the proportion had increased to 76 percent, with 74 percent knowing a modern method. Knowledge of contraception continued to increase between 1988 and 1993, when 91 percent of women reported knowing at least one method and the same proportion could identify a modern method. After 1993, knowledge of contraception continued to increase, although at a slower pace because the number of women remaining to be exposed had decreased. In 1998, 93 percent of women reported knowing a method of contraception, and the same proportion knew a modern method. In 2008, 98 percent of women reported knowing at least one method of family planning and at least one modern method of family planning, the same proportions as those reported in 2003.

**Figure 6.1
Knowledge of Contraceptive Methods
among All Women 15-49**
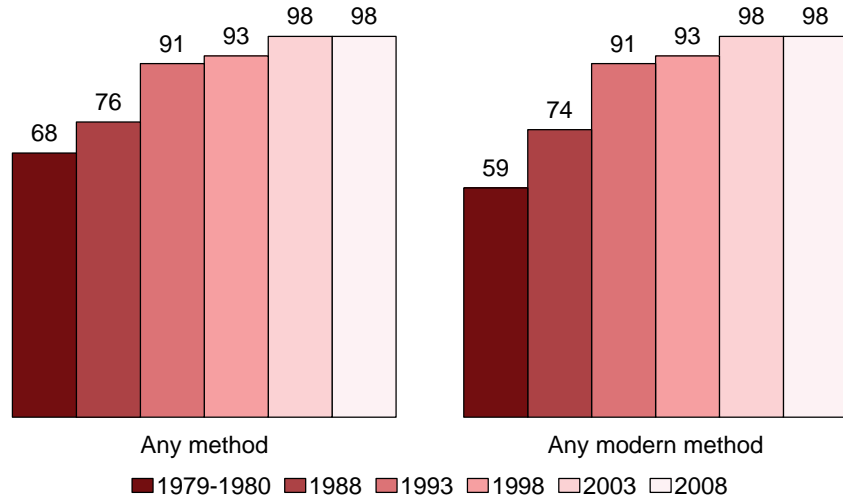
Table 6.1 shows that knowledge of all methods of contraception has increased steadily, although there has been considerable change in which methods are best known since the late 1970s. Knowledge of the male condom increased substantially over this period, and it was the most widely known contraceptive method since 1993, according to the GDHS data. Knowledge of injection has doubled since 1988 from 43 percent to 86 percent in 2008. The male condom, injection, and the pill have been the three most widely known methods of contraception in every GDHS survey since 1993. Knowledge of the female condom, first measured in the 2003 GDHS, was 83 percent in 2003 and 81 percent in 2008. Knowledge of another new contraceptive, implants, rapidly increased from 4 percent in 1993 to 21 percent in 1998 and to 64 percent in 2008. Male sterilization and the diaphragm/foam/jelly were among the least known methods and their use decreased from the levels reported in 2003. In the 2008 GHDS, 37 percent of women age 15-49 reported having heard about male sterilization compared with 43 percent in 2003, and 26 percent reported having heard about diaphragm/foam/jelly compared with 51 percent in 2003. Although only 28 percent of women had heard of emergency contraception in 2003, by 2008 the proportion had increased to 35 percent.

Table 6.1
Knowledge of specific contraceptive methods among all women 15-49

Method	1979-80	1988	1993	1998	2003	2008
Female sterilization	29	54.1	67.3	65.4	70.2	62.6
Male sterilization	4	10.7	21.4	26.3	42.8	36.6
Pill	47	59.7	79.4	78.4	87.5	86.6
IUD	33	36.7	44.5	49.3	61.3	42.5
Injectables	22	42.6	74.8	77.6	88.9	85.6
Implants	-	-	4.4	21.2	61.5	63.8
Condom	30	48.5	79.5	86.8	95.3	93.9
Female condom	-	-	-	-	83.2	81.3
Diaphragm/foam/jelly	-	36.6	53.5	42.0	50.9	26.1
Lactational amenorrhea	-	-	-	18.0	32.1	8.7
Emergency contraception	-	-	-	-	28.2	35.4
Periodic abstinence/Rhythm	21	39.0	57.1	59.4	65.4	69.5
Withdrawal	19	31.0	52.3	54.5	61.3	61.3
Any traditional or folk method	-	49.2	67.9	69.4	75.4	76.6
Number of women	-	4,488	4,562	4,843	5,691	4,916

6.2   Ever Use of Family Planning

Figure 6.2 shows the percentage of all women who have ever used a method of contraception. This figure provides a measure of the cumulative experience with family planning use in a population. In Ghana, the proportion of women who have ever used a method of contraception was 50 percent in 2008, an increase of 12 percentage points since 1979-80 (38 percent). In the same period, ever use of modern family planning methods more than doubled, increasing from 18 percent in 1979-80 to 42 percent in 2008.

Figure 6.2
Percentage of All Women 15-49 Who Have Ever Used a
Contraceptive Method
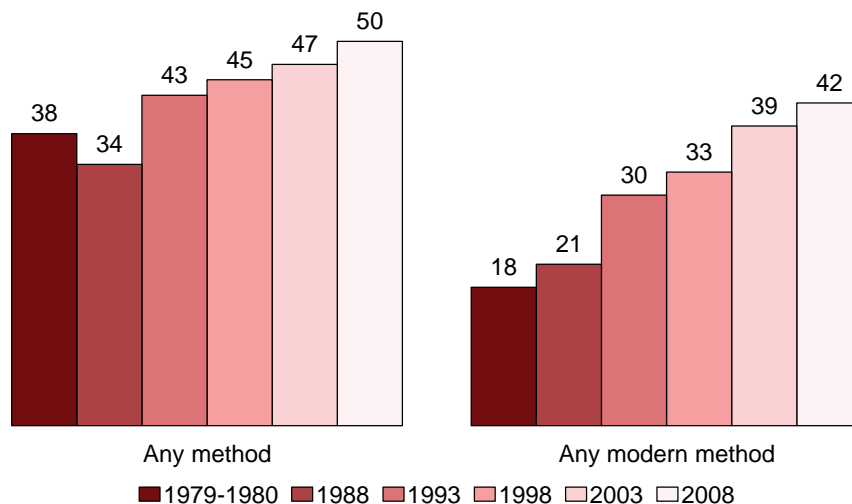
6.3   Current Use of Family Planning

The current level of contraceptive use is a measure of actual contraceptive practice at the time of the survey. It takes into account all use of contraception, whether the concern of the user is permanent or temporary cessation of childbearing or a desire to space births. The current contraceptive use rate is an important indication of the success of family planning programmes. Among married women, use of contraception increased gradually from 1979-80 until 2003. Figure 6.3 shows that current use of any contraceptive method in 2003 (25 percent) was double the levels in 1979-80, when 12 percent of married women reported using a method, and more than double for modern contraception (7 percent and 19 percent, respectively). Between 2003 and 2008, there was a slight decrease in the current use of any method, from 25 percent to 24 percent, and of any modern method, from 19 percent to 17 percent.

Figure 6.3
Percentage of Currently Married Women 15-49
Currently Using a Contraceptive Method

| 1979-1980 | 1988 | 1993 | 1998 | 2003 | 2008 |
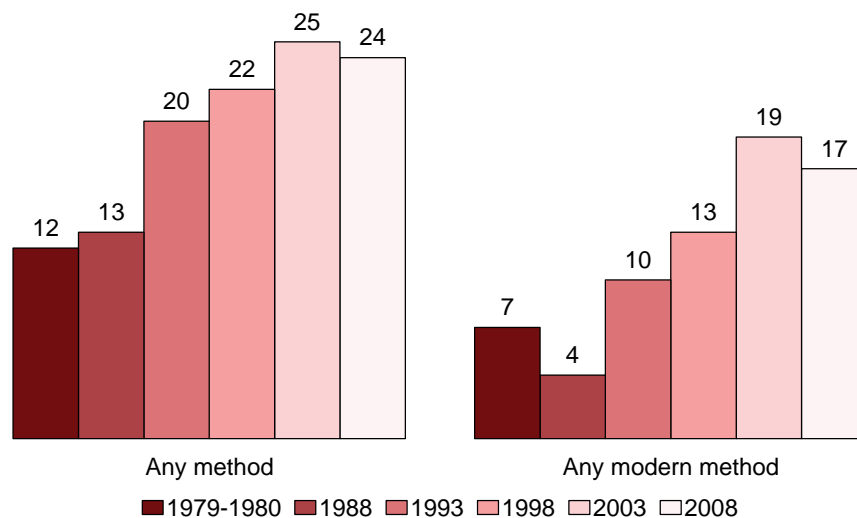
With regard to the method mix among users, starting with the 1993 GDHS, women have been more likely to use a modern method of contraception than a traditional method (Figure 6.4). Whereas the use of modern methods has continued to increase since 1993, the use of withdrawal and periodic abstinence or rhythm has declined steadily. In 1993, 8 percent of currently married women used periodic abstinence. In 2008, the proportion had declined to 5 percent. In the same period, the use of injectables tripled from 2 percent in 1993 to 6 percent in 2008.

