Ghana

Demographic and Health Survey 1998

Ghana Statistical Service

DHS

Demographic and Health Surveys
Macro International Inc.

World Summit for Children Indicators: Ghana 1998

	BASIC INDICATORS	Value
Childhood mortality	Infant mortality rate (adjusted rate)	57 per 1,000
	Under-five mortality rate	108 per 1,000
Childhood undernutrition	Percent stunted	26
	Percent wasted	10
	Percent underweight	25
Clean water supply	Percent of households within 15 minutes of a safe water supply[1]	49
Sanitary excreta disposal	Percent of households with flush toilets or VIP latrines	33
Iodised salt	Percent of households using iodised salt	27
Basic education	Percent of women 15-49 with completed primary education	57
	Percent of men 15-49 with completed primary education	75
	Percent of girls 6-12 attending school	76
	Percent of boys 6-12 attending school	76
	Percent of women 15-49 who are literate	56
Children in especially difficult situations	Percent of children who are orphans (both parents dead)	0.4
	Percent of children who do not live with their natural mother	22
	Percent of children who live in single adult households	19
	SUPPORTING INDICATORS	
Women's Health		
Birth spacing	Percent of births within 24 months of a previous birth[2]	13
Safe motherhood	Percent of births with medical prenatal care	88
	Percent of births with prenatal care in first trimester	39
	Percent of births with medical assistance at delivery	44
	Percent of births in a medical facility	43
	Percent of births at high risk	52
Family planning	Contraceptive prevalence rate (any method, currently married women)	22
	Percent of currently married women with an unmet demand for family planning	23
	Percent of currently married women with an unmet need for family planning to avoid a high-risk birth	17
Nutrition		
Maternal nutrition	Percent of mothers with low BMI	11
Low birth weight	Percent of births at low birth weight (of those reporting numeric weight)	9
Breastfeeding	Percent of children under 4 months who are exclusively breastfed	36
Child Health		
Vaccinations	Percent of children whose mothers received tetanus toxoid vaccination during pregnancy	81
	Percent of children 12-23 months with measles vaccination	73
	Percent of children 12-23 months fully vaccinated	62
Diarrhoea control	Percent of children with diarrhoea in preceding 2 weeks who received oral rehydration therapy (sugar-salt-water solution)	32
Acute respiratory infection	Percent of children with acute respiratory infection in preceding 2 weeks who were taken to a health facility or provider	26

[1] Excludes surface water
[2] First births are excluded

Ghana
Demographic and Health Survey
1998

Ghana Statistical Service
Accra, Ghana

Macro International Inc.
Calverton, Maryland, USA

October 1999

The 1998 Ghana Demographic and Health Survey (GDHS) is part of the worldwide MEASURE *DHS+* Project, designed to collect data on fertility, family planning, and maternal and child health. Additional information about the 1998 GDHS may be obtained from the Ghana Statistical Service, P.O. Box 1098, Accra, Ghana (Telephone: 663578 or 665441; Fax: 667069 or 664304). Additional information about the MEASURE *DHS+* project may be obtained from Macro International Inc., 11785 Beltsville Drive, Calverton, MD (Telephone: 301-572-0200; Fax: 301-572-0999; E-mail: reports@macroint.com; Internet: http://www.macroint.com/dhs/).

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FOREWORD

The 1998 Ghana Demographic and Health Survey (GDHS) is the third survey of its kind to be carried out in Ghana, following the 1988 GDHS and the 1993 GDHS. These surveys which are part of the worldwide Demographic and Health Surveys (DHS) programme have been conducted by the Ghana Statistical Service. In keeping with the expansion of programmes in population and health, the 1998 GDHS is more extensive in its treatment of some topics. The survey is designed to furnish policy makers, planners, researchers and programme managers with factual, reliable and up-to-date information on fertility, maternal and child health indicators, and demographic trends and differentials. The survey also provides information on the knowledge of HIV/AIDS and other sexually transmitted diseases.

Information from the 1998 GDHS shows that Ghana is indeed undergoing a demographic transition, with a two-child decline in the total fertility rate over the last decade. This has been accompanied by a marked decline in infant and child mortality. Nevertheless, contraceptive use has not increased much in the most recent five years. Fear of side effects is a major reason for non-use. At the same time, the percentage of pregnancies terminated is noticeably high. It is expected that the findings in this report will raise important programmatic issues for policy makers involved in family planning and service delivery.

The Statistical Service of Ghana acknowledges the invaluable assistance of a number of agencies, institutions, organisations and individuals both local and international towards the successful completion of the 1998 GDHS. The Service is particularly thankful to the United States Agency for International Development (USAID) for funding the survey through its mission in Ghana, and to Macro International Inc. for providing technical assistance. The Service is also grateful to the Ministry of Health for providing vehicles for the fieldwork and personnel for training of the interviewers. Various government and non-government organisations provided input in finalising the questionnaires used in the survey and translating the questionnaires into the five local languages. We are grateful for the invaluable support of the survey staff, and for their tireless effort in ensuring the timely completion of the survey and this report. Last but not least, we gratefully acknowledge the co-operation of all survey respondents in making the 1998 GDHS a success.

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SUMMARY OF FINDINGS

The 1998 Ghana Demographic and Health Survey (GDHS) is a nationally representative survey of 4,843 women age 15-49 and 1,546 men age 15-59. This survey is the third in a series of Demographic and Health Surveys conducted in Ghana. The primary purpose of the 1998 GDHS is to furnish policy makers and planners with detailed information on fertility, family planning, infant and child mortality, maternal and child health, and nutrition. In addition, the survey collected information on knowledge of HIV/AIDS and other sexually transmitted diseases.

Fertility

Results from the 1998 GDHS indicate that fertility in Ghana has declined rapidly over the last decade, from over 6 births per woman in the mid-eighties to 4.6 births per woman during the last five years. Fertility has fallen recently in every age group, with fertility levels among women under age 35 declining by around 25 percent during the decade between the 1988 and 1998 surveys. Differences by place of residence are marked, with rural women having two and a half more children than urban women. Fertility is highest in the Northern Region (7.0 births per woman), and lowest in the Greater Accra Region (2.7 births per woman).

Several factors could account for this dramatic decline in fertility in Ghana. There has been an 8 percent decline in the percent of women currently in union over the last five years, from 70 percent in 1993 to 65 percent in 1998. This decline in nuptiality is most obvious in the youngest (15-29) and oldest (44-49) age groups.

There is a noticeable trend towards later marriage. The median age at marriage has risen steadily over the last two decades, from 18.7 years for women age 40-49 to 19.3 years for women age 20-24. At the same time, the proportion of women married by age 15 has declined from 11 percent among women age 40-44 to 4 percent among those currently age 15-19 years.

Although the median age at first sexual intercourse has not changed much over the last 20 years (around 17.6), recent sexual activity is markedly lower in Ghana than in several other African countries. Only two in five women were sexually active in the four weeks prior to the survey, compared with for example, 57 percent in Niger, 58 percent in Cameroon, and 63 percent in Senegal.

Age at first birth has risen in the most recent period, from 19.8 among women age 44-49 to 20.9 among women age 25-29. A more significant longer term decline is suggested by the fall in the percentage of first births occurring to women before age 18, from 30 percent in the cohort age 45-49 to 20 percent in the cohort age 20-24.

The interval between births is long in Ghana. Half of all births in Ghana occur more than three years after a previous birth. The median birth interval increased slightly in the last five years from 36 months in 1993 to 38 months in 1998. Postpartum insusceptibility is one of the factors contributing to the long birth interval. The median duration of amenorrhoea is 11 months, that of abstinence is 9 months, and that of insusceptibility is 14 months.

Over the last decade, Ghanaian women seem to have narrowed the gap between desired and achieved family size. The mean ideal number of children declined from 5.3 in 1988 to 4.4 in 1993 and 4.3 in 1998 (while the total fertility rate declined from 6.4 in 1988, to 5.5 in 1993 and 4.6 in 1998). Nevertheless, women in Ghana continue to revise downward the number of children they would like to have. Thirty-five percent

of women either want no more children or have been sterilised. If all unwanted births were prevented, the total fertility rate would fall to 3.7 births per woman.

Unlike earlier demographic and health surveys conducted in Ghana, the 1998 GDHS gathered complete pregnancy histories from women and hence provides information on pregnancy outcomes. Twelve percent of all pregnancies that occurred in the ten years preceding the survey did not end in a live birth, and one in four pregnancies to women in the 15-19 age group was lost before term. Pregnancy losses are especially high among urban women age 15-19, with about two in five having experienced a pregnancy loss.

Family Planning

Knowledge of family planning is very high in Ghana, with 93 percent of currently married women having heard of at least one modern method of contraception. In addition, about eight in ten women know where to obtain a modern method of family planning. Mass media are important sources of information on family planning. Sixty-six percent of women have heard a family planning message on the radio and/or television, and 44 percent have read about it in the print media. The large majority of women and men also approve of family planning messages on the radio and television. Most women (77 percent) also exhibit a positive attitude towards the use of family planning, and more than one in two women believe that their husband also approves of the use of family planning.

Nevertheless, the use of contraception is very low in Ghana, with a marked discrepancy between ever use and current use of contraceptives. Although one in two currently married women has used family planning at least once in her lifetime, only 22 percent are currently using a method. The use of modern methods is even lower, with 38 percent having ever used a modern method, and 13 percent currently using it. Thirty-two percent of men report current use of a method, and one in five reports the use of a modern method. Much of the male-female difference in current use is due to the higher reporting of condom use by men. Even though traditional methods are not actively promoted, their use is relatively high. Nine percent of women and 12 percent of men report that they are currently using periodic abstinence and withdrawal.

The most widely used modern method is the pill (4 percent), followed closely by injectables and condoms (3 percent each). Both the public and private sectors are equally important sources of modern contraceptives. Within the public sector, government hospitals are the most important source, supplying 29 percent of contraceptives, while within the private sector, drug stores are an important source, supplying 32 percent of current users.

The two most important reasons for non-use of contraception among currently married women are the desire for more children (19 percent), and the fear of side effects (18 percent). In fact, one in four women below age 30 cited the latter reason. Twenty-one percent of younger women also stated that they, or their partners, or someone else was opposed to the use of contraception. The substantial proportions of women not wanting to use contraceptives for these two reasons suggest that there is substantial scope for the family planning programme in Ghana to increase contraceptive use by providing information and counselling to dispel misconceptions about using contraception.

There has been a very small increase in the contraceptive prevalence rate in Ghana in the most recent five-year period. Current use increased from 13 percent in 1988 to 20 percent in 1993 and 22 percent in 1998. The two-child decline in fertility between 1988 and 1998 far exceeds the increase in contraceptive prevalence over the same period and is inconsistent with international experience on the relationship between fertility and contraceptive prevalence. This contradiction warrants a closer examination of the impact of other proximate determinants on fertility.

Even though contraceptive use has not increased significantly in the last five years, there has been a substantial decline (40 percent) in unmet need. Nevertheless, there continues to be considerable scope for increased use of family planning. Around one in four currently married women has an unmet need for family planning, 11 percent with an unmet need for spacing, and 12 percent with an unmet need for limiting.

Childhood Mortality

One in nine children born in Ghana dies before the fifth birthday. Approximately half of all deaths to children under five occur during the first year of life. Infant mortality is 57 deaths per 1,000 births. The risk of neonatal deaths is 30 per 1,000 births and the risk of postneonatal deaths is 27 per 1,000 births.

There has been a 43 percent decline in infant and under-five mortality in the last two decades. Mortality is consistently lower in urban than rural areas, and infant mortality is lowest in the Greater Accra Region and highest in the Upper East Region. As expected, mother's education displays a strong negative relationship with infant and child mortality, with children born to mothers with little or no education suffering the highest mortality. Maternity care also has significant impacts on infant and child survival, with mothers who receive neither antenatal nor delivery care experiencing the highest mortality rates.