Figure 6.4
Percentage of Currently Married Women 15-49 Currently
Using a Contraceptive Method, by Type of Method
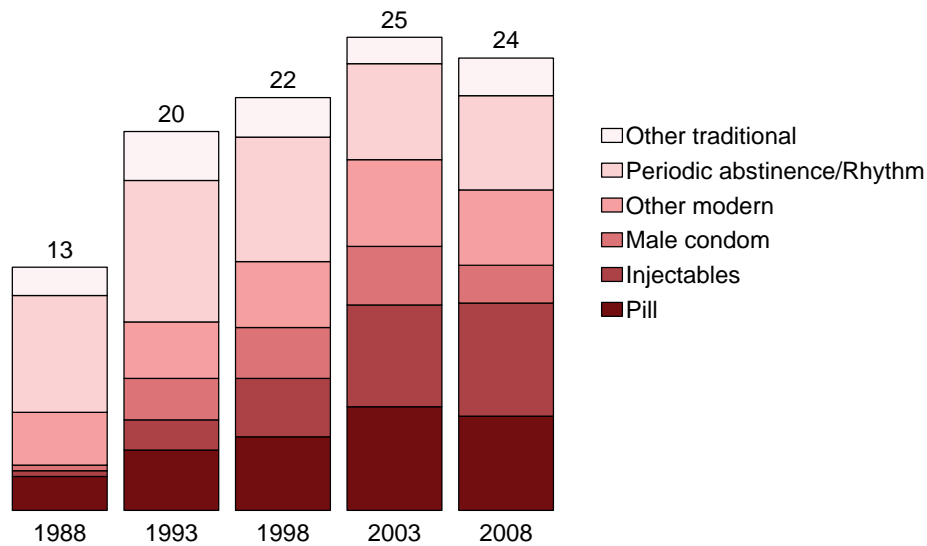
6.4   Current Use of Family Planning by Background Characteristics

Residence

At the time of the 1979-80 GFS, rural women were as likely as urban women to be using a method of contraception. However, Figure 6.5 shows that by 1988, the level of current use among urban women is twice as high as use among rural women (20 percent and 10 percent, respectively). In 1993, contraceptive use increased in both urban and rural areas, reaching 31 percent for urban women and 15 percent for rural women.

Since 1993, contraceptive use among currently married rural women has increased, while contraceptive use among urban women has showed little change, resulting in a smaller urban-rural difference. In 2008, the contraceptive prevalence rate for currently married urban women decreased from 31 percent in 2003 to 27 percent, while the rate for rural women remained constant at 21 percent.

Figure 6.5
Percentage of Currently Married Women 15-49 Currently
Using a Contraceptive Method, by Urban-Rural Residence

■1979-1980 ■1988 ■1993 ■1998 □2003 □2008
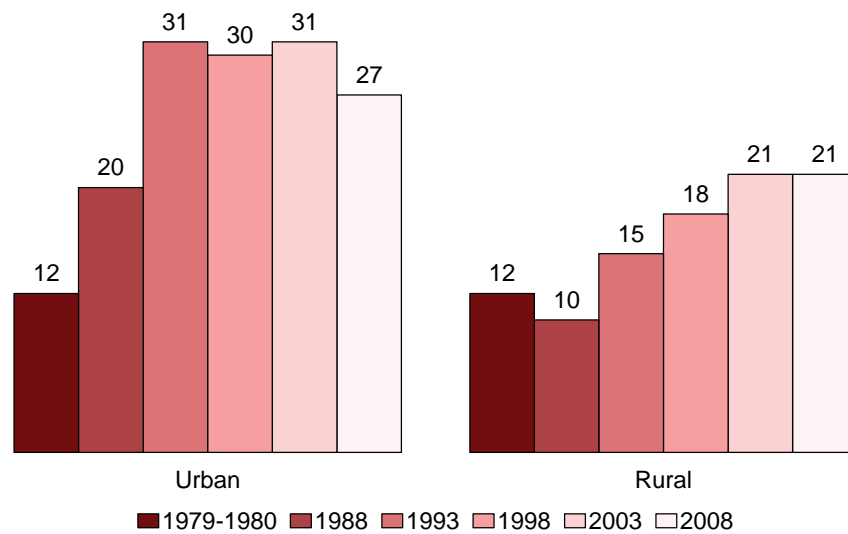
Region

The level of current use of contraception rose in all regions of Ghana between 1979-80 and 2008, although the trends fluctuate and many regions show declines between surveys at least once (Table 6.2). Throughout the period, the proportion of married women who are using a method of contraception is highest in Greater Accra. Among the southern regions, Ashanti and Brong Ahafo had the largest gains in usage, while growth in Greater Accra and Volta regions is smallest. It is interesting to note that in the Central region the level of family planning currently in use increased by more than 50 percent from 15 percent in 2003 to 23 percent in 2008. As a group, the Northern, Upper West, and Upper East regions showed modest increases in contraceptive use until 2003, after which the Northern and Upper West showed a substantial decline, while the Upper East region showed a substantial increase. For example, although the contraceptive prevalence in the Upper West declined from 26 percent in 2003 to 15 percent in 2008, contraceptive use in the Upper East region almost doubled, growing from 12 percent in 2003 to 22 percent in 2008.

Table 6.2
Percent of currently married women 15-49 who are currently using any contraceptive method, by region

Region	1979-80	1988	1993	1998	2003	2008
Western	11	8.2	26.4	18.3	28.2	19.1
Central	6	9.7	15.6	19.3	15.2	22.9
Greater Accra	24	27.2	36.8	32.2	34.0	32.6
Volta	20	14.6	25.2	21.1	23.6	28.6
Eastern	21	11.4	25.9	26.6	27.1	24.2
Ashanti	9	10.1	13.7	24.6	29.7	27.0
Brong-Ahafo	10	12.0	25.4	24.7	33.0	29.0
Northern, Upper West, Upper East	2	10.7	10.0	9.9	14.1	u
Northern	u	u	11.2	10.0	12.1	5.9
Upper West	u	u	6.6	11.9	26.3	14.7
Upper East	u	u	10.2	9.0	11.9	21.7
Total	12	12.9	20.3	22.0	25.2	23.5

u = Unknown (not available)

Women's Level of Education

Figure 6.6 shows the trends in current use of any method of contraception by level of education attained by currently married women. In general, the proportion of currently married women using contraception increased with level of education. Data presented in Figure 6.6 indicate that for the entire period of study, contraceptive use has increased among women with no education, women with primary education, and women with middle/JSS education. Among women with secondary or higher education, there was a sharp increase in current use from 29 percent to 48 percent between 1988 and 1993, after which the current use has decreased steadily to 30 percent in 2008. It must be noted that between 2003 and 2008, the contraceptive prevalence rate for women with no education, those with middle/JSS education, and those with secondary or higher education declined. For example, the proportion of women with middle school education who use contraception declined from 32 percent in 2003 to 27 percent in 2008, while among women with secondary or higher education it declined from 40 percent to 30 percent over the same period. Because of the increase in the proportion of women with no education or primary education currently using contraception and the decline in contraceptive use among women with middle/JSS education or secondary or higher education, the differences in contraceptive use between women with the lowest and highest education has narrowed over the last two decades.

Figure 6.6
Percentage of Currently Married Women 15-49 Currently
Using a Contraceptive Method, by Level of Education

	No education	Primary	Middle/JSS	Secondary+
1988	9	12	17	29
1993	8	22	28	48
1998	13	20	27	42
2003	15	26	32	40
2008	14	27	27	30

■1988 ■1993 ■1998 □2003 □2008
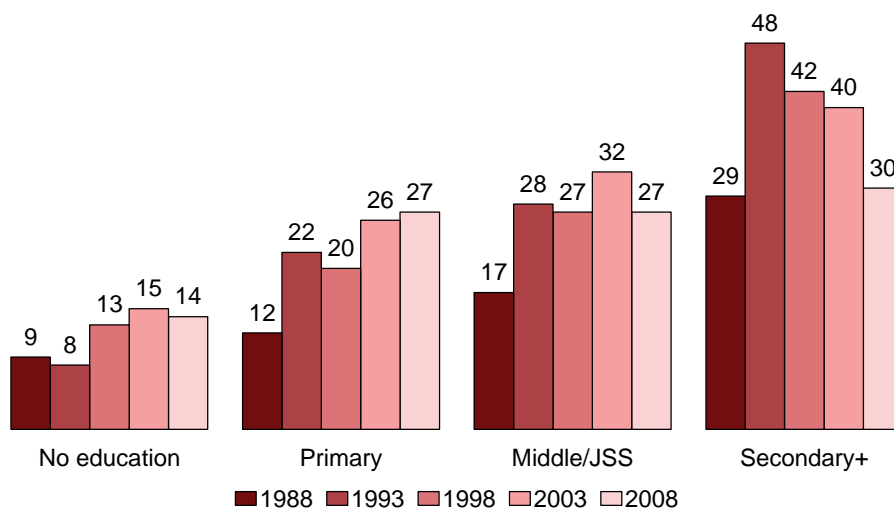
7 FERTILITY PREFERENCES

A major reason for the establishment of the Ghana National Family Planning Programme was to reduce the level of unmet need for family planning. Thus, it is important to determine the extent of women's desire to control their own fertility, whether for spacing or limiting births.

7.1 Desire for Children

The trend in the percentage of married women wanting no more children provides the clearest evidence of the profound shift in childbearing aspirations that is taking place in Ghana. Figure 7.1 shows that changes in the desire for more children are shared by both urban and rural women. At the time of the 1979-80 GFS, for example, comparatively few women (11 percent) expressed a desire to avoid future births. By 1993, the proportion of women wanting no more children had tripled for both urban and rural women. The desire for more children has stabilized since 1993, with about the same proportion of women wanting no more children between 1998 and 2008 (36-37 percent).