Maternity Care

Antenatal care utilisation is high in Ghana, with mothers receiving care from a doctor, nurse or midwife for 87 percent of births. The median number of visits among women who received antenatal care is 4.6, and three in five women who received antenatal care have four or more visits. The quality of antenatal care is also reasonably good in Ghana. Mothers of about three in four births were weighed and measured, had their blood pressure taken, their urine tested, and given folic/folate acid tablets, during their pregnancy. For about half of births (52 percent), mothers received two or more tetanus toxoid injections.

Institutional deliveries are not common in Ghana. Only two in five births were delivered in a medical facility. Forty-four percent of births were attended by a doctor, nurse or midwife. Non-institutional deliveries are more likely to be attended by someone other than a doctor, nurse or midwife. Trained traditional birth attendants assisted one in four births, and this is a substantial increase from the 15 percent of births in 1993. But there continues to be substantial scope for improving safe home delivery, since untrained traditional birth attendants delivered nearly one in five births.

Postnatal care, an important component of maternity care, is crucial for monitoring and treating complications within the first two days following delivery. Only four percent of births that occurred outside a health facility received postnatal care within the first two days. Even more troubling is the fact that one in two non-institutional deliveries did not receive any postnatal care. The most important providers of postnatal care for non-institutional deliveries were nurses or midwives (39 percent).

Child Health

The proportion of children fully immunised by age one has increased in the last five years from 43 percent in 1993 to 51 percent in 1998. Around nine in ten children received the BCG, and first dose of DPT and polio vaccines before age one. However, the coverage for the third dose of DPT and polio fell to 67 percent. Sixty-one percent of children received the measles vaccine before age one and 39 percent have been vaccinated against yellow fever. One in four children also received Vitamin A in the six months prior to the survey.

The prevalence of symptoms of acute respiratory infection (ARI) among children under five years of age, in the two weeks before the survey, was 14 percent. Use of a health facility for the treatment of symptoms of ARI is low, with only one in four children taken to a health facility. Advice or treatment for symptoms of ARI is most commonly sought from government health facilities.

Twenty-seven percent of children under five were reported to have had fever, a major manifestation of malaria, in the two weeks before the survey. Antimalarial treatment is the most commonly prescribed treatment for fever, with three in five children receiving it, mostly from a government facility.

Eighteen percent of children experienced diarrhoea at some time in the two weeks before the survey, and 4 percent had bloody diarrhoea, a symptom of dysentery. Twenty-one percent of children were treated at a government facility, and pharmacies/drugstores/chemists provided treatment or advice for 23 percent of children.

Breastfeeding and Nutrition

Breastfeeding is nearly universal in Ghana, and the median duration of breastfeeding is long (22 months). However, exclusive breastfeeding is relatively short and three in five children less than two months of age are given water, water-based liquids like juice, and other types of complementary food. The use of a bottle with a nipple is common, with 15 percent of children under 36 months using it, and bottle-feeding starting as early as 0-1 month.

Undernutrition is significant in Ghana, with one in four Ghanaian children under five years of age stunted (short for their age), 10 percent wasted (thin for their age), and 25 percent underweight. In general, rural children, children residing in the three northern regions of Ghana (Northern, Upper West, and Upper East), and children of uneducated mothers are more likely to be stunted, wasted or underweight.

The 1998 GDHS also collected information on mother's nutritional status. Survey results show that the level of chronic energy deficiency in Ghana is relatively high. One in nine women falls below the 18.5 kilogram/metres squared cut-off for the body mass index, which utilises both the height and weight to measure thinness. However, only three percent of women had a mid-upper arm circumference, an index of nutritional status, of less than 23 centimetres, the recommended cut-off point. There has virtually been no difference in maternal nutritional status in the last five years.

HIV/AIDS and STDs

Most women (97 percent) and men (99 percent) have heard of AIDS. However, the depth of their knowledge of AIDS is somewhat more limited. Fourteen percent of women and 9 percent of men stated that they did not know if AIDS is avoidable, and one in five women and one in nine men, did not know of any way to avoid contracting AIDS. Information on AIDS is mostly obtained from the radio, the workplace and television. Three-quarters of women and four-fifths of men believe that a healthy person can have the AIDS virus. A very high percentage of respondents (more than 80 percent), also rightly believe that a woman with the AIDS virus can give birth to a child with the AIDS virus, and that AIDS can be passed to the child through breastfeeding.

Fifty-four percent of women and 58 percent of men believe that they have no chance of contracting HIV/AIDS. Respondents who believe that they have no risk or have a small risk of contracting HIV/AIDS are less likely to change their behaviour than those who believe that they have a moderate or great risk of contracting the disease. About two in five women and men believe that the government should provide free medical treatment for persons with HIV/AIDS. Condoms play an important role in preventing the

transmission of HIV/AIDS. Men are more than twice as likely (15 percent) to have used condoms at last sex than women (6 percent), and twice as likely (7 percent) as women (3 percent) to have used condoms for the prevention of HIV/AIDS, than as a method of family planning.

Apart from HIV/AIDS, gonorrhoea is the most commonly heard of sexually transmitted disease (STD), with 61 percent of women and 73 percent of men having heard of it. Thirteen percent of women and 21 percent of men have heard of syphilis. Nearly all women and men who have heard of other STDs know a source of treatment.

Women's Status

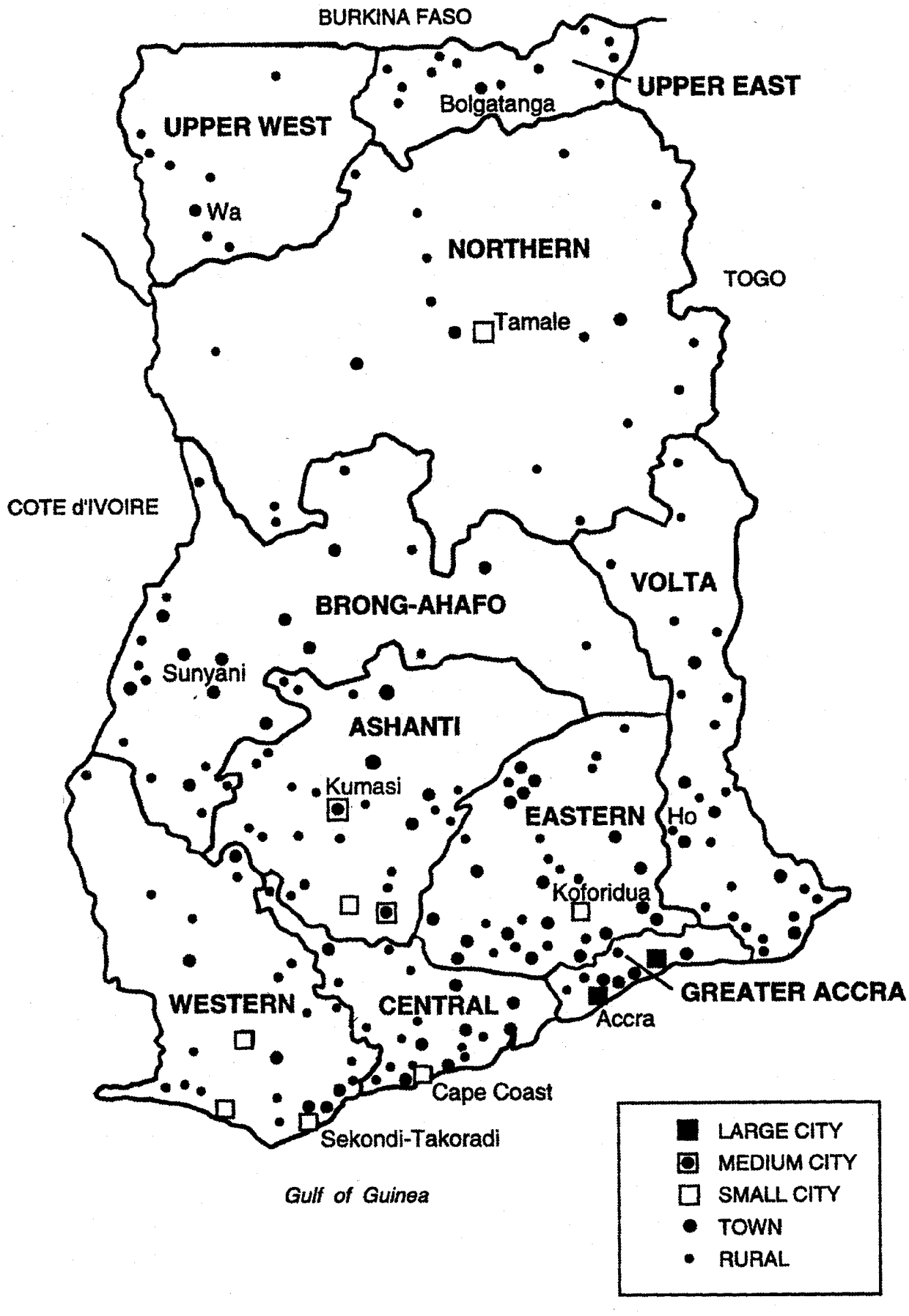
The 1998 GDHS also sheds some light on the status of women in Ghana. Twenty-three percent of currently married women are in a polygynous union, with older women more likely to be one of several wives to a man than younger women. However, polygyny among married women appears to be on the decline over the last five years, declining from 28 percent in 1993.

Women in Ghana are generally less educated than men, with a median number of years of schooling at 2.3 years compared to 4.9 years among males. Much of the female-male difference in educational attainment is at the secondary school level or higher. However, this gap in gender has narrowed in recent years. The net attendance ratio, which indicates participation in primary schooling among those age 6-11 years, and secondary schooling among those age 12-18 years, is nearly identical for females and males.

Female employment is high in Ghana with three in four women employed at the time of the survey. However, only two in three women work fulltime, 9 percent work seasonally, and 2 percent work occasionally. Surprisingly, the more educated a woman, the less likely she is to be currently employed. Nine out of ten women currently employed earn cash for their work. Self-employment, which is more common among less educated women is very high, with three in four women in this category. One in two women is engaged in sales and services. Most Ghanaian women enjoy a high degree of autonomy with regards to spending their cash earnings.

Just over half (54 percent) of working mothers have a child under six years. Forty-eight percent of these mothers look after their own children while they are working, 22 percent have relatives other than their husband/partner to look after the child, and 14 percent have the child in school or other institutional care. Less than 3 percent of women have husbands/partners to look after the child while they are at work.

GHANA


BURKINA FASO
UPPER EAST
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BRONG-AHAFO
Sunyani
ASHANTI
Kumasi
EASTERN
Ho
Koforidua
GREATER ACCRA
Accra
WESTERN
CENTRAL
Cape Coast
Sekondi-Takoradi
Gulf of Guinea
LARGE CITY
MEDIUM CITY
SMALL CITY
TOWN
RURAL

CHAPTER 1

INTRODUCTION

1.1 Geography, History and Economy

Geography

Ghana is centrally located in the West African sub-region and has a total land area of 238,539 square kilometres. The topography of Ghana shows that it is generally a low-lying country. The only range of hills lies on the eastern border with the Republic of Togo and the west of the Volta River along the Akwapim-Kwahu area. Along the coast is savannah grassland that is criss-crossed by several rivers and streams that are navigable by canoe. In the west and central parts of the country is heavily forested terrain that is sub-divided by hills, rivers and streams. To the north of the country lies the undulating savannah drained by the Black and White Volta Rivers.

The climate of Ghana is tropical, but rainfall and temperatures vary by distance from the coast, and elevation. The rainy season in the northern parts of Ghana begins in March and lasts until September, while two rainy seasons are recorded in the southern half of the country—April to July, and September to October. The average annual temperature is about 26^{o} Celsius (79^{o}Fahrenheit).

History

Until 1957, the country was called the Gold Coast; a name given to it by the early Europeans, because of the abundant gold traded on the coast. Due to the belief of ties between the people of this country and the ancient empire of Ghana which was situated in the Sahelian region of Senegal, Mauritania and Mali, the country was given the name Ghana when it gained independence from the British on 6th March 1957. It became a republic in the British Commonwealth of Nations on 1st July 1960.

Ghana has had its share of political turbulence with the military taking over the reigns of power on four occasions over the four decades of independence. Today, Ghana is one of the most politically stable and peaceful countries in Africa, having successfully gone through a transition from military rule to multi-party democracy in 1993.

Ghana operates a parliamentary system of government based on multi-parties; and has an elected President. The country has a three tier local government. There are 10 administrative regions, representing the first level of administration, and these are subdivided into districts, totalling 110. In line with the country's decentralised policy, the district represents the basic unit of planning and political administration. Below the districts are the unit committees.

Economy

The structure of the economy has not changed significantly in recent years. The primary sector continues to dominate in terms of its contribution to output, employment, revenue, and foreign exchange earnings. Agriculture is the main economic activity, and currently accounts for about 51 percent of the Gross Domestic Product (GDP), and employs about 60 percent of the labour force (Ghana, 1994). Tourism is however, fast becoming a very important foreign exchange earner.

The economy recorded its worst performance during the decade prior to 1984, but has made a dramatic recovery with the institution of the Economic Recovery Programme (ERP) in 1983. Since 1984, the real national income has grown at an average annual rate of 5.3 percent, compared to a decline of 1.3 percent during the 1976-1983 period (Ghana, 1994).

1.2 Demographic Profile

When Ghana gained independence in March 1957, its population was barely 6 million. The first post-independence population census conducted in 1960 recorded the number of people in the country at 6.7 million, giving an inter-censal growth rate of 4.2 percent between 1948 and 1960 (Ghana, 1994). By 1970 the population of Ghana had increased to 8.6 million with an annual rate of increase of 2.4 percent. The last census in 1984 put the country's population at 12.3 million with an inter-censal growth rate of 2.6 percent. The mid-year population of Ghana for 1999 is estimated at 18.3 million thus indicating a tripling of the population between 1957 and 1999, or a doubling of the 1970 population in just 26 years.

With a substantial proportion of its population below fifteen years of age, Ghana's population is relatively young. The 1984 Census showed that 45 percent of the population was under the age of 15 with 51 percent aged 15-64. A more recent study, the 1997 Core Welfare Indicators Questionnaires (CWIQ) Survey, showed a slight drop in the proportion of the population under 15 years to 42 percent while those age 65 and over increased to 5 percent (GSS, 1998)

Although fertility has been declining, current levels have been a source of worry for policy makers and planners. The total fertility rate ranged between 6 and 7 for the period between 1960 and 1988. It dropped to 5.5 in 1993, but this is considered rather high (GSS, 1994).

There is evidence to indicate that the death rate in Ghana has been steadily declining over the years as a result of a combination of several factors such as improvement in public health, sanitation, medical facilities, increasing education, and modernisation in general. The infant mortality rate (IMR), dropped from 133 per 1,000 in 1957 (MOH, 1996) to 77 per 1,000 in 1988 (GSS and IRD, 1989), and 66 per 1,000 in 1993 (GSS and MI, 1994). Life expectancy at birth has increased from about 45 years in 1960 to 57 years in 1998 (MOH, 1996). However, there still exist wide variations between regions, between urban and rural populations, and between different cultural and religious groups.

The pattern of morbidity has virtually remained unchanged over the years, and the general populace seems to be afflicted largely with the same diseases such as malaria, upper respiratory infections and water-borne diseases. An underlying cause of the persistence of these diseases is the widespread prevalence of poor nutrition, poverty, inadequate housing, and lack of access to potable water in many communities.

Ghana's population is predominantly rural. In 1960 only 23 percent of the population lived in urban areas, increasing to 29 percent in 1970, 32 percent in 1984, and 34 percent currently. Thus, 66 percent of the country's population reside in rural communities and are mainly employed in primary production (Ghana, 1994 and GSS and MI, 1998).

1.3 Population and Reproductive Health Programmes

Ghana adopted a population policy in 1969. One of the major long-term objectives of this policy was to reduce the population growth rate from nearly 3.0 percent in 1969 to 1.7 percent by the year 2000 (Ghana, 1994). By 1993, seven years to the target date, the 1969 policy had made only modest gains, for instance, the growth rate was estimated at between 2.8 and 3.0 percent and this was considered to be quite high (GSS and MI, 1994). Besides, there were new issues and concerns, which needed to be taken into

account. The 1969 population policy was therefore revised in 1994 to take into account emerging issues like HIV/AIDS, population and the environment, and concerns about the elderly and children, and also to develop new strategies that would ensure the achievement of the policy objectives.

The revised edition reviewed all policy goals and set new targets within the framework of a national development strategy. One of the major targets in the new policy is the reduction of total fertility rate (TFR) to 5.0 by the year 2000, to 4.0 by 2010 and to 3.0 by 2020. This is to be achieved by attaining a contraceptive prevalence rate (CPR) of 15 percent by the year 2000, 28 percent by 2010 and 50 percent by 2020. The new target for population growth rate is 1.5 percent by 2020. The attainment of these policy goals is recognised as integral components of the national strategy to accelerate the pace of economic development, eradicate poverty and enhance the quality of life of all citizens, as outlined in the Vision 2020 Plan of Action. It is expected that these goals would propel Ghana into a middle income earning country by the year 2020 (Ghana, 1995).

The National Population Council (NPC) and its secretariat were established in 1992 as the highest statutory body to advise the government on population-related issues, and to facilitate, monitor, co-ordinate, and evaluate the implementation of population programmes. In December 1994, Parliament accorded the NPC statutory recognition by enacting an act to regulate its affairs.

Ghana collaborates with the United Nations Fund for Population Activities (UNFPA), the United States Agency for International Development (USAID), and other donor agencies to implement a number of population-related activities. Both UNFPA and USAID support the Government of Ghana's efforts to address the high population growth rate, low contraceptive prevalence rate, reproductive/sexual health, HIV/AIDS and other sexually transmitted diseases (STDs), and maternal and child health. Strategies focus on policy coordination and implementation, service delivery, and demand generation.

In its policies and programmes for the redirection and intensification of population activities, Ghana has incorporated the ideals and recommendations of the International Conference on Population and Development (ICPD) held in Cairo in September 1994, the World Summit on Poverty and Social Development held in Copenhagen in April 1995, and the Fourth World Conference on Women held in Beijing.

The Ministry of Health is vigorously pursuing policies aimed at ensuring good health for all citizens by the year 2000. Emphasis has been on making primary health care delivery systems available and accessible to all communities by the target date.

1.4 Objectives and Organisation of the Survey

The 1998 Ghana Demographic and Health Survey (GDHS) is the latest in a series of national-level population and health surveys conducted in Ghana. The primary objective of the 1998 GDHS is to provide current and reliable data on fertility and family planning behaviour, child mortality, children's nutritional status, and the utilisation of maternal and child health services in Ghana. Additional data on knowledge of HIV/AIDS are also provided. This information is essential for informed policy decisions, planning and monitoring and evaluation of programmes at both the national and local government levels.

The long-term objectives of the survey include strengthening the technical capacity of the Ghana Statistical Service (GSS) to plan, conduct, process, and analyse the results of complex national sample surveys. Moreover, the 1998 GDHS provides comparable data for long-term trend analyses within Ghana, since it is the third in a series of demographic and health surveys implemented by the same organisation, using similar data collection procedures. The GDHS also contributes to the ever-growing international database on demographic and health-related variables.

The 1998 GDHS was conducted under the aegis of the GSS. Macro International Inc. provided technical support for the survey through the MEASURE *DHS+* project. Funding for the survey came from the United States Agency for International Development (USAID), through its mission in Ghana. The Ghanaian Government covered the salaries of survey personnel, office accommodation and vehicles and provided other logistical support.

1.5 Sample Design

The major focus of the 1998 GDHS was to provide updated estimates of important population and health indicators including fertility and mortality rates for the country as a whole and for urban and rural areas separately. In addition, the sample was designed to provide estimates of key variables for the ten regions in the country. Details of the sample design and implementation are given in Appendix A.

The list of Enumeration Areas (EAs) with population and household information from the 1984 Population Census was used as the sampling frame for the survey. The 1998 GDHS is based on a two-stage stratified nationally representative sample of households. At the first stage of sampling, 400 EAs were selected using systematic sampling with probability proportional to size (PPS-Method). The selected EAs comprised 138 in the urban areas and 262 in the rural areas. A complete household listing operation was then carried out in all the selected EAs to provide a sampling frame for the second stage selection of households. At the second stage of sampling, a systematic sample of 15 households per EA was selected in all regions, except in the Northern, Upper West and Upper East Regions. In order to obtain adequate numbers of households to provide reliable estimates of key demographic and health variables in these three regions, the number of households in each selected EA in the Northern, Upper West and Upper East regions was increased to 20. The sample was weighted to adjust for over sampling in the three northern regions (Northern, Upper East and Upper West), in relation to the other regions. Sample weights were used to compensate for the unequal probability of selection between geographically defined strata, and weighted data are used throughout the remainder of this report.

The survey was designed to obtain completed interviews of 4,500 women age 15-49. In addition, all males age 15-59 in every third selected household were interviewed, to obtain a target of 1,500 men. In order to take cognisance of non-response, a total of 6,375 households nation-wide were selected.

1.6 Questionnaires

Three types of questionnaires were used in the GDHS: the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. These questionnaires were based on model survey instruments developed for the international MEASURE *DHS+* programme and were designed to provide information needed by health and family planning programme managers and policy makers. The questionnaires were adapted to the situation in Ghana and a number of questions pertaining to on-going health and family planning programmes were added. These questionnaires were developed in English and translated into five major local languages (Akan, Ga, Ewe, Hausa, and Dagbani).

The Household Questionnaire was used to enumerate all usual members and visitors in a selected household and to collect information on the socio-economic status of the household. The first part of the Household Questionnaire collected information on the relationship to the household head, residence, sex, age, marital status, and education of each usual resident or visitor. This information was used to identify women and men who were eligible for the individual interview. For this purpose, all women age 15-49, and all men age 15-59 in every third household, whether usual residents of a selected household or visitors who slept in a selected household the night before the interview, were deemed eligible and interviewed. The Household Questionnaire also provides basic demographic data for Ghanaian households. The second part of the

Household Questionnaire contained questions on the dwelling unit, such as the number of rooms, the flooring material, the source of water and the type of toilet facilities, and on the ownership of a variety of consumer goods.

The Women's Questionnaire was used to collect information on the following topics: respondent's background characteristics, reproductive history, contraceptive knowledge and use, antenatal, delivery and postnatal care, infant feeding practices, child immunisation and health, marriage, fertility preferences and attitudes about family planning, husband's background characteristics, women's work, knowledge of HIV/AIDS and STDs, as well as anthropometric measurements of children and mothers.

The Men's Questionnaire collected information on respondent's background characteristics, reproduction, contraceptive knowledge and use, marriage, fertility preferences and attitudes about family planning, as well as knowledge of HIV/AIDS and STDs.

1.7 Training and Fieldwork

Prior to the main survey, 10 listing teams, each consisting of 1 supervisor, 1 geographical assistant, 3 listers and a driver were recruited and trained for about 10 days in July 1998. Household listing began in August and lasted for about two months. Spot checks were conducted while the listers were in the field to ensure that the work was being done correctly and completely. In some cases, listers were sent back to relist areas where households had been missed or wrongly listed.