Figure 7.1
Percentage of Currently Married Women 15-49 Who Want No
More Children, by Urban-Rural Residence
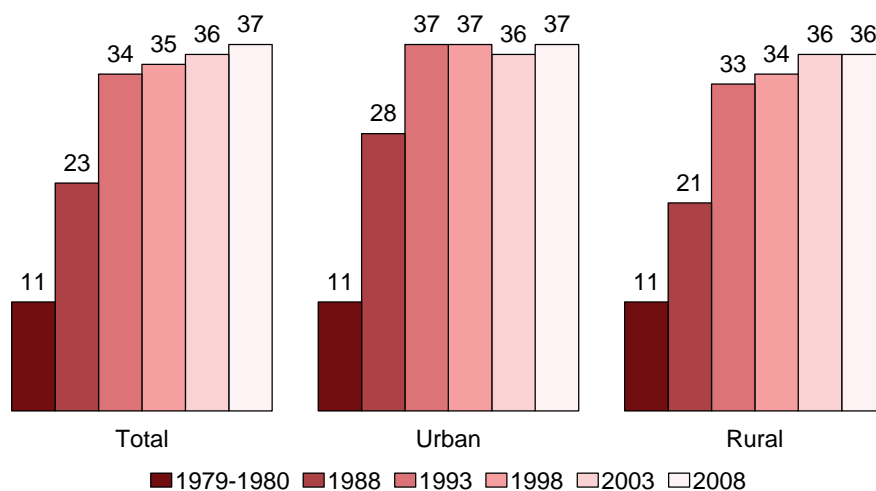
In general, an increase in the percentage of women wanting no more children was observed in all the major regions in Ghana, although the increase fluctuates between surveys (Table 7.1). By 2008, more than 40 percent of women in the Western, Central, Greater Accra, and Eastern regions said that they wanted no more children. The proportion exceeded 30 percent in all the other regions, except the Brong-Ahafo, Northern, and Upper East regions, where 26, 20, and 24 percent, respectively, reported that they wanted to avoid further childbearing.

Table 7.1
Percentage of currently married women 15-49 who want no more children, by region

Region	1979-80	1988	1993	1998	2003	2008
Western	13	16.8	31.2	30.5	37.6	44.8
Central	7	22.5	37.5	42.7	43.7	41.3
Greater Accra	19	36.1	41.3	41.5	45.7	45.7
Volta	14	29.5	43.0	43.2	45.6	39.0
Eastern	11	28.8	38.8	39.9	46.7	46.7
Ashanti	11	24.3	36.7	32.5	37.1	34.9
Brong-Ahafo	15	18.0	36.2	34.5	33.5	26.1
Northern, Upper West, Upper East	u	7.0	20.6	20.2	18.3	u
Northern	4	u	17.3	17.9	15.1	20.0
Upper West	3	u	22.1	25.3	23.2	34.4
Upper East	3	u	25.0	19.9	21.9	23.8
Total	11	22.8	34.0	35.0	36.0	36.5

Note: Includes women who are sterilized or whose partner is sterilized
u = Unknown (not available)

Between the 1979-80 GFS and the 1993 GDHS, the proportion of currently married women who said they wanted no more children increased substantially at all educational levels. For example, Figure 7.2 shows that among women who never attended school, the proportion of women who do not want any more children increased from 22 percent in the 1988 GDHS to 32 percent in the 1993 GDHS. In general, increases with similar magnitude in the desire to limit childbearing were observed at all levels of education during the same time period. After 1993, the proportion of women who want no more children continued to increase more moderately for women in all educational levels, except for women with secondary or higher education for whom there has been a decrease. Between 2003 and 2008, the proportion of married women with primary education and those with secondary or higher education who wanted no more children decreased. The decline is most notable for women with secondary or higher education, from 37 percent to 28 percent over the last five years.

Figure 7.2
Percentage of Currently Married Women 15-49 Who Want
No More Children, by Level of Education

■1988 ■1993 ■1998 □2003 □2008
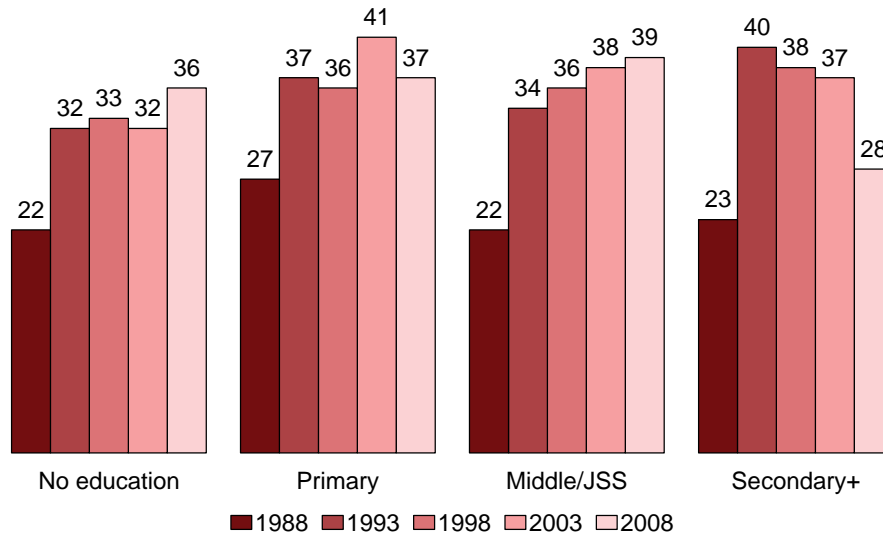
7.2   Ideal Family Size

Another indicator of changing fertility attitudes can be seen in the trends in women's ideal family size. To obtain this information, the respondents in all three surveys were asked to consider a hypothetical situation independent of their current family size and to state the number of children they would choose to have if they could start their reproductive years again.

During the period 1979-80 to 2008, there was a noticeable decline in the average family size reported by women as ideal (Figure 7.3). Overall, the average ideal family size for currently married women declined from 5.9 children in 1979-80 to 4.6 children in 2008. This entire decline occurred before the 1993 GDHS. Between 1993 and 2003, the mean ideal family size has remained relatively stable between 4.6 and 4.8 children. Between 2003 and 2008, preference for children has declined from 4.8 to 4.6 children per woman.

All the major population subgroups shared in the declines in desired family size. Figure 7.3 shows that the mean ideal family size decreased among both urban and rural women during the period 1979-80 to 1993, although the decrease was greater among urban women than rural women. In 2008, currently married women in urban areas considered an average of 4.1 children as ideal, while in rural areas the average is 5.0 children. This is a significant decline from the average of 5.9 children that both groups considered ideal at the time of the 1979-80 GFS.

Figure 7.3
Mean Ideal Family Size Among Currently Married Women
15-49, by Urban-Rural Residence
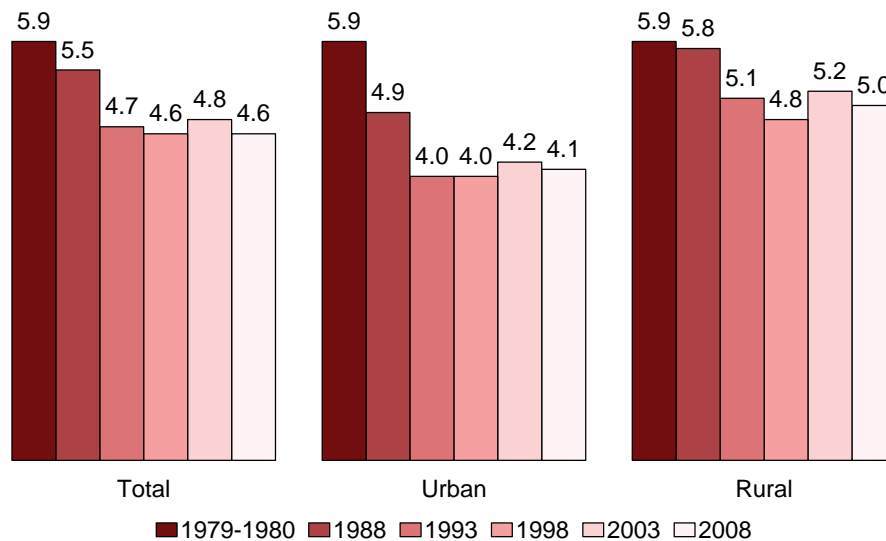
Table 7.2 indicates that, at the time of the 1979-80 GFS, the average ideal family size exceeded 5 children in all regions except Greater Accra (4.9 children). By 2003, the family size that women considered ideal exceeded 5 children only in the Northern region (7.0 children), the Upper West region (5.9 children), and the Upper East region (6.0 children). In the same year, women in Greater Accra wanted an average of 3.8 children. In most regions, the decline in ideal family size occurred before 1993. Since 1993 or 1998, the mean ideal family size has increased slightly in Western, Ashanti, and Brong Ahafo regions. Between 2003 and 2008, while most regions show a decline in mean ideal family size, the mean in Volta, Eastern, Northern, and Upper East regions increased slightly.

Table 7.2
Mean ideal family size among currently married women 15-49, by region

Region	1979-80	1988	1993	1998	2003	2008
Western	5.7	5.5	4.2	4.4	4.5	4.4
Central	6.0	5.1	4.2	4.3	4.0	3.9
Greater Accra	4.9	4.9	3.7	3.8	3.8	3.5
Volta	5.7	5.2	4.3	4.1	4.1	4.4
Eastern	5.9	5.0	4.2	4.3	4.1	4.2
Ashanti	5.8	5.1	4.5	4.3	4.8	4.5
Brong-Ahafo	6.2	5.6	4.8	4.3	4.6	4.3
Northern, Upper West, Upper East	u	8.5	6.3	6.5	6.6	u
Northern	7.7	u	6.7	7.0	7.0	7.2
Upper West	6.9	u	6.7	6.1	5.9	5.2
Upper East	6.9	u	5.5	6.1	6.0	6.2
Total	5.9	5.5	4.7	4.6	4.8	4.6

u = Unknown (not available)

Figure 7.4 shows that the family size women consider ideal decreased sharply for all levels of education. There was a decline in the mean ideal family size for all levels of education prior to 1993. This was followed by a period of slight increase from 1993 to 2008. Along with the overall decline, the differentials in the mean ideal family size by level of education throughout the period widened. In 2008, the average ideal family size reported by women who never attended school was 2.5 children higher than the ideal family size among women who had attended secondary or higher education.