A pretest of the Household, Women's and Men's Questionnaires was conducted in September 1998 in all five main local languages and in both urban and rural areas. The pretest was conducted by staff of the GSS following three weeks of training. The questionnaires were finalised based on the outcome of the pretest. The English version of the questionnaires is included in Appendix E.

The GDHS data were collected by 14 teams, each consisted of a team supervisor (13 of the 14 supervisors were male), one male or female field editor, three interviewers, either male or female, and a driver, who was male. The field staff were trained during a three-week period in October/November 1998. This included two days of training in anthropometric measurement. The main fieldwork began in mid-November 1998 and lasted until mid-February 1999. All call backs and reinterviews were completed by the end of February 1999.

The completed questionnaires were returned to the Ghana Statistical Service head office in Accra for data processing. The office editing staff first checked that questionnaires for all selected households and eligible respondents had been received from the field. In addition, the few questions which had not been precoded (e.g., occupation, contraceptive brand) were coded at this time. The data were then entered and edited using microcomputers and the Integrated System for Survey Analysis (ISSA) programme developed for DHS surveys. Office editing and data processing activities were initiated immediately after the beginning of fieldwork and were completed in mid-March 1999.

1.8 Coverage of the Sample

Table 1.1 presents information on the results of the household and individual interviews. A total of 6,375 households were selected for the GDHS sample. Of these, 6,055 were occupied. Interviews were completed for 6,003 households, which represent 99 percent of the occupied households. A total of 4,970 eligible women from these households and 1,596 eligible men from every third household were identified

for the individual interviews. Interviews were successfully completed for 4,843 women or 97 percent and 1,546 men or 97 percent. The principal reason for nonresponse among individual women and men was the failure of interviewers to find them at home despite repeated callbacks.

Table 1.1 Results of the household and individual interviews

Number of households, number of interviews and response rates, according to urban-rural residence, Ghana 1998

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households sampled	2,140	4,235	6,375
Households occupied	2,010	4,045	6,055
Households interviewed	1,981	4,022	6,003
Household response rate	98.6	99.4	99.1
Individual interviews: women			
Number of eligible women	1,635	3,335	4,970
Number of eligible women interviewed	1,585	3,258	4,843
Eligible woman response rate	96.9	97.7	97.4
Individual interviews: men			
Number of eligible men	517	1,079	1,596
Number of eligible men interviewed	492	1,054	1,546
Eligible man response rate	95.2	97.7	96.9

CHAPTER 2

CHARACTERISTICS OF HOUSEHOLDS AND RESPONDENTS

This chapter provides a descriptive summary of the demographic and socio-economic characteristics of the household population and the individual respondents in the 1998 Ghana Demographic and Health Survey (GDHS). This information is useful for interpreting the survey findings and serves as an approximate indicator of the representativeness of the survey. It also provides valuable input for social and economic development planning.

The 1998 GDHS collected information from all usual residents of a selected household (the *de jure* population) and persons who had slept in the selected household the night before the interview (the *de facto* population). The difference between these two populations is very small and since past surveys have looked at the de facto population, for comparison purposes, all tables in this report refer to the de facto population, unless otherwise specified. A household was defined as a person or group of related and unrelated persons who live together in the same dwelling unit(s), who acknowledge one adult member as head of the household, and who share the same housekeeping arrangements.

2.1 Demographic Characteristics of Households

Information on the age and sex of each household member was obtained from the household head or some other responsible adult member of the household. Table 2.1 and Figure 2.1 show the age distribution of the population by five-year age groups according to urban-rural residence and sex. The 1998 GDHS enumerated a total of 20,915 persons of whom 52 percent were female. The structure of the population of Ghana is typical of developing countries. Forty-four per cent of the population is below age 15,

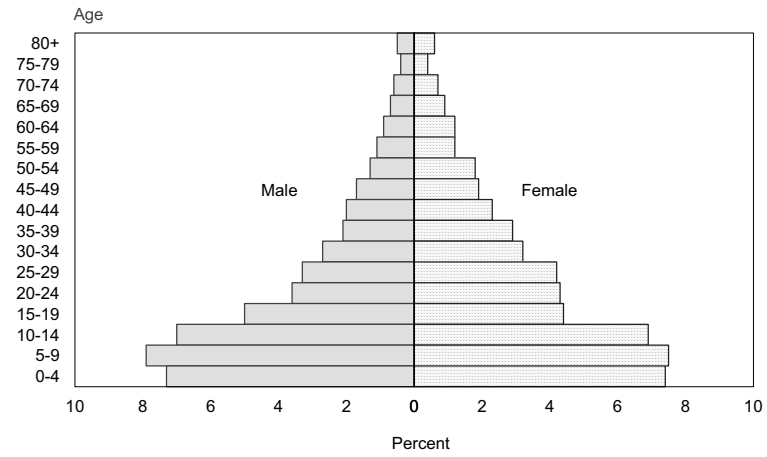
Table 2.1 Household population by age, residence and sex

Percent distribution of the de facto household population by five-year age group, according to urban-rural residence and sex, Ghana 1998

	Urban			Rural			Total[1]		
Age group	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	12.4	11.0	11.7	16.4	15.7	16.1	15.2	14.2	14.7
5-9	13.6	11.8	12.6	17.8	15.7	16.7	16.5	14.4	15.4
10-14	14.0	13.5	13.7	14.9	13.3	14.1	14.6	13.3	14.0
15-19	10.9	9.8	10.3	10.1	7.9	9.0	10.4	8.5	9.4
20-24	9.6	9.9	9.8	6.4	7.6	7.0	7.4	8.3	7.9
25-29	9.1	9.5	9.3	5.7	7.5	6.6	6.8	8.1	7.5
30-34	6.6	7.2	6.9	5.3	5.6	5.4	5.7	6.1	5.9
35-39	4.9	6.1	5.5	4.2	5.5	4.9	4.4	5.7	5.1
40-44	4.7	4.5	4.6	3.9	4.3	4.1	4.2	4.4	4.3
45-49	3.7	3.9	3.8	3.6	3.7	3.6	3.6	3.7	3.7
50-54	2.9	3.8	3.4	2.6	3.4	3.0	2.7	3.5	3.1
55-59	2.4	2.2	2.3	2.1	2.5	2.3	2.2	2.4	2.3
60-64	2.0	2.0	2.0	1.8	2.4	2.1	1.9	2.3	2.1
65-69	1.1	1.7	1.4	1.6	1.6	1.6	1.4	1.6	1.5
70-74	1.0	1.5	1.3	1.3	1.4	1.4	1.2	1.4	1.3
75-79	0.5	0.8	0.7	0.9	0.8	0.8	0.8	0.8	0.8
80 +	0.4	1.1	0.7	1.4	1.1	1.3	1.0	1.1	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	3,158	3,433	6,592	6,907	7,417	14,324	10,065	10,850	20,915

[1] Total includes 7 persons with age missing

Figure 2.1
Population Pyramid, Ghana, 1998



indicating high levels of fertility. In the rural areas, this percentage rises to 47 per cent while the corresponding figure for urban areas is 38 per cent. The number of children under age five is less than the number age 5-9, a finding that is consistent with recent fertility decline (discussed in greater detail in Chapter 3). As seen in Table 2.1, there is a smaller proportion of children under age five in urban areas, suggesting that recent declines in fertility are more evident in urban than rural areas and that the transition to lower fertility is occurring more rapidly with the urban population. An examination of the quality of the data in relation to age reporting indicates that there are no serious biases in reporting. For additional tables examining data quality refer to Appendix C.

The results further indicate that 51 per cent of the population of Ghana is in the 15-64 age group, and the population age 65 years and above account for 5 percent of the total population. A distinct feature that is observed in the age distribution of the population is that the dependent population, that is, those age less than 15 or more than 64, is higher in the rural areas (52 percent) than in the urban areas (42 percent). This may be attributed to rural-urban migration of the economically active population and especially the youth, in search of jobs.

The GDHS results show that females outnumber males in the country. The survey results give the overall sex ratio as 93 males to every 100 females. The sex ratio varies by age and residence. It is slightly higher in the rural than urban areas (93 versus 92 males per 100 females). The ratio is as high as 111 among those age below 15, and drops sharply to 90 among those age 65 and over.

Table 2.2 shows the change in the age structure of Ghana's population by comparing the proportion of persons in broad age groups from the 1988 GDHS, the 1993 GDHS, and the 1998 GDHS. The proportion of the population under 15 years of age did not change between 1988 and 1993 but fell from 48 percent in 1993 to 44 percent in 1998. As a result of this shift, the dependency ratio [1] in Ghana dropped from 109 in 1988 to 95 in 1998.

[1] The dependency ratio is defined as the sum of all persons age under 15 years or over 64 years divided by the number of persons age 15-64, multiplied by 100.

Table 2.2 Population by age from selected sources

Percent distribution of the de facto household population by age group at different dates, Ghana 1998

Age group	1988[1] GDHS	1993[2] GDHS	1998 GDHS
< 15	48.4	48.2	44.1
15-64	47.8	48.2	51.2
64+	3.8	3.6	4.7
Median age	15.7	16.0	18.1

[1] GSS and IRD, 1989
[2] GSS and MI, 1984

2.2 Household Composition

A combination of factors determines the composition of households in Ghana. While the desire for large families persists in some traditional homes, especially in the rural areas, the extended family system sometimes compels the more privileged members of the society in the urban centres to take care of their less fortunate relatives. Also, many parents have had to foster their grandchildren as a result of the high incidence of teenage pregnancy in the country.

Table 2.3 shows that 37 percent of households are female headed, with a slightly larger proportion of females heading urban households (39 percent) than rural households (35 percent).

Table 2.3 Household composition

Percent distribution of households by sex of head of household, household size, and presence of foster children, according to urban-rural residence and region, Ghana 1998

	Residence		Region										
Characteristic	Urban	Rural	Western	Greater Central	Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper West	Upper East	Total
Household headship													
Male	61.2	64.6	66.5	49.9	69.2	59.6	65.2	53.8	62.3	81.0	89.4	80.2	63.4
Female	38.8	35.4	33.5	50.1	30.8	40.4	34.8	46.2	37.7	19.0	10.6	19.8	36.6
Number of usual members													
0	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.2	0.6	0.0	0.0	0.0	0.1
1	30.2	23.9	21.5	25.4	26.8	16.0	30.3	34.0	32.2	26.3	10.3	10.2	26.1
2	16.0	14.0	12.2	13.8	13.2	13.6	15.6	18.7	16.7	11.2	7.8	14.5	14.7
3	14.2	13.4	15.8	12.0	15.3	14.0	14.4	12.1	11.3	13.7	13.9	15.1	13.7
4	13.0	13.4	14.2	14.5	12.9	15.1	13.7	10.6	12.7	11.5	14.6	16.3	13.3
5	9.6	12.2	12.5	13.6	10.7	14.6	10.8	8.8	10.1	10.2	11.8	11.5	11.3
6	7.4	8.7	8.2	8.8	8.2	11.0	5.8	7.1	6.6	9.9	15.4	10.7	8.2
7	4.8	5.9	6.2	5.7	6.1	5.4	4.8	4.4	5.5	3.4	10.3	8.2	5.5
8	2.0	3.6	3.5	2.9	3.1	4.4	1.9	1.8	2.5	3.9	7.1	5.3	3.0
9+	2.7	4.9	5.5	3.1	3.5	5.9	2.8	2.2	1.8	9.9	8.8	8.2	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean size	3.3	3.8	3.9	3.6	3.6	4.2	3.2	3.0	3.2	4.1	5.0	4.6	3.6
Percent with foster children [1]	14.9	16.1	21.0	19.3	11.2	22.9	15.5	12.5	15.6	11.1	9.1	12.7	15.7

Note: Table is based on de jure members; i.e., usual residents.
[1] *Foster children* are children under age 15 living in households with neither their mother nor their father present.