Figure 7.4
Mean Ideal Family Size Among Currently Married Women
15-49, by Level of Education

No education: 6.5, 5.6, 5.5, 5.9, 6.0
Primary: 5.3, 4.5, 4.4, 4.5, 4.5
Middle/JSS: 4.7, 4.0, 4.0, 4.1, 4.0
Secondary+: 4.1, 3.7, 3.5, 3.6, 3.5

■1988 ■1993 ■1998 □2003 □2008
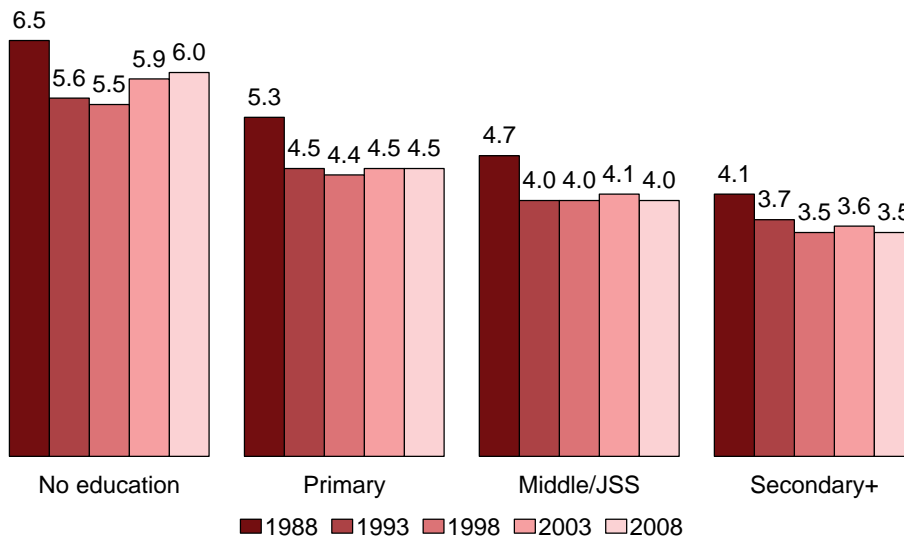
8   CHILD HEALTH INDICATORS

Improving the health of children has been a continuing goal of Ghana's national health programmes. Results from the five population surveys can be used to assess the progress being made in improving the health of young children.

8.1   Early Childhood Mortality

The mortality level of a society is closely linked to the health and well-being of the population. Of all mortality measures, infant and child mortality are seen as among the most important indications of how well a society meets the needs of its people.

Although current levels of both infant and child mortality in Ghana remain unacceptably high, the survey results show that progress has been made in reducing the levels of both infant and child mortality. Figure 8.1 documents an overall downward trend in mortality levels among young children. It shows that in the five years preceding the 1988 GDHS, 77 of every 1,000 babies born alive died in the first year of life. By the 2003 GDHS, this rate had dropped to 64 deaths per 1,000 live births and by the 2008 GDHS to 50 deaths per 1,000 live births.

Under-five mortality levels also improved, falling from 155 deaths per 1,000 live births in 1988 to 111 deaths per 1,000 in 2003 and further to 80 deaths per 1,000 live births in 2008. The rapid decline in childhood mortality may be the result of more effective control of infectious and parasitic diseases that are the main causes of under-five mortality. It should be noted, however, that the decline in both infant mortality and under-five mortality levelled off between the 1993 and 2003 GDHS.

Figure 8.1
Infant, Child, and Under-Five Mortality for the Five Years
Preceding the Survey
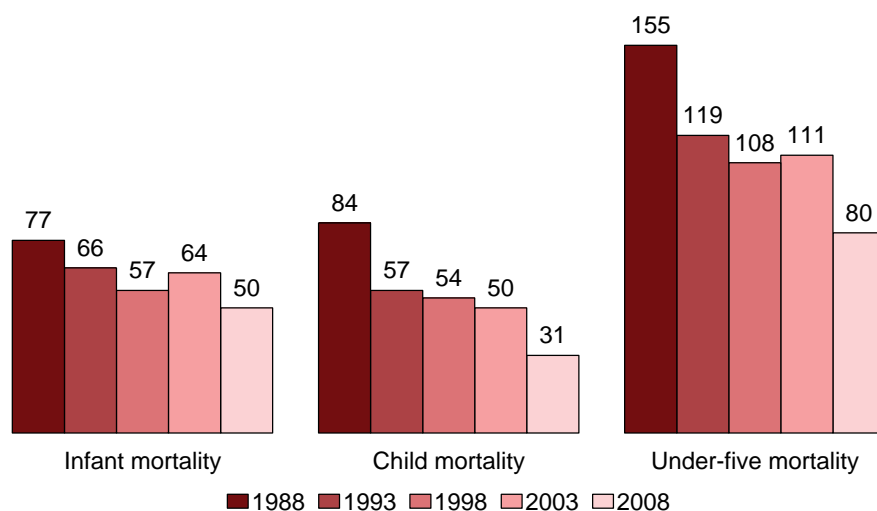
8.2   Immunization

Immunization against childhood diseases contributes to reductions in morbidity, mortality, and permanent disability among children. To combat the six major childhood diseases (tuberculosis, diphtheria, pertussis, polio, tetanus, and measles), the national immunisation programme's objectives are to achieve at least 80 percent coverage for all vaccines in 80 percent of Ghana's districts by 2005, and to attain polio-free certification by 2005.

Figure 8.2 shows the percentage of children age 12 to 23 months who are fully immunized. The data indicate that the level of vaccination coverage increased from 47 percent in 1988 to 79 percent in 2008. The figure also shows that coverage levels rose in both urban and rural areas during the same period. Coverage in rural areas has grown much faster than in urban areas, making the urban-rural differences disappear in 2008.

Figure 8.2
Percentage of Children 12-23 Months Who Are Fully
Immunized, by Urban-Rural Residence
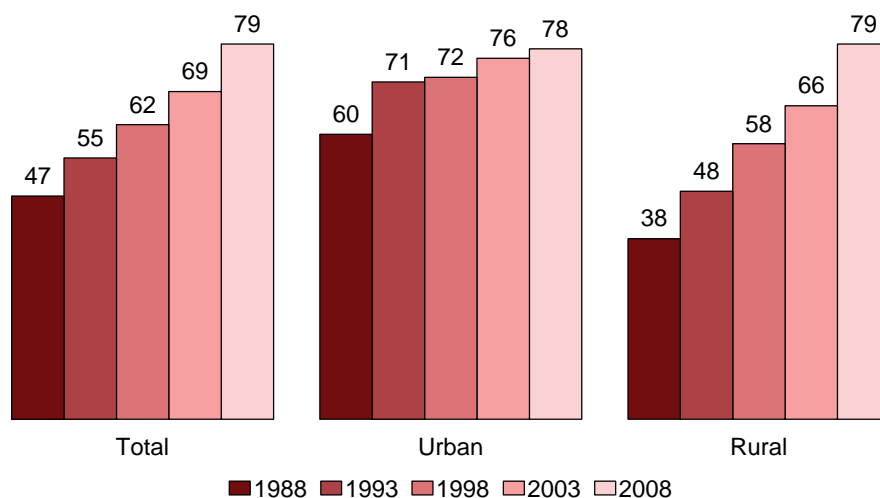
Figure 8.3 shows that while the positive association between immunization rates for young children and the mother's level of education persists, gains in coverage levels among children of mothers with no education or with primary education has resulted in narrowing the gap in immunization coverage between children of less educated mothers and those of mothers with higher education. It must be noted that immunization coverage increased over the last five years for children of mothers at all education levels, except for children of mothers with secondary or higher education for whom coverage has decreased over the same period.

Figure 8.3
Percentage of Children 12-23 Months Who Are Fully
Immunized, by Level of Education
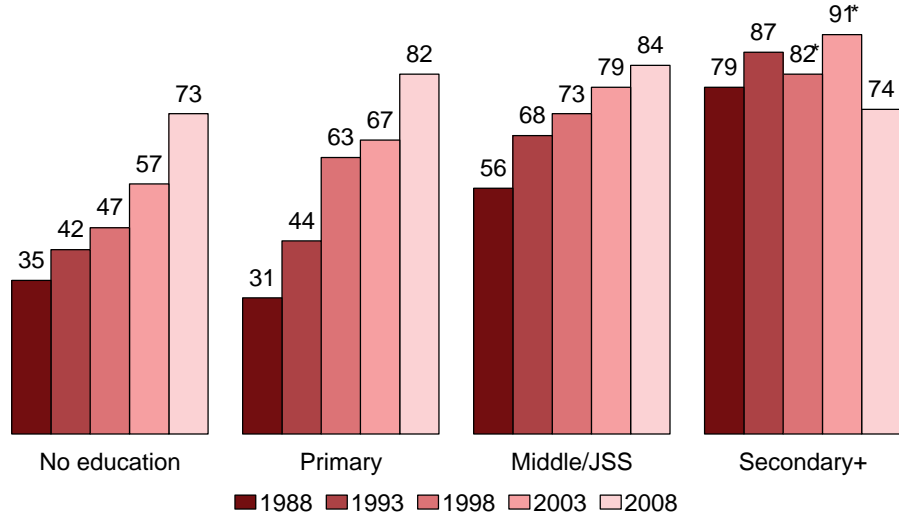
* Based on 25-50 unweighted cases

8.3   Treatment of Childhood Diseases

Dehydration associated with severe diarrhea is recognized as a major cause of morbidity and mortality among young children. It is preventable by the early administration of rehydration solutions. Typically, rehydration solution is prepared from pre-packaged oral rehydration salts (ORS); however, it may also be made at home from sugar, salt, and water—recommended home fluids (RHF).

Figure 8.4 shows that for more than four in ten children (44 percent) under age three who had diarrhoea in the two weeks preceding the survey, advice or treatment was sought from a health facility/provider, an increase from 39 percent in 2003. The percentage of children who received no treatment varied between 8 and 14 percent in the 1993, 1998, and 2008 GDHS surveys. (The 1988 GDHS data are excluded from Figures 8.3, 8.4, and 8.5 because the questions in the survey were asked differently and the data are not comparable.) Among children who were treated, there was a steady increase in the proportion receiving ORS, from 29 percent in 1993 to 46 percent in 2008.

The use of recommended home fluids to treat children with diarrhoea was about the same in 1993, 2003, and 2008 (13-14 percent). The proportion of children who received RHF in the 1998 GDHS (3 percent) is substantially lower than that reported in the other two surveys. This finding should be interpreted with caution because respondents in the 1998 GDHS provided only spontaneous responses about RHF, while in the 1993, 2003, and 2008 GDHS surveys respondents were asked directly whether they had provided this type of treatment to their sick child.

**Figure 8.4
Among Children Under Three Who Had Diarrhea in the
Two Weeks Preceding the Survey, Percentage Who
Received Various Treatments**

■Taken to health facility ■Received ORS ■Received RHF □No treatment

ORS = Oral rehydration salts
RHF = Recommended home fluids
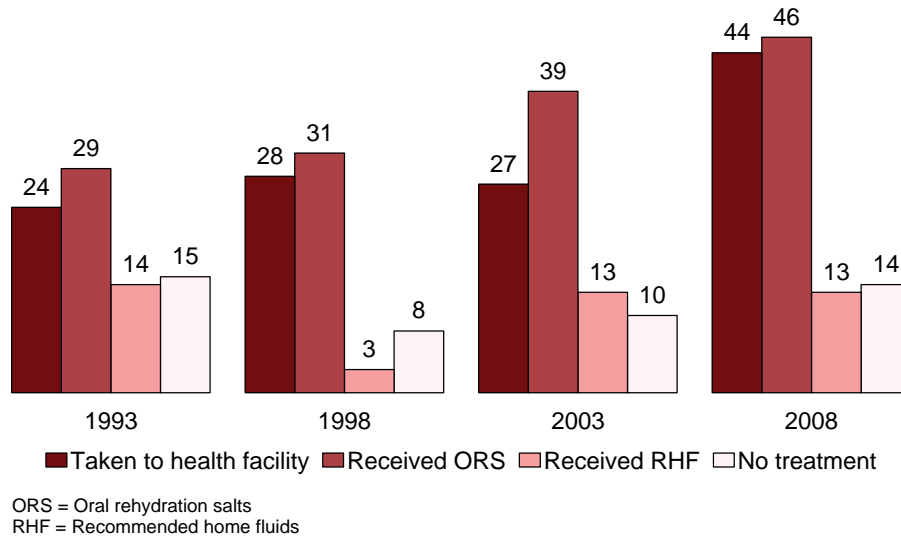
Malaria is endemic to Ghana and is among the most common causes of morbidity among children. To obtain an indication of the approaches used to treat malaria in young children, mothers were asked whether their child had a fever in the two weeks before the survey. If the response was yes, they were asked what they had done to treat the fever. In 2005, the country changed its Anti-Malaria Drug Policy due to emergence of chloroquine-resistant strains of the malaria parasite common in Ghana. Guided by criteria and recommendations from the WHO, Ghana adopted Artesunate-Amodiaquine, an Artemisinin-based Combination Therapy (ACT) as the drug of choice for the treatment of uncomplicated malaria across the country. However, an analysis of treatment trends is not relevant or meaningful because malaria treatment policy and protocols have changed dramatically in Ghana (see Chapter 10 for more information on Malaria).

The 1993, 1998, and 2008 GDHS surveys obtained information on the prevalence of cough with rapid breathing and the treatment of these symptoms of acute respiratory infection (ARI) in young children. Treatment for symptoms of ARI was not available from the 2003 data. Figure 8.5 shows that the proportion of children with symptoms of ARI taken to a health facility or provider increased from 39 percent in 1993 to 57 percent in 2008. The percentage of children receiving no treatment remained constant at 15 percent between 1993 and 2008. During the same period, the proportion who received an antibiotic almost doubled, growing from 14 percent in 1993 to 26 percent in 2008.

**Figure 8.5
Among Children Under Three Who Had Symptoms of ARI
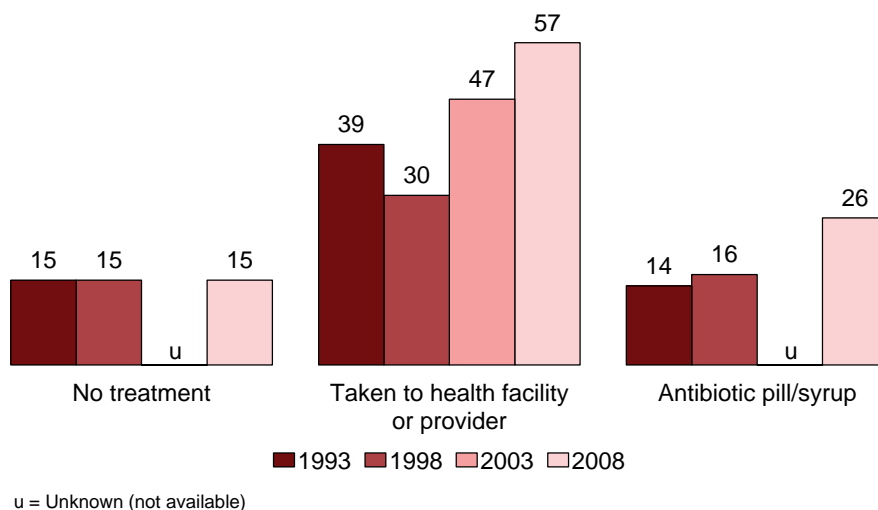in the Two Weeks Preceding the Survey, Percentage Who
Received Various Treatments**

| 1993 | 1998 | 2003 | 2008 |

u = Unknown (not available)

8.4   Nutritional Status of Children

Nutritional status is an objective indicator of children's overall health and well-being. Childhood undernutrition results from prolonged and improper treatment of illness and inadequate food intake. Undernourished children are at greater risk of dying than well-nourished children.

To assess the nutritional status of children, DHS surveys obtained measurements of children's height and weight. Children whose height-for-age is more than two standard deviations below the median of an international reference population are described as *stunted,* and those with a weight-for-height index more than two standard deviations below the median for the reference group are referred to as *wasted*.

It must be noted that the 2008 GDHS analysis is based on the new WHO child growth reference standards, while all the earlier surveys used the older National Centre for Health Statistics (NCHS) reference. In addition, the 1988, 1993, and 1998 GDHS surveys restricted the collection of anthropometric measurements to children born to women who were interviewed with the Woman's Questionnaire and who are not representative of all children in the household. The questionnaire excluded children whose mothers were not in the household (either because their mothers did not live in the household or because they had died), children whose mothers were not eligible for the individual interview (i.e., under age 15 or over age 50), and children whose mothers did not complete an individual interview. To overcome these biases, the 2003 and 2008 surveys included height and weight measurements of all children born in the five years preceding the surveys and listed in the Household Questionnaires, irrespective of the interview status of their mother.

To compare trends in nutritional status over the past two decades, data collected in the earlier surveys were re-calculated according to the new WHO child growth standards but restricted to children born to women interviewed with the Women's Questionnaire and living with an interviewed mother.

Figure 8.6 shows trends in nutritional status for children under age 5. The data show that stunting has declined from 34 percent in 1988 to 28 percent in 2008. The proportion of children who are too thin for their height has fluctuated but generally holds steady at 9 percent. Overall, the proportion of children who are underweight has dropped substantially, from 23 percent to 14 percent over the past 2 decades, and conversely, those who are overweight have increased from 1 percent to 5 percent.

Figure 8.6
Trends in Nutritional Status of Children under Five Years
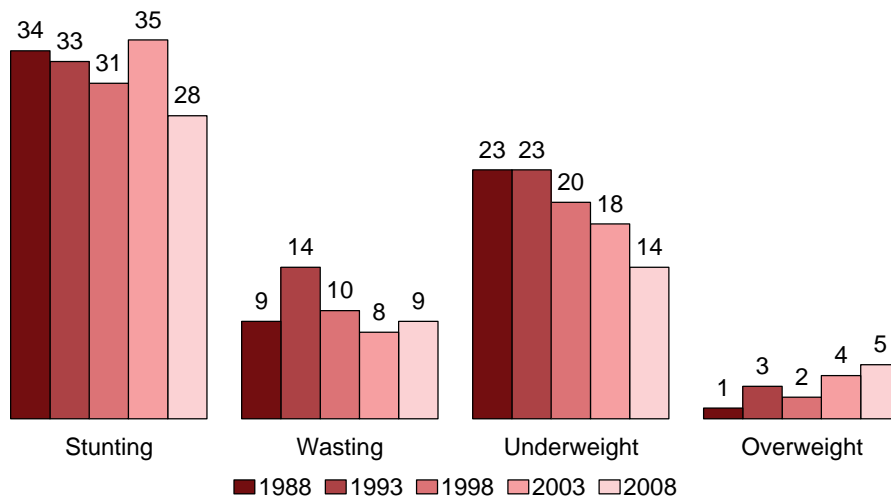
Note: Based only on children whose mothers were interviewed

9   MATERNAL CARE

The survival chances of children are improved if mothers use maternity care services, particularly antenatal and delivery care. There is overwhelming evidence to support the benefits of the use of these health services for the mother as well as the child.