The average size of a household has decreased slightly from 3.8 in 1993 (GSS and MI, 1994) to 3.6 in 1998. Rural households (3.8) are slightly larger than urban households (3.3). One person households constitute over a quarter of all households, 30 percent in urban areas and 24 percent in rural areas. Only 4 percent of households have nine or more members.

Sixteen percent of households include children who are fostered, that is, children less than 15 years old living with neither biological parent. There is little urban-rural difference in the percent distribution of fostered children, but households with fostered children are more common in the Volta and Western Regions (23 percent and 21 percent, respectively).

Table 2.4 provides information on fosterhood and orphanhood among children under age 15. Less than half of children under 15 years of age live with both parents, 29 percent live with their mothers alone, 6 percent live with their fathers alone, and 16 percent live with neither parent. Two percent of children less than 15 years have lost their father, one percent have lost their mother, and less than half a percent have lost both parents.

Table 2.4 Fosterhood and orphanhood

Percent distribution of de jure children under age 15 by survival of parents and child's living arrangements, according to child's age, sex, residence, and region, Ghana 1998

Background characteristic	Living with both parents	Living with mother but not father		Living with father but not mother		Not living with either parent				Missing information on father/ mother	Total	Number of children
		Father alive	Father dead	Mother alive	Mother dead	Both alive	Father only alive	Mother only alive	Both dead			
Age												
<2	59.1	36.2	0.8	0.7	0.1	2.2	0.3	0.1	0.0	0.6	100.0	1,839
3-5	53.4	28.9	1.7	3.3	0.4	10.6	0.6	0.7	0.1	0.4	100.0	1,883
6-9	48.0	22.9	2.8	5.2	1.7	16.0	1.0	1.4	0.4	0.6	100.0	2,676
10-14	41.4	21.6	3.4	7.1	1.4	19.2	1.5	2.0	0.9	1.6	100.0	2,981
Sex												
Male	49.7	26.6	2.6	5.3	1.1	11.3	1.0	1.1	0.5	0.9	100.0	4,740
Female	48.5	26.0	2.2	3.7	1.0	15.2	0.9	1.2	0.3	0.9	100.0	4,639
Residence												
Urban	43.5	31.0	2.3	3.9	0.5	15.8	0.9	0.8	0.4	0.9	100.0	2,576
Rural	51.2	24.5	2.4	4.8	1.2	12.3	1.0	1.3	0.4	0.9	100.0	6,803
Region												
Western	44.8	25.3	1.1	5.9	0.8	18.1	0.9	1.9	0.6	0.6	100.0	1,167
Central	36.7	36.1	2.7	3.2	1.2	16.0	1.0	1.1	0.3	1.7	100.0	1,106
Greater Accra	51.6	25.3	1.9	5.4	1.2	12.6	0.5	0.5	0.3	0.6	100.0	1,125
Volta	42.4	25.9	2.9	6.8	0.8	18.0	1.5	0.7	0.3	0.6	100.0	1,106
Eastern	52.5	22.3	2.0	5.3	0.6	13.4	1.7	1.1	0.6	0.5	100.0	1,191
Ashanti	39.2	41.1	1.6	3.2	0.7	11.0	0.9	0.8	0.5	1.0	100.0	1,413
Brong Ahafo	44.6	30.8	2.8	4.1	0.7	13.4	0.3	2.5	0.1	0.6	100.0	811
Northern	75.0	6.9	1.6	3.0	0.8	8.3	1.0	1.8	0.4	1.2	100.0	595
Upper West	78.2	7.6	2.6	4.9	1.0	3.5	0.5	0.9	0.1	0.6	100.0	280
Upper East	72.3	7.3	7.1	2.0	3.7	4.8	0.2	0.4	0.7	1.5	100.0	584
Total	49.1	26.3	2.4	4.5	1.0	13.2	0.9	1.2	0.4	0.9	100.0	9,379

Note: By convention, *foster children* are those who are not living with either biological parent. This includes *orphans*, i.e., children with both parents dead.

2.3 Educational Level of Household Members

The high correlation between levels of education and positive health and other social indicators makes education a very important variable in any study of households. Higher education, especially of women, is usually associated with greater knowledge and use of sound health practices and family planning methods. Successive governments since independence have therefore pursued various policies aimed at reducing illiteracy among the population to the barest minimum. The current programme, Free Compulsory Universal Basic Education (FCUBE), guarantees free education to all children of school going age.

The educational reforms of 1989 introduced the 6-3-3-4 system. Basic education (6 years primary and 3 years junior secondary) starts at age 6. Secondary education continues for three more years after which tertiary education follows for four years. In addition to university education, there are a host of post-secondary institutions offering technical, vocational, and professional training that may be tertiary or non-tertiary.

In spite of the progress made on the educational front, the GDHS data in Table 2.5 show that quite a substantial proportion of the Ghanaian population has no education. One in three females and one in five males has no education. In general females have less education than males, with a median number of years of schooling of 2.3 years compared with 4.9 years for males. Much of the female-male differential in educational attainment is at secondary school level or higher. For example, only half as many women (6 percent) as men (12 percent) have attended secondary school.

Differences in educational attainment by age groups give an indication of the long-term trend. It is encouraging to note that the proportion of women with no education has fallen steadily from 89 percent for those age 65 and above to 14 percent for those age 10-14. A similar trend is observed among males, with the corresponding levels being 66 percent and 13 percent, respectively. As expected, educational attainment is higher in the urban than rural areas, and highest in the Greater Accra Region.

Another way to assess the recent trends in educational attainment is to compare the 1993 and 1998 GDHS data. During the last five years, the percentage with no education has declined from 38 percent for females and 26 percent for males in 1993 (GSS and MI, 1994) to 34 percent for females and 21 percent for males.

School Attendance

Table 2.6 presents data on net attendance ratio (NAR) and gross attendance ratio (GAR), by school level, sex, residence and region. The NAR indicates participation in primary schooling among those age 6-11, and secondary schooling among those age 12-18, the official age group for that level in Ghana. The GAR measures participation at each level of schooling among youth of any age, from 6-24. The GAR is nearly always higher than the NAR for the same level, because the GAR includes participation by youth who may be older, or younger, than the official age range for that level.[2] A NAR of 100 percent would indicate that all of the children in the official age range for the level are attending at that level. The GAR can exceed 100 percent, if there is significant overage or underage participation at a given level of schooling.

[2] Youth who are overage for a given level of schooling may have started school overage, or may have repeated one or more grades in school, or may have dropped out of school and later returned.

Table 2.5 Educational level of the female and male household population

Percent distribution of the de facto female and male household population age six and over by highest level of education attended, and median number of years of schooling, according to selected background characteristics, Ghana 1998

Background characteristic	Level of education: No education	Primary	Middle/ JSS	Second-ary +	Don't know/ missing	Total	Number of women/ men	Median number of years of schooling
FEMALE								
Age								
6-9	23.5	74.2	0.2	0.0	2.2	100.0	1,252	0.0
10-14	14.2	67.1	18.2	0.2	0.2	100.0	1,447	3.3
15-19	14.8	18.8	57.1	9.2	0.2	100.0	927	6.8
20-24	25.0	17.2	42.0	15.8	0.1	100.0	903	7.0
25-29	30.7	18.1	41.0	9.8	0.4	100.0	883	6.0
30-34	34.4	17.4	38.1	9.8	0.3	100.0	659	5.3
35-39	32.5	18.3	39.9	8.9	0.4	100.0	614	5.7
40-44	38.9	16.2	36.8	7.6	0.6	100.0	473	4.4
45-49	48.8	14.8	25.0	11.0	0.4	100.0	406	0.9
50-54	64.8	12.9	18.0	4.1	0.2	100.0	378	0.0
55-59	76.2	10.2	8.5	4.1	1.0	100.0	258	0.0
60-64	77.6	8.2	10.3	2.3	1.6	100.0	250	0.0
65+	89.0	3.8	6.1	0.9	0.3	100.0	540	0.0
Residence								
Urban	22.4	29.6	34.7	12.9	0.3	100.0	2,994	5.4
Rural	39.8	33.0	23.6	2.8	0.7	100.0	5,999	1.0
Region								
Western	29.6	37.9	27.2	5.3	0.1	100.0	1,074	2.3
Central	32.7	34.3	28.4	4.4	0.2	100.0	1,044	2.4
Greater Accra	19.6	30.1	33.2	16.7	0.4	100.0	1,336	5.9
Volta	31.4	35.6	27.9	4.2	0.9	100.0	1,092	2.4
Eastern	22.8	37.7	33.4	5.6	0.4	100.0	1,166	3.8
Ashanti	30.0	30.3	34.7	4.8	0.2	100.0	1,357	3.7
Brong Ahafo	32.6	37.2	27.6	1.7	1.0	100.0	698	1.6
Northern	79.7	13.2	4.4	1.9	0.8	100.0	473	0.0
Upper West	68.4	21.7	7.4	1.4	1.0	100.0	245	0.0
Upper East	69.4	17.3	5.4	5.2	2.7	100.0	508	0.0
Total	34.0	31.9	27.3	6.2	0.6	100.0	8,993	2.3
MALE								
Age								
6-9	23.1	74.0	0.0	0.0	2.8	100.0	1,374	0.1
10-14	13.2	68.3	18.4	0.0	0.2	100.0	1,472	3.3
15-19	9.1	20.5	59.2	11.0	0.2	100.0	1,043	7.4
20-24	13.1	11.2	46.3	29.4	0.0	100.0	744	8.5
25-29	13.3	12.8	48.2	25.4	0.2	100.0	684	9.1
30-34	16.7	11.9	51.8	19.1	0.5	100.0	572	9.3
35-39	18.7	10.9	50.3	19.5	0.6	100.0	445	9.3
40-44	19.7	9.4	49.1	21.7	0.1	100.0	419	9.3
45-49	28.7	11.6	38.8	20.1	0.9	100.0	365	9.1
50-54	24.8	10.4	38.2	25.7	1.0	100.0	271	9.3
55-59	38.8	9.4	36.6	15.0	0.2	100.0	222	6.0
60-64	45.3	10.0	28.8	14.7	1.2	100.0	190	3.3
65+	65.8	9.8	18.1	5.0	1.3	100.0	450	0.0
Residence								
Urban	10.4	28.4	37.8	22.8	0.7	100.0	2,689	7.6
Rural	25.5	35.1	31.2	7.3	0.9	100.0	5,564	3.5
Region								
Western	11.8	35.1	39.5	13.3	0.2	100.0	1,029	6.2
Central	13.4	41.3	34.1	10.7	0.4	100.0	855	4.9
Greater Accra	9.4	28.3	35.0	26.8	0.4	100.0	1,273	8.4
Volta	19.3	35.0	36.4	8.5	0.7	100.0	1,013	4.8
Eastern	12.1	35.2	41.2	11.1	0.4	100.0	1,032	6.2
Ashanti	13.2	35.1	39.8	10.4	1.5	100.0	1,180	6.1
Brong Ahafo	20.4	34.5	35.8	7.5	1.7	100.0	660	4.3
Northern	63.8	22.0	7.9	5.8	0.5	100.0	478	0.0
Upper West	59.0	26.0	8.1	6.0	0.9	100.0	251	0.0
Upper East	57.4	22.8	10.1	7.3	2.3	100.0	482	0.0
Total	20.6	32.9	33.3	12.4	0.8	100.0	8,254	4.9

[1] Includes 4 women and 2 men for whom age data are missing

Table 2.6 School attendance ratios

Net attendance ratios (NAR) and gross attendance ratios (GAR) for the de facto household population by level of schooling, sex and residence, Ghana 1998

Residence and region	NAR[1]			GAR[2]		
	Male	Female	Total	Male	Female	Total
PRIMARY SCHOOL						
Residence						
Urban	86.0	84.8	85.4	118.3	111.4	114.8
Rural	70.8	70.5	70.7	98.2	95.0	96.7
Region						
Western	88.4	84.0	86.2	115.8	107.0	111.4
Central	82.9	84.7	83.7	110.2	114.1	112.0
Greater Accra	87.1	82.0	84.7	126.7	117.4	122.2
Volta	73.6	79.7	76.4	104.3	113.5	108.5
Eastern	85.8	86.8	86.3	115.6	111.8	113.6
Ashanti	80.8	77.2	79.1	104.2	98.4	101.5
Brong Ahafo	67.2	75.3	71.5	103.7	102.6	103.1
Northern	37.6	30.7	34.2	56.1	38.1	47.3
Upper West	44.3	44.9	44.6	71.6	67.6	69.7
Upper East	40.8	37.3	39.2	61.7	49.9	56.2
Total	75.0	74.0	75.0	104.0	100.0	102.0
SECONDARY SCHOOL						
Residence						
Urban	41.2	39.5	40.3	55.9	46.4	51.0
Rural	31.2	28.0	29.7	36.4	30.6	33.7
Region						
Western	36.5	34.5	35.5	41.7	36.9	39.4
Central	39.6	32.1	36.0	44.4	35.2	39.9
Greater Accra	35.7	36.1	35.9	54.6	44.1	49.2
Volta	34.8	26.7	31.0	41.2	29.1	35.5
Eastern	41.7	33.4	37.9	47.1	37.3	42.6
Ashanti	40.0	38.3	39.1	48.4	44.3	46.3
Brong Ahafo	27.6	34.6	31.1	29.1	35.3	32.2
Northern	16.1	11.9	14.4	28.4	13.9	22.6
Upper West	15.6	16.5	16.0	20.5	18.1	19.5
Upper East	22.8	22.8	22.8	34.0	28.0	31.3
Total	34.0	32.0	33.0	42.0	36.0	39.0

[1] The NAR for primary school is the percentage of the population of primary school age (6-11 years) that is attending primary school. The NAR for secondary school is the percentage of the population of secondary school age (12-18 years) that is attending secondary school. By definition, the NAR cannot exceed 100 percent.

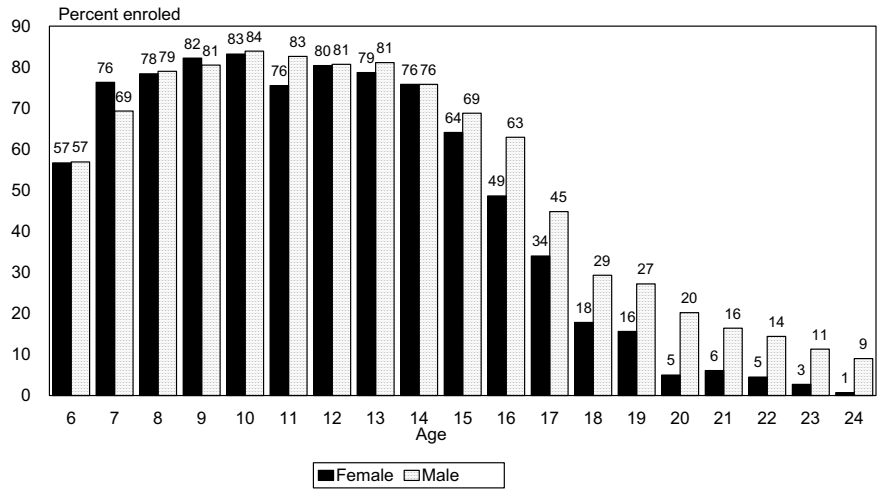
[2] The GAR for primary school is the total number of students attending primary school—regardless of age—expressed as a percentage of the official primary school-age population. The GAR for secondary school is the total number of students attending secondary school—regardless of age—expressed as a percentage of the official secondary school-age population. If there are significant numbers of over-age or under-age students at a given level of schooling, the GAR can exceed 100 percent.

The NAR is nearly identical for females and males at both the primary and secondary school levels. Three in four children age 6-11, who should be attending primary school are currently doing so at that level. On the other hand, only one in three children age 12-18, who should be attending secondary school is, in fact, in school at that level. Attendance ratios are as expected, lower in rural areas and in the three northern regions (Northern, Upper West, and Upper East Regions).

The GAR at both the primary and secondary school level is slightly higher for males than females. This reflects a relatively higher overage attendance among males than females. The ratio of male to female GAR at the primary level is 104 to 100, and at the secondary level is 42 to 36. Differences in the urban-rural and regional residence are similar to those for the NAR.

Figure 2.2 shows the age-specific attendance ratios (ASAR) for the population age 6-24 by sex. The ASAR indicates participation in schooling at any level, from primary through higher education. The closer the ASAR is to 100 percent, the higher is the proportion of people of the given age that is attending school. While the official starting age in Ghana for Grade 1 is 6 years, only 57 percent of 6-year old children attend school, compared with about 73 percent of 7-year old children. This suggests that many children start school overage. Roughly the same proportion of males and females attends school through the age of 15, and thereafter, a much higher proportion of males than females attends school. This gender imbalance suggests that from the mid-teenage years onward, the various costs of schooling (both monetary and non-monetary) are higher, and/or the perceived benefits of schooling are lower, for females than for males.

Figure 2.2
Age-Specific Enrolment Rates



Note: De facto household population age 6-24 enroled in school at the time of the survey.

GDHS 1998

2.4 Housing Characteristics

Table 2.7 provides information on selected housing characteristics by residence. This information is helpful in assessing the general socio-economic conditions of the population. More than two in five households have electricity; a 40 percent increase over the last five years (GSS and MI, 1994). There is

a considerable difference in access to electricity between urban and rural households. While more than four-fifths (82 percent) of households in urban areas have electricity, only 21 percent of rural households have electricity.

Information on the source of drinking water and accessibility to the source was also gathered in the 1998 GDHS. Safe drinking water is important for health and sanitation. Table 2.7 shows that 17 percent of households have water piped into their residence while an additional 23 percent collect water from a public tap or neighbour's house. In total, 84 percent of urban households have access to piped water, compared to only 16 percent of rural households. The proportion of households with access to piped water has changed little over the last five years, from 35 percent in 1993 (GSS and MI, 1994) to 40 percent in 1998. One-third of households have access to well water, either in their residence, or from a public well or from a borehole. The use of well water is much more common in rural households than urban households. Rivers and streams provide water to 18 percent of all households, and especially in rural areas. Those households, which did not have drinking water within their own premises, were also asked about the time required to fetch water. Overall, nearly three in five households have access to water within 15 minutes. As expected quicker access to water is available to more households in urban (80 percent) than rural (44 percent) areas. Fetching water is predominantly a female job with twice as many women as men fetching water (data not shown).

The majority of households use a traditional pit toilet (41 percent), while one in four households have access to a ventilated pit toilet. Flush toilets are relatively rare in Ghana, with 18 percent of urban households having access to their own or shared flush toilets, compared to just 2 percent of rural households. One in five households has no sanitation facility at all, and this is more common in rural (27 percent) than in urban households (9 percent).

Table 2.7 Housing characteristics

Percent distribution of households by housing characteristics, according to urban-rural residence, Ghana 1998

Characteristic	Residence		
	Urban	Rural	Total
Electricity			
Yes	82.4	20.9	42.6
No	17.5	79.0	57.3
Total	100.0	100.0	100.0
Source of drinking water			
Piped water			
Piped into residence	41.4	3.5	16.9
Public tap/neighbour's house	42.6	12.2	22.9
Well water			
Well in residence	0.8	1.9	1.5
Public well	5.2	14.8	11.4
Borehole	3.2	29.6	20.3
Spring	0.4	1.4	1.0
River/stream	3.4	25.5	17.7
Pond/lake	0.1	2.5	1.6
Dam	0.9	4.4	3.2
Dugout	0.3	2.8	1.9
Rainwater	0.5	0.9	0.8
Tanker truck	1.2	0.5	0.7
Total	100.0	100.0	100.0
Time to water source (in minutes)			
<15 minutes	79.7	44.0	56.6
Sanitation facility			
Flush toilet			
Own	10.5	1.2	4.5
Shared	7.8	0.9	3.3
Pit toilet			
Traditional	21.7	50.8	40.5
Ventilated improved	36.9	18.2	24.8
Bucket/pan	13.7	2.3	6.3
No facility/bush	9.4	26.6	20.5
Total	100.0	100.0	100.0
Main floor material			
Earth/sand/mud	0.6	14.5	9.6
Mud mixed with dung	0.3	5.5	3.7
Linoleum	19.5	5.3	10.3
Ceramic tiles/terrazzo	2.7	0.0	1.0
Cement	62.2	70.7	67.7
Carpet	14.3	3.8	7.5
Total	100.0	100.0	100.0
Persons per sleeping room			
1-2	64.2	61.5	62.5
3-4	25.2	26.2	25.8
5-6	7.5	9.3	8.6
7+	2.6	2.9	2.8
Missing/Don't know	0.5	0.2	0.3
Total	100.0	100.0	100.0
Mean persons per room	2.4	2.5	2.5
Using iodised salt	29.9	25.6	27.1
Total	2,118	3,885	6,003

A large percentage (68 percent) of houses have cement floors. Cement floors are slightly more common in rural households (71 percent) than urban households (62 percent). Ten percent of households (predominantly urban) have linoleum floors, and another 10 percent of households (predominantly rural) have a mixture of earth, sand and mud flooring. Eight percent of households have carpeted floors and, as expected, most of these are urban households.

The number of rooms in a household used for sleeping provides an estimate of the extent of crowding. The majority (63 percent) of households have only 1-2 persons per sleeping room, suggesting that crowding is not a common problem in Ghana. One in four households has 3-4 persons per sleeping room. There is little difference in the extent of crowding between urban and rural households. The overall mean number of persons per sleeping room is 2.5.

Insufficient iodine in the diet can lead to serious nutritional deficiencies such as goitre, nutritional stunting, mental retardation, and cretinism. The Government of Ghana has emphasised the addition of iodine to salt to prevent and control the occurrence of these health problems. Interviewers in the 1998 GDHS tested the iodine content of salt used in households, employing test kits supplied by UNICEF. These results are also presented in Table 2.7. The test involved placing a drop of a special solution onto a small amount of salt supplied by the household respondent. This test indicates the presence of iodine in the salt, but not its quality, which is subject to degradation. Results show that the consumption of iodised salt is very low in Ghana, with only one in four households (27 percent) using iodised salt.

Information on the possession of various durable goods was also collected at the household level. Table 2.8 shows that overall, one in two households has a radio, one-fifth have a television, and 17 percent have a bicycle. Fewer than one in twenty households have a telephone, refrigerator, motorcycle, or car. In general urban households are more likely to own these items, with the exception of bicycles which are more commonly found in rural areas.

Table 2.8 Household durable goods

Percentage of households possessing selected durable consumer goods, by urban-rural residence, Ghana 1998

Durable goods	Residence		
	Urban	Rural	Total
Radio	64.0	42.7	50.2
Television	40.6	9.7	20.6
Telephone	9.7	1.2	4.2
Refrigerator	5.3	0.2	2.0
Bicycle	11.0	20.9	17.4
Motorcycle	1.6	0.9	1.1
Private car	6.0	1.4	3.0
None of the above	31.1	48.6	42.4
Number of households	2,118	3,885	6,003

2.5 Background Characteristics of Respondents

Table 2.9 presents data on the background characteristics of the 4,843 female and 1,546 male respondents interviewed in the 1998 GDHS. The proportion of the respondents in each age group declines with increasing age for both sexes. Thirty-seven percent of the respondents are in the 15-24 age group, 44 percent of females and 38 percent of males are age 25-39, and the rest are in the age group 40-49 (women) and 40-59 (men).