9.1   Antenatal Care

Antenatal care involves a variety of preventive interventions, including tetanus toxoid immunizations, nutrition education, and postpartum family planning. It also offers the opportunity for health care providers to identify and monitor women who meet known risk criteria and to detect and manage pre-existing and new problems.

Figure 9.1 indicates that the vast majority of Ghanaian women receive at least some antenatal care, mostly from a health professional other than a doctor. The figure shows recent gains in antenatal care coverage, after a period of little change between 1988 and 1993. These gains were realized among both urban and rural women. Between 1988 and 2003, rural women were less likely to receive antenatal care than urban women. For example, in 2003, the proportion of rural births for which the mother received no care during pregnancy was 10 percent, compared with 1 percent for urban births. However, between 2003 and 2008, there has been a drastic improvement in antenatal coverage in rural areas. In 2008, only 5 percent of women in rural areas received no antenatal care compared with 1 percent in urban areas.

Figure 9.1
Percentage of Women 15-49 with a Live Birth in the Three
Years Preceding the Survey Who Received No Antenatal Care
for the Most Recent Birth, by Urban-Rural Residence
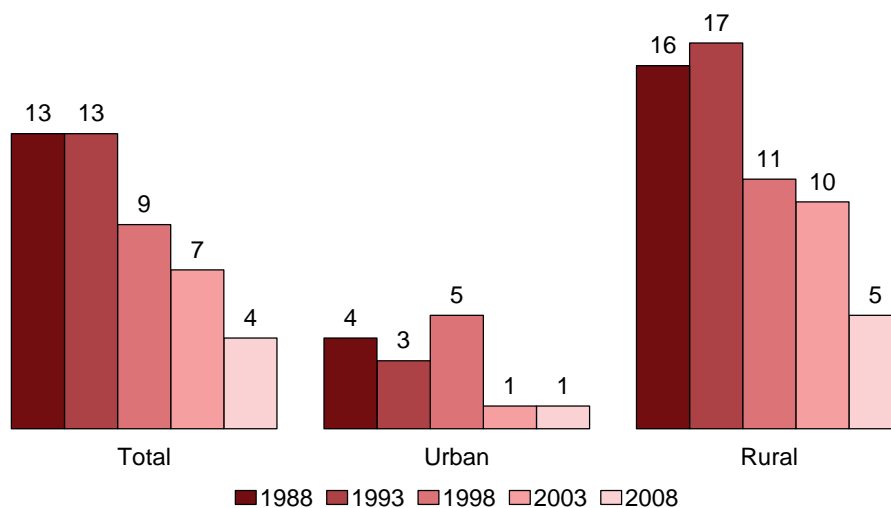
Most women who receive antenatal care see a health professional. Figure 9.2 shows that in both urban and rural areas, the majority of women received antenatal care from health professionals other than doctors. In the 1988, 1993, and 1998 GDHS surveys, "other health professional" consisted of a nurse or midwife. In the 2003 and 2008 GDHS, auxiliary midwife was added to this group, and in 2008 community health worker was also added. Throughout the period 1988 to 1998, urban women were increasingly likely to receive antenatal care from a doctor. At the same time, rural women were

increasingly likely to receive antenatal care from a health professional other than a doctor. From 1988 to 1998, the proportion of women receiving antenatal care from a trained health professional other than a doctor in urban areas declined slowly, as reliance on doctors for antenatal care increased. From 1998 to 2008, the proportion of urban women receiving antenatal care from a health professional other than a doctor increased from 48 to 63 percent, and use of a doctor declined from 47 percent to 35 percent.

Figure 9.2
Percentage of Women 15-49 With a Live Birth in the Three Years Preceding the Survey Who Received Antenatal Care from a Doctor or Other Health Professional, for the Most Recent Birth, by Urban-Rural Residence
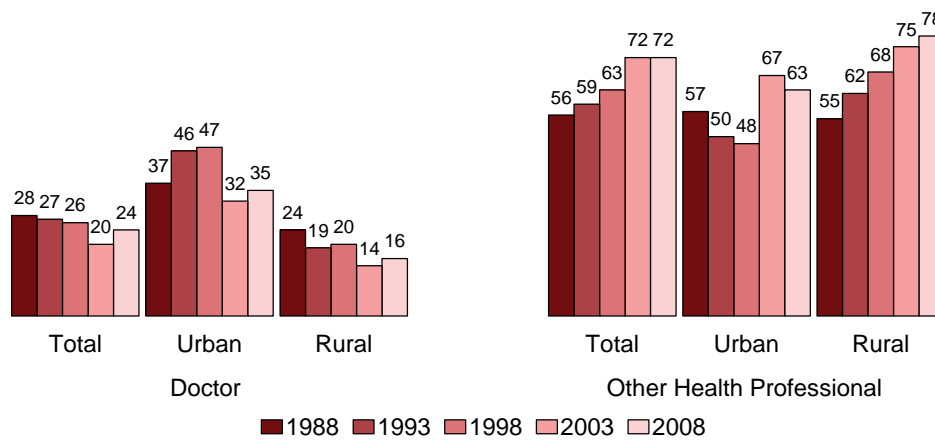
'Other Health Professional' refers to the following categories: in 1988/1993/1998: nurse or midwife; in 2003: nurse, midwife or auxiliary midwife; in 2008: nurse, midwife, auxiliary midwife, or community health worker.

The more educated a mother is the more likely it is that she will receive at least some antenatal care and the more likely it is that a doctor will provide the care she receives (Figure 9.3). In 2008, 50 percent of women with secondary education or higher sought antenatal care from a nurse/midwife, while 48 percent received the care from a doctor. The proportion of births for which the mother received antenatal care from a nurse/midwife showed significant increases for all levels of education between 1988 and 2008. Across all education levels, there was a general shift from use of a doctor to use of a nurse/midwife for antenatal care services.

**Figure 9.3
Percentage of Women 15-49 with a Live Birth in the Three
Years Preceding the Survey Who Received Antenatal Care
from a Doctor or a Nurse/Midwife, for Most Recent Birth,
by Level of Education**

Doctor   Nurse/Midwife

■1988 ■1993 ■1998 ■2003 □2008
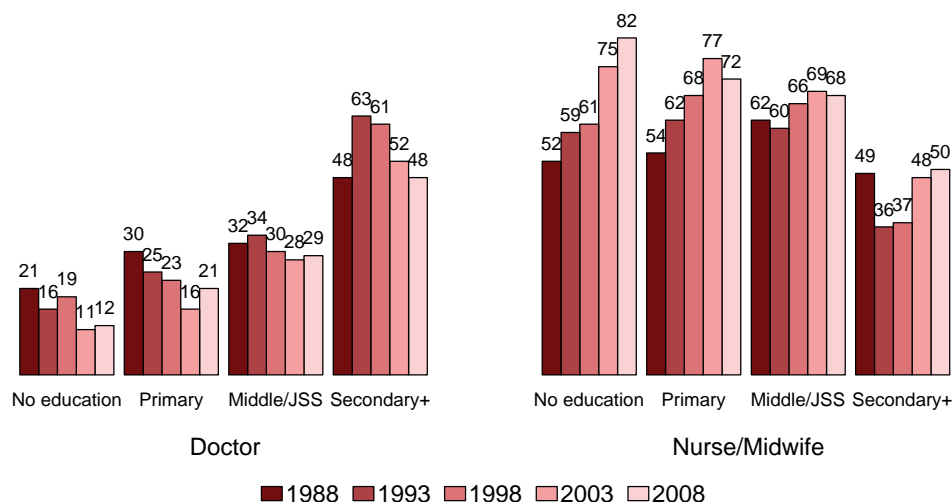
9.2   Attendance during Childbirth

When skilled providers have adequate access to medical facilities to attend women during labour and childbirth, they are in a better position to manage any complications that may arise. This can substantially reduce the risk of illness and death for both the mother and the child.

Overall, women reported having some assistance at delivery for more than 90 percent of the births reported in the five GDHS surveys. Figure 9.4 shows that fewer than half of the births during the three-year period before the 1988 GDHS were assisted by a doctor (7 percent) or a trained health professional other than a doctor (34 percent). In the 1988, 1993, and 1998 GDHS surveys, "other health professional" consisted of a nurse or midwife. In the 2003 and 2008 GDHS, auxiliary midwife was added to this group, and in 2008, community health worker was also added. The proportion of births with medical assistance by either a doctor or other health professional increased from 41 percent (7 percent by a doctor and 34 percent by another type of health professional) in the 1988 GDHS to 61 percent (11 percent by a doctor and 50 percent by another type of health professional) in 2008. Urban births are more likely to be assisted by health professionals than rural births. In 2008, 86 percent of births in urban areas were attended at birth by a medical professional compared with 45 percent in rural areas. In both urban and rural areas, births attended by other health professionals increased much more than births attended by doctors.