Around two in three respondents are rural residents. Greater Accra has the largest proportion of respondents (17 percent) and Upper West the smallest proportion (3 percent).

The table further shows that around one in four women and two in five men have never been married. Nearly two-thirds of women are in union (married or living together), compared with around one in two men. Twice as many women are widowed, divorced or not living together with their partners (12 percent) as men (6 percent).

Table 2.9 Background characteristics of respondents

Percent distribution of women and men by selected background characteristics, Ghana 1998

Background characteristic	Weighted percent	Number of women		Weighted percent	Number of men	
		Weighted	Un-weighted		Weighted	Un-weighted
Age						
15-19	18.8	910	889	21.3	330	327
20-24	18.6	900	887	15.8	245	234
25-29	17.9	867	857	14.0	217	206
30-34	13.5	653	661	13.7	212	209
35-39	12.9	625	627	10.0	155	162
40-44	9.8	473	484	8.0	124	130
45-49	8.6	415	438	6.4	99	107
50-54	NA	NA	NA	5.6	87	91
55-59	NA	NA	NA	4.9	76	80
Residence						
Urban	35.9	1,739	1,585	35.4	547	492
Rural	64.1	3,104	3,258	64.6	999	1,054
Region						
Western	12.3	593	519	14.3	222	197
Central	11.4	552	447	8.9	137	110
Greater Accra	16.7	808	692	17.4	270	223
Volta	11.0	535	439	12.3	190	156
Eastern	13.0	628	550	12.6	195	170
Ashanti	15.0	728	629	13.3	205	178
Brong Ahafo	7.4	358	309	7.9	122	105
Northern	4.8	234	355	5.2	80	127
Upper West	2.5	120	350	2.5	39	113
Upper East	5.9	288	553	5.6	87	167
Marital status						
Never married	23.7	1,147	1,092	40.9	633	615
Married	51.9	2,516	2,683	43.0	665	702
Living together	12.7	615	546	9.8	151	136
Widowed	1.8	88	99	0.6	10	10
Divorced	4.6	221	196	2.2	34	35
Not living together	5.3	255	227	3.4	53	48
Education						
No education	29.1	1,410	1,737	16.4	254	357
Primary	18.0	874	813	12.3	190	190
Middle/JSS	42.5	2,056	1,823	51.3	793	707
Secondary+	10.4	502	470	20.0	309	292
Currently attending school						
Yes	7.8	378	362	12.4	192	186
No	91.4	4,426	4,443	87.1	1,346	1,351
Missing	0.8	39	38	0.5	8	9
Religion						
Catholic	14.6	705	775	16.5	255	270
Protestant/other Christian	63.7	3,081	2,724	56.9	877	771
Muslim	11.0	532	642	12.2	188	228
Traditional	4.4	213	362	4.7	73	124
No religion	6.2	300	315	9.6	148	148
Other religion	0.3	14	25	0.3	4	5
Ethnic group						
Akan	53.6	2,600	2,240	48.2	746	641
Ga/Adangbe	8.3	400	344	8.2	127	107
Ewe	15.8	766	646	18.1	280	233
Guan	1.5	72	71	1.8	27	26
Mole-Dagbani	6.8	331	510	10.2	157	232
Grussi	2.5	119	202	3.0	47	83
Gruma	5.4	263	374	3.5	55	68
Hausa	1.4	66	66	1.7	26	24
Dagarti	2.5	121	288	3.6	56	108
Other	2.1	103	102	1.7	26	24
Total	100.0	4,843	4,843	100.0	1,546	1,546

NA = Not applicable

There are marked differentials in the educational attainment of female and male respondents. Women are nearly twice as likely as men (29 percent versus 16 percent) to have no education. However, men are twice as likely as women to have some secondary education. Eighteen percent of women have primary education, and two in five have middle/JSS, while 12 percent of men have primary education and one in two has middle/JSS. A higher percent of men (12 percent) than women (8 percent) are currently attending school.

Table 2.9 also shows that the majority of both male and female respondents are Christians, with around 15 percent of women and 17 percent of men being Catholics. Around 12 percent of female and male respondents are Muslim and six percent of females and 10 percent of males claim no religion.

Akans, that is, the Asante, Akwapim, Fanti and other Akans, are the dominant ethnic group, with 54 percent of females and 48 percent of males belonging to this group. Ewe women and men account for 16 percent and 18 percent of the total. Eight percent of females and males are Ga/Adangbe while Mole-Dagbani account for 7 percent of female and 10 percent of male respondents.

2.6 Educational level of survey respondents

Table 2.10 shows the percent distribution of female and male respondents by the highest level of education attended according to age, urban-rural and regional residence. Younger respondents have a higher level of educational attainment than older respondents. There is a marked urban-rural difference

Table 2.10 Level of education

Percent distribution of women and men by the highest level of education attended, according to selected background characteristics, Ghana 1998

Background characteristic	Highest level of education: women					Number of women	Highest level of education: men					Number of men
	No education	Primary	Middle/ JSS	Secondary+	Total		No education	Primary	Middle/ JSS	Secondary+	Total	
Age												
15-19	13.9	18.6	58.8	8.7	100.0	910	7.2	18.6	60.0	14.2	100.0	330
20-24	23.9	16.9	44.0	15.2	100.0	900	9.9	13.9	48.4	27.8	100.0	245
25-29	29.8	19.9	40.7	9.6	100.0	867	12.1	10.4	48.5	29.0	100.0	217
30-34	33.8	18.1	37.9	10.2	100.0	653	17.8	8.9	56.2	17.1	100.0	212
35-39	32.2	18.2	40.7	8.9	100.0	625	20.4	12.5	48.8	18.3	100.0	155
40-44	37.9	18.6	36.3	7.2	100.0	473	24.1	8.5	54.3	13.1	100.0	124
45-49	50.2	14.6	23.8	11.3	100.0	415	29.6	8.2	46.2	16.0	100.0	99
50-54	NA	NA	NA	NA	NA	NA	28.3	6.7	40.5	24.4	100.0	87
55-59	NA	NA	NA	NA	NA	NA	33.9	12.1	36.6	17.4	100.0	76
Residence												
Urban	16.5	14.8	48.5	20.2	100.0	1,739	5.9	6.6	53.9	33.6	100.0	547
Rural	36.2	19.9	39.1	4.9	100.0	3,104	22.2	15.4	49.9	12.6	100.0	999
Region												
Western	28.3	20.8	42.8	8.1	100.0	593	8.1	12.7	59.9	19.3	100.0	222
Central	25.3	21.7	46.1	6.9	100.0	552	8.3	13.4	59.3	19.0	100.0	137
Greater Accra	14.8	15.6	43.5	26.1	100.0	808	5.8	8.5	47.1	38.6	100.0	270
Volta	24.0	21.4	46.6	8.1	100.0	535	9.3	15.2	59.4	16.2	100.0	190
Eastern	15.9	21.4	53.3	9.4	100.0	628	11.0	10.3	60.1	18.6	100.0	195
Ashanti	21.2	18.0	53.1	7.7	100.0	728	9.0	13.4	60.0	17.7	100.0	205
Brong Ahafo	30.0	19.4	47.7	2.9	100.0	358	20.0	16.2	57.2	6.7	100.0	122
Northern	82.8	5.9	7.8	3.5	100.0	234	63.8	13.3	13.0	9.9	100.0	80
Upper West	72.5	11.4	13.0	3.1	100.0	120	61.5	13.3	9.6	15.6	100.0	39
Upper East	73.9	9.8	7.8	8.5	100.0	288	59.8	10.2	17.4	12.6	100.0	87
Total	29.1	18.0	42.5	10.4	100.0	4,843	16.4	12.3	51.3	20.0	100.0	1,546

NA = Not applicable

in the educational attainment of female and male respondents. More than twice as many rural women as urban women, and almost four times as many rural men as urban men, have no education. Among those who have attended school, urban residents are more likely than rural residents to have completed primary school. The difference is even more marked when secondary education is considered—four times as many urban women as rural women, and three times as many urban men as rural men have secondary education. As expected, the Greater Accra Region has the highest level of educational attainment among both women and men. For example, 26 percent of women and 39 percent of men in Greater Accra have secondary level education or higher, compared with 3 percent of women and 7 percent of men in the Brong Ahafo Region.

2.7 Access To Mass Media

Table 2.11 shows the percentage of female and male respondents exposed to different types of mass media by selected background characteristics. This information is useful for family planning and health programme dissemination. As expected, men are much more likely than women to be exposed to each of the different types of media. Twice as many women (30 percent) as men (15 percent) have no exposure to mass media. Men are twice as likely as women to read the newspapers (41 percent compared with 19 percent). Exposure to the electronic media (radio and television) is more common among all respondents than exposure to the print media. Fifty-nine percent of women and 79 percent of men listen to the radio daily while 49 percent of women and 57 percent of men watch television at least once a week. Only 14 percent of women and 30 percent of men report exposure to all three media.

Exposure to mass media varies considerably by background characteristics. Generally, exposure varies inversely with age although this is more evident among female respondents than male. Urban respondents are three to four times as likely as rural respondents to be exposed to mass media. Residents of the Greater Accra Region are most likely to be exposed to the media and residents of the Upper West Region least likely. Education clearly impacts exposure to mass media. Almost all women and men with at least secondary education are exposed to the media compared with about 45 percent of women and 60 percent of men with no education.

2.8 Women's Status

The remaining discussion in this section refers to female respondents alone since information on employment and earnings status, decision on use of earnings, occupation, and child care while working, is useful for understanding the context in which reproductive and health decision-making take place. This information, together with women's educational status, discussed earlier, are also important indicators of women's overall status and their empowerment vis-à-vis men.

Employment Status

The 1998 GDHS collected information from women regarding their current employment situation. Table 2.12 shows that around three in four women were employed during the 12 months before the survey, while three percent of women were not working at the time of the survey but had been employed at some time during the last 12 months. Among those currently employed, more than eight in ten (63 percent) work full-time.