Figure 9.4
Percentage of Women 15-49 with a Live Birth in the Three Years Preceding the Survey Who Were Assisted at Delivery by a Doctor or Other Health Professional, for the Most Recent Birth, by Urban-Rural Residence


■1988 ■1993 ■1998 □2003 □2008
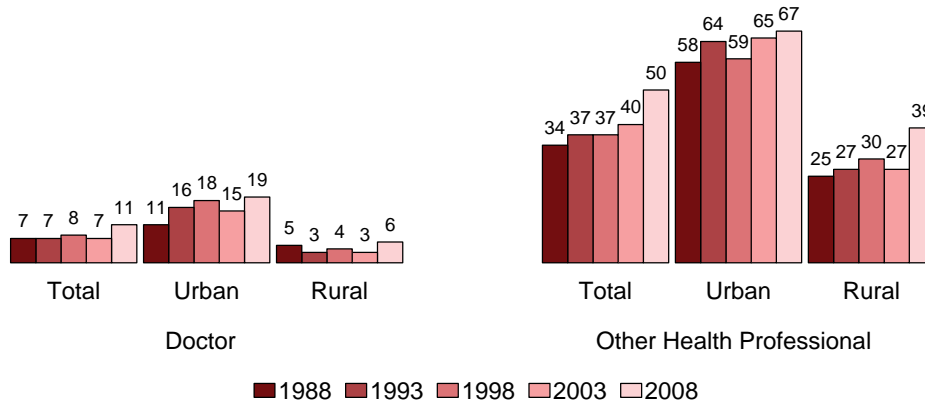
'Other Health Professional' refers to the following categories: in 1988/1993/1998: nurse or midwife; in 2003: nurse, midwife or auxiliary midwife; in 2008: nurse, midwife, auxiliary midwife, or community health worker.

Figure 9.5 shows that education is an important factor in determining whether a health professional provides assistance at the results of all four surveys indicate that the more years of schooling a woman has, the more likely she is to have a health professional present at childbirth. In 2008, 38 percent of births to women with no education were assisted by a health professional (5 percent by a doctor and 33 percent by another type of health professional) compared with 91 percent of births to women with secondary or higher education (24 percent by a doctor and 67 percent by another type of health professional).

Figure 9.5
Percentage of Women 15-49 with a Live Birth in the Three Years Preceding the Survey Who Were Assisted at Delivery by a Doctor or Other Health Professional, for the Most Recent Birth, by Level of Education

■1988 ■1993 ■1998 □2003 □2008
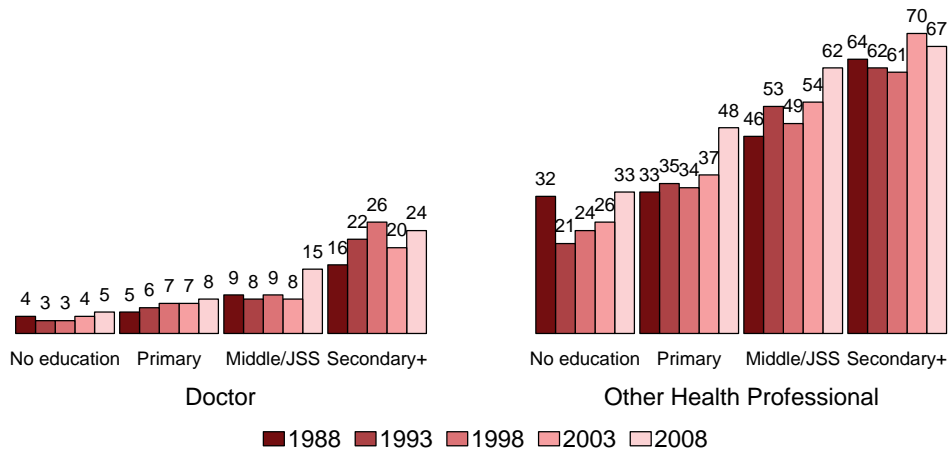
'Other Health Professional' refers to the following categories: in 1988/1993/1998: nurse or midwife; in 2003: nurse, midwife or auxiliary midwife; in 2008: nurse, midwife, auxiliary midwife, or community health worker.

9.3   Tetanus Toxoid Injections

Neonatal tetanus is one of the leading causes of death during the first month of life. The World Health Organization recommends that all women receive two tetanus toxoid injections during their first pregnancy, a third dose 6 to 12 months later or during the next pregnancy, a fourth dose at least a year later or during the subsequent pregnancy, and a fifth dose at least one year later or during the subsequent pregnancy. The fifth dose is thought to provide life-long protection. Tetanus toxoid is thus a fundamental component of effective antenatal care.

Figure 9.6 shows the proportion of births for which the mother received at least one tetanus toxoid injection during pregnancy. Between the 1988 GDHS and the 2008 GDHS, the proportion of births for which the mother received at least one injection increased steadily from 71 percent to 88 percent. In general, urban women were more likely to receive a tetanus toxoid injection than rural women. For example in 2008, mothers received at least one dose of tetanus toxoid for 92 percent of urban births compared with 85 percent of rural births.

Figure 9.6
Percentage of Women 15-49 with a Live Birth in the Three Years Preceding the Survey Who Received at Least One Tetanus Toxoid Injection During Pregnancy, for the Most Recent Birth, by Urban-Rural Residence

Bar chart showing percentages:

Residence	1988	1993	1998	2003	2008
Total	71	77	81	84	88
Urban	83	90	87	93	92
Rural	67	72	79	79	85
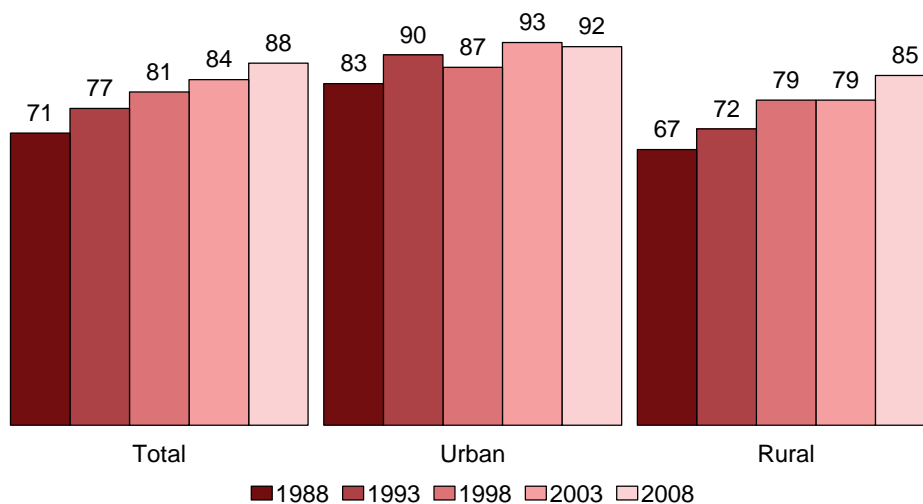
10   MALARIA

Malaria is hyperendemic (exhibiting a high and continued incidence) in Ghana and constitutes one of the leading causes of morbidity and mortality, especially among pregnant women and children under the age of five. The Ghana Ministry of Health estimates that 3 to 3.5 million cases of suspected malaria are reported each year by public health facilities, representing 30-40 percent of outpatient attendance. Of this figure, more than 900,000 are children under the age of five. Malaria also accounts for about 61 percent of hospital admissions of children under five years and 8 percent of admissions of pregnant women. It is estimated that malaria accounts for 22 percent of under-five mortality and 9 percent of maternal deaths (The President's Malaria Initiative, 2007).

10.1   ITN Ownership

Children less than five years of age and pregnant women are considered the most vulnerable groups affected by malaria. Use of bed nets, especially insecticide-treated bed nets (ITNs), is important in controlling vector-borne diseases such as malaria. The nets create a physical barrier between humans and the female Anopheles mosquito, which feeds primarily at night. Treating the bed nets with an insecticide that leaves a residual effect has the added advantage of repelling and/or killing the mosquitoes. This leads to a reduction in the vector population and, eventually, to termination of their ability to transmit malaria. The Ghana Health Service, therefore, promotes the ownership and use of insecticide-treated mosquito nets, particularly the long-lasting (factory-treated), insecticide-treated nets, as one of the primary interventions for reducing malaria transmission and morbidity in the country. It has adopted a multi-pronged approach for the distribution of the ITNs.

More than four in ten (45 percent) households in Ghana own a mosquito net (treated or untreated), while one-third (33 percent) own at least one insecticide-treated net (ITN). Figure 10.1 shows that household ownership of mosquito nets increased substantially between the 2003 GDHS and the 2008 GDHS. During the five-year period, ownership of a mosquito net (treated or untreated) increased from 18 to 45 percent, and household ownership of more than one net increased from 6 to 19 percent. In 2008, 33 percent of households owned at least one ITN, compared with 3 percent of households in 2003. These increases demonstrate remarkable improvements in Ghana's bed-net distribution programmes in just five years.

Figure 10.1
Trends in Household Ownership of Mosquito Nets
GDHS 2003 and GDHS 2008
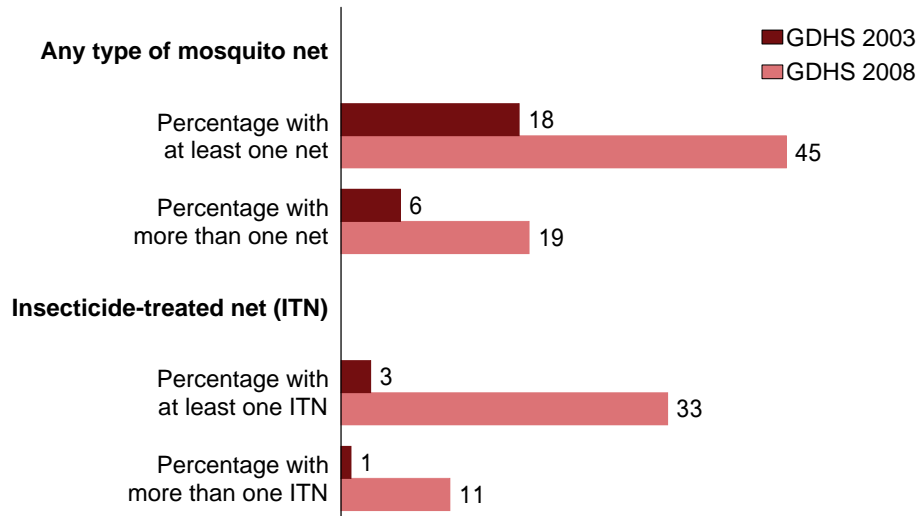
10.2 ITN Use by Children and Pregnant Women

Children and pregnant women in Ghana have been targeted for bed net distribution. Age is an important factor in determining levels of acquired immunity against malaria. For the first six months of life, antibodies acquired from the mother during pregnancy protect children from malaria. This immunity is gradually lost as children start to develop their own immunity over a period of time. Unlike immunity to some other infectious diseases, immunity against malaria is not permanent, so ongoing protection requires the regular use of protective interventions.

Pregnant women are also one of the groups most vulnerable to malaria. In some cases, malaria infections remain asymptomatic but may lead to the development of anaemia. The disease adversely affects birth outcomes and can lead to spontaneous abortion, pre-term labour, low birth weight, and stillbirth. Pregnancy itself affects the prognosis for malaria in women because it enhances progression to the severe form of the disease.

The use of ITNs confers some protection if the child or the pregnant woman uses the net on a regular basis. In determining ITN usage, only individuals reported to have slept under a net the night before the survey were considered users of ITNs.

In 2008, 41 percent of children under age five slept under a mosquito net (treated or untreated), and 28 percent slept under an ITN. Among pregnant women, 32 percent slept under a mosquito net, and 20 percent slept under an ITN the night before the survey.

The increase in the use of mosquito nets by women and children is consistent with the overall increase in ownership of ITNs. Figure 10.2 shows that the proportion of children under age five, in all households, who slept under an ITN the night before the survey has increased 24 percentage points, from 4 percent in 2003 to 28 percent in 2008. Similarly, the proportion of pregnant women, in all households, who slept under an ITN the night before the survey, has increased 17 percentage points, from 3 percent in 2003 to 20 percent in 2008.

Figure 10.2
Trends in Use of Mosquito Nets by Children
under Five and Pregnant Women (Any Net and ITNs)
GDHS 2003 and GDHS 2008

Slept the night before the survey under any type of mosquito net (treated or untreated)

Children under age 5: 15, 41
Pregnant women: 10, 32

Slept the night before the survey under Insecticide-treated net (ITN)

Children under age 5: 4, 28
Pregnant women: 3, 20

■ GDHS 2003 ■ GDHS 2008
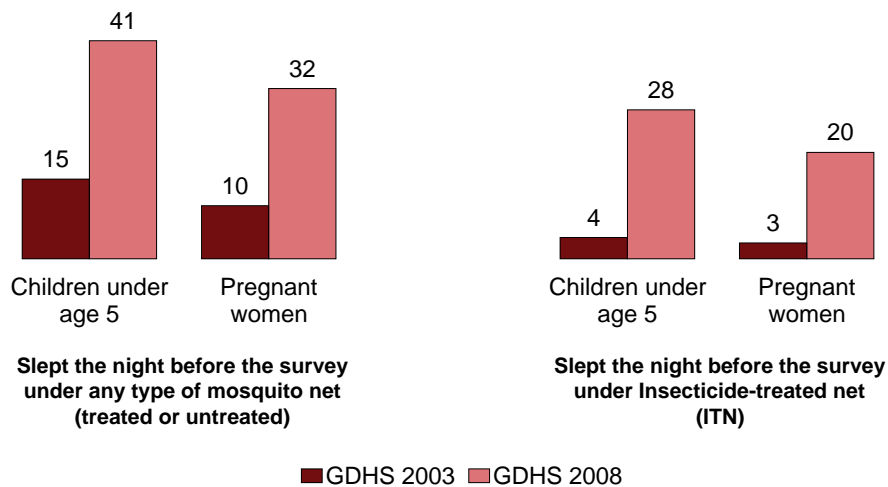
10.3   Intermittent Preventive Treatment of Malaria in Pregnancy

In 2003, the Ministry of Health and the Ghana National Malaria Control Programme adopted the Intermittent Preventive Treatment (IPT) intervention with sulphadoxine-pyrimethamine (SP) as one of the interventions to prevent malaria in pregnancy. SP has several brand names, including Fansidar and Malafan. The IPT using SP/Fansidar/Malafan was introduced as a replacement for chloroquine prophylaxis because of the high levels of chloroquine resistance. The Ministry of Health and the Ghana National Malaria Control Programme recommend that pregnant women receive at least two doses of SP/Fansidar/Malafan during pregnancy as IPT against malaria.

The 2008 GDHS data show that more than half (56 percent) of women with a birth in the two years preceding the survey who used IPT[1] received SP/Fansidar/Malafan during an antenatal visit for the most recent pregnancy, while more than four in ten (44 percent) reported receiving the recommended two or more doses of SP/Fansidar/Malafan during pregnancy, at least one of which was during an antenatal care visit.

In 2003, 12 percent of pregnant women with a live birth in the five years preceding the survey reportedly received IPT treatment with chloroquine during their most recent pregnancy, and only 1 percent received the recommended two or more doses of SP/Fansidar/Malafan, at least one of which was during an antenatal care visit.

This indicates a significant increase (from 1 percent to 44 percent) in the percentage of women who took two or more doses of SP/Fansidar/Malafan during pregnancy as part of antenatal care over the last five years, indicating that there have been great improvement and success in the implementation of IPT for malaria in Ghana.

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[1] Intermittent Preventive Treatment (IPT) during pregnancy is preventive treatment with a dose of sulfadoxine-pyrimethamine (SP/Fansidar/Malafan) at each scheduled antenatal visit after the first trimester, but not more frequently than once a month.

However, caution should be used in interpreting the data. In 2003, women were asked about malaria IPT for the most recent pregnancy for live births in the preceding five years, although in 2008 they were asked about live births in the preceding two years. The new IPT policy promoting replacement of chloroquine with SP/Fansidar/Malafan was adopted and implemented in 2003. Pregnant women may have not been aware that the antimalarial drug they took contained SP/Fansidar/Malafan; hence they may have under-reported the use of IPT for malaria in the earlier survey.

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APPENDIX A: DATA SOURCES

1979-80 Ghana Fertility Survey (GFS) – The GFS was conducted by the Central Bureau of Statistics under the auspices of the World Fertility Survey programme. The survey covered a nationally representative, self-weighting sample of households. During the 1979/80 GFS, interviews were completed with 6,001 households and 6,125 eligible respondents. Eligible respondents included women age 15 to 49 years.

1988 Ghana Demographic and Health Survey (GDHS) – The 1988 GDHS was the first of four surveys conducted under the auspices of the Ghana Statistical Service (formerly the Central Bureau of Statistics) as part of the international Demographic and Health Surveys programme. The sample for the survey was a nationally representative, self-weighting sample of households in which all women age 15-49 were eligible for interview. During the 1988 GDHS, interviews were completed with 4,406 households and 4,488 women.

1993 Ghana Demographic and Health Survey (GDHS) – The 1993 GDHS was the second of the surveys conducted under the auspices of the Ghana Statistical Service as part of the international Demographic and Health Surveys (DHS) programme. The sample was a stratified, self-weighting sample of households in which all women age 15-49 were interviewed. During the 1993 GDHS, interviews were completed with 5,822 households and 4,562 women.

1998 Ghana Demographic and Health Survey (GDHS) – The 1998 GDHS was the third of the surveys conducted under the auspices of the Ghana Statistical Service as part of the DHS programme. The sample was a stratified, nationally representative sample of households. All women age 15-49 in selected households were eligible for interview, and men age 15-59 from every third selected household were eligible. The three northern regions (Northern, Upper East, and Upper West) were over sampled in order to obtain adequate precision in the estimates for each of these regions despite their smaller population size relative to the other regions. Sample weights were used to adjust for the unequal probability of selection of households in different regions. Interviews were completed with 6,003 households of 4,843 women, age 15-49, and 1,546 men.

2003 Ghana Demographic and Health Survey (GDHS) – The 2003 GDHS was the fourth survey conducted under the auspices of the Ghana Statistical Service as part of the DHS programme. The sample was a stratified, nationally representative sample of households in which all women age 15-49 and all men age 15-59 were eligible for interview. Households in Brong Ahafo, Upper East, Upper West, and Northern regions were sampled at higher proportions than households in the other regions in order to provide adequate precision for estimates of indicators in these regions. Sample weights were used to adjust for the over sampling. Interviews were completed with 6,251 households of 5,691 women and 5,015 men.

2008 Ghana Demographic and Health Survey (GDHS) – The 2008 GDHS was the fifth survey conducted under the auspices of the Ghana Statistical Service as part of the DHS programme. The sample was a stratified, nationally representative sample of households in which all women age 15-49 and all men age 15-59 were eligible for interview. The 2008 GDHS utilised a two-stage sample design. Interviews were completed with 12,323 households of 4,916 women and 4,568 men.