There is substantial variation in employment status by women's background characteristics. Older women (30 years and above) are more likely than younger women to be currently employed. Urban women are somewhat less likely than rural women to be currently working, but if they do they are more likely to work fulltime. Women residing in the Upper West Region are most likely to be currently employed, but most of their work is seasonal. Surprisingly, the more educated a woman the less likely

Table 2.11 Access to mass media

Percentage of women and men who usually read a newspaper once a week, watch television once a week, or listen to radio daily, by selected background characteristics, Ghana 1998

Background characteristic	No access to mass media	Access to mass media: Read newspaper weekly	Watch television weekly	Listen to radio daily	All three media	Number of women
FEMALE						
Age						
15-19	22.9	25.2	62.8	55.8	17.1	910
20-24	26.8	19.1	53.7	61.8	14.8	900
25-29	30.7	16.7	48.8	60.7	12.7	867
30-34	29.2	18.1	47.1	61.8	13.5	653
35-39	35.6	16.6	41.8	56.7	12.6	625
40-44	36.2	17.9	39.7	55.9	12.5	473
45-49	40.3	17.6	34.0	53.2	12.3	415
Residence						
Urban	12.4	35.1	75.1	74.5	29.0	1,739
Rural	40.4	10.2	34.4	49.5	5.6	3,104
Region						
Western	32.6	15.0	46.2	53.8	9.1	593
Central	33.1	12.1	45.4	51.9	8.5	552
Greater Accra	8.7	48.8	81.2	80.8	42.2	808
Volta	51.1	14.9	23.2	40.7	6.3	535
Eastern	18.3	19.7	61.6	69.6	14.6	628
Ashanti	26.0	13.2	52.5	60.4	8.4	728
Brong Ahafo	25.2	9.1	49.7	63.2	6.5	358
Northern	48.6	4.6	24.0	45.8	2.7	234
Upper West	69.4	4.5	15.8	23.3	2.5	120
Upper East	54.4	9.6	16.7	41.8	5.5	288
Education						
No education	55.1	0.0	23.3	38.0	0.0	1,410
Primary incomplete	30.6	3.0	45.4	58.3	1.8	874
Primary complete	19.5	24.8	60.5	65.9	16.5	2,056
Secondary+	4.5	77.5	80.8	85.9	63.7	502
Total	30.3	19.1	49.0	58.5	14.0	4,843
MALE						
Age						
15-19	19.4	32.3	61.6	66.0	21.7	330
20-24	12.8	40.3	63.2	82.5	32.7	245
25-29	9.9	44.9	67.1	86.5	39.7	217
30-34	12.4	43.3	52.6	83.0	26.4	212
35-39	13.4	44.0	52.3	82.1	32.3	155
40-44	16.8	42.9	52.1	80.8	30.5	124
45-49	14.9	41.7	48.0	80.2	25.5	99
50-54	22.6	51.1	50.1	76.1	35.4	87
55-59	17.7	41.7	45.0	79.2	25.9	76
Residence						
Urban	5.3	62.2	82.9	88.1	53.1	547
Rural	20.4	29.4	43.3	73.6	16.7	999
Region						
Western	12.7	37.0	52.7	82.3	25.4	222
Central	11.6	32.9	64.9	74.9	22.2	137
Greater Accra	4.5	74.5	89.7	91.0	68.6	270
Volta	24.5	39.9	28.9	66.7	14.0	190
Eastern	6.7	46.4	68.4	90.2	34.6	195
Ashanti	11.7	32.3	63.9	81.0	22.2	205
Brong Ahafo	9.5	30.5	57.2	83.8	23.8	122
Northern	24.1	15.2	38.3	72.0	11.3	80
Upper West	51.8	15.4	18.1	41.3	6.8	39
Upper East	48.5	20.4	13.8	49.1	6.6	87
Education						
No education	40.3	0.5	22.3	56.6	0.0	254
Primary incomplete	27.1	7.3	43.3	66.7	3.2	190
Primary complete	9.0	44.9	63.5	83.4	31.5	793
Secondary+	2.4	85.0	78.9	92.4	65.3	309
Total	15.1	41.0	57.3	78.8	29.6	1,546

Table 2.12 Employment

Percent distribution of women by employment status and continuity of employment, according to selected background characteristics, Ghana 1998

Background characteristic	Not currently employed		Currently employed			Missing	Total	Number of women
	Did not work in last 12 months	Worked in last 12 months	All year	Season-ally	Occasion-ally			
Age								
15-19	67.5	2.6	23.0	4.9	1.8	0.2	100.0	910
20-24	26.6	3.7	57.1	10.2	2.4	0.0	100.0	900
25-29	13.5	4.2	70.4	9.8	2.0	0.0	100.0	867
30-34	9.3	1.8	78.3	9.1	1.4	0.0	100.0	653
35-39	7.7	1.7	78.0	11.2	1.4	0.0	100.0	625
40-44	6.7	1.5	79.7	9.8	2.0	0.2	100.0	473
45-49	7.5	2.1	76.4	12.0	1.4	0.6	100.0	415
Residence								
Urban	26.5	2.9	63.9	4.9	1.7	0.1	100.0	1,739
Rural	22.0	2.6	61.7	11.7	1.9	0.1	100.0	3,104
Region								
Western	26.4	2.5	65.5	4.8	0.8	0.0	100.0	593
Central	19.5	3.4	68.5	5.6	3.1	0.0	100.0	552
Greater Accra	26.3	3.9	64.3	3.6	1.9	0.0	100.0	808
Volta	25.3	2.7	63.7	6.7	1.2	0.5	100.0	535
Eastern	20.4	2.5	69.6	5.1	2.4	0.0	100.0	628
Ashanti	22.2	1.7	70.1	4.9	1.1	0.0	100.0	728
Brong Ahafo	24.3	1.0	63.4	8.1	2.6	0.6	100.0	358
Northern	31.6	5.1	35.5	25.2	2.2	0.3	100.0	234
Upper West	13.1	2.3	44.2	35.3	5.1	0.0	100.0	120
Upper East	22.2	2.2	31.5	43.4	0.7	0.0	100.0	288
Mother's education								
No education	14.7	3.0	62.0	18.5	1.6	0.2	100.0	1,410
Primary	20.1	1.9	70.1	5.7	2.3	0.0	100.0	874
Middle/JSS	29.1	3.1	60.1	5.7	1.8	0.1	100.0	2,056
Secondary+	32.1	1.8	60.6	3.6	1.8	0.0	100.0	502
Total	23.6	2.7	62.5	9.2	1.8	0.1	100.0	4,843

she is to be currently employed. Eighty-two percent of women with no education are currently employed compared to 66 percent of women with secondary education or higher. Most of the difference between the two groups is owed to the greater level of seasonal employment among women with no education.

Employer and Form of Earnings

Nine out of ten working women earn cash (Table 2.13). Three quarters of all working women are self-employed and most of them earn cash. Fourteen percent of women work for someone other than a relative, eight in ten of whom are paid in cash. Ten percent of women work for a relative, and in contrast to the rest of working women, the majority of women working for a relative do not receive cash for their work.

Generally urban women are more likely than rural women to earn cash for their work, though the difference is not great (93 percent versus 87 percent). Urban women who are not self-employed are also more likely to be employed by someone else, other than relatives. In contrast, non self-employed rural women are more likely to be employed by their relatives. Self-employment is most common among

Table 2.13 Employer and form of earnings

Percent distribution of currently employed women by employer and form of earnings, according to selected background characteristics, Ghana 1998

Background characteristic	Self-employed		Employed by a nonrelative		Employed by a relative		Total	Number of women
	Earns cash	Does not earn cash	Earns cash	Does not earn cash	Earns cash	Does not earn cash		
Age								
15-19	46.6	0.6	15.0	11.7	7.3	18.8	100.0	270
20-24	65.9	2.1	13.7	6.7	3.9	7.7	100.0	627
25-29	77.4	2.6	9.4	2.1	3.8	4.9	100.0	713
30-34	81.8	2.4	8.9	0.1	3.0	3.8	100.0	580
35-39	76.4	2.7	13.9	0.0	3.4	3.5	100.0	567
40-44	82.1	2.3	8.0	0.3	2.0	5.2	100.0	433
45-49	75.4	2.4	11.3	0.2	5.7	5.0	100.0	374
Residence								
Urban	72.0	1.1	18.6	4.0	2.0	2.4	100.0	1,227
Rural	75.0	2.9	7.4	1.8	4.9	8.0	100.0	2,338
Region								
Western	77.0	1.9	9.2	1.9	4.9	5.1	100.0	422
Central	77.4	2.9	11.9	1.7	3.5	2.6	100.0	426
Greater Accra	66.5	0.8	23.4	2.5	2.5	4.4	100.0	564
Volta	78.0	1.9	10.4	2.6	1.2	5.9	100.0	384
Eastern	84.1	2.4	9.2	1.6	0.9	1.9	100.0	483
Ashanti	76.4	4.3	7.0	5.9	4.1	2.3	100.0	554
Brong Ahafo	76.4	1.7	13.5	2.2	3.5	2.6	100.0	265
Northern	64.9	2.3	3.4	2.2	7.6	19.5	100.0	148
Upper West	49.9	3.1	1.3	0.7	17.3	27.8	100.0	102
Upper East	59.3	1.2	6.5	0.7	8.6	23.7	100.0	218
Mother's education								
No education	70.6	2.8	6.1	0.8	7.3	12.4	100.0	1,158
Primary	80.1	2.7	7.1	2.0	3.1	5.1	100.0	683
Middle/JSS	79.6	2.0	9.6	4.4	2.0	2.3	100.0	1,392
Secondary+	49.1	0.8	44.6	1.8	1.4	2.2	100.0	332
Total	74.0	2.3	11.2	2.5	3.9	6.1	100.0	3,564

women residing in the Eastern Region, whereas, women residing in the three northern regions are more likely to be employed by a relative.

Self employment is relatively more common among less educated women. For example, 83 percent of women with primary education are self-employed compared to 50 percent of women with secondary or higher education. In contrast, educated women are more likely to work for someone else other than a relative and are more likely to earn cash for their work.

Occupation

Table 2.14 shows that women are twice as likely to be employed in the non-agricultural sector (67 percent) than in the agricultural sector (33 percent). Nearly one in two women (46 percent) are engaged in sales and the provision of services. In fact, this is the predominant occupation for women of all ages and educational background, and in all regions, except the Upper West and Upper East Regions, where agricultural work on family land is most common (44 percent). Agricultural work is also important, especially in the three northern regions. Around half of women in agriculture work on family land (18 percent), with about five percent of women each working on their own land, rented land or land belonging

Table 2.14 Occupation

Percent distribution of currently employed women by occupation and type of agricultural land worked or type of nonagricultural employment, according to selected background characteristics, Ghana 1998

Background characteristic	Agricultural				Nonagricultural			Total	Number of women
	Own land	Family land	Rented land	Other's land	Prof./ tech./ manag.	Sales/ services	Skilled manual		
Age									
15-19	0.7	22.0	1.7	2.8	0.8	50.8	21.2	100.0	270
20-24	1.6	16.9	1.9	3.8	2.7	51.8	21.3	100.0	627
25-29	3.8	15.5	4.6	6.7	3.2	43.8	22.5	100.0	713
30-34	2.6	18.1	4.9	5.8	4.8	47.0	16.9	100.0	580
35-39	6.6	17.2	6.1	4.5	6.6	49.4	9.5	100.0	567
40-44	9.9	18.1	4.9	8.5	5.8	40.2	12.8	100.0	433
45-49	14.5	17.9	4.1	6.6	7.2	38.6	11.2	100.0	374
Residence									
Urban	0.9	2.7	0.8	1.1	8.4	64.3	21.8	100.0	1,227
Rural	7.5	25.3	6.0	8.0	2.4	36.6	14.3	100.0	2,338
Region									
Western	8.4	16.0	4.9	8.1	5.1	42.5	14.9	100.0	422
Central	4.4	17.7	6.7	4.6	3.8	47.5	15.4	100.0	426
Greater Accra	0.2	1.9	1.5	1.0	9.9	64.8	20.7	100.0	564
Volta	2.2	21.2	3.8	5.3	4.6	45.5	17.4	100.0	384
Eastern	4.5	10.7	6.2	7.4	3.4	51.1	16.8	100.0	483
Ashanti	7.4	15.9	4.7	6.5	2.3	44.7	18.4	100.0	554
Brong Ahafo	13.5	17.4	7.0	14.3	3.1	34.2	10.6	100.0	265
Northern	7.3	35.4	0.9	3.2	1.3	40.5	11.5	100.0	148
Upper West	1.7	43.8	0.3	4.1	1.6	9.0	39.5	100.0	102
Upper East	6.2	48.7	0.5	0.5	2.9	31.6	9.6	100.0	218
Mother's education									
No education	8.0	30.7	5.3	10.0	0.0	33.1	13.0	100.0	1,158
Primary	4.9	17.7	5.9	6.3	0.0	48.0	17.2	100.0	683
Middle/JSS	4.2	10.4	3.3	2.9	2.9	56.4	19.9	100.0	1,392
Secondary+	0.7	0.9	0.4	0.4	35.7	45.1	16.9	100.0	332
Total	5.3	17.5	4.2	5.6	4.5	46.2	16.8	100.0	3,564

Note: Professional/technical/managerial includes professional, technical, managerial, and clerical occupations.

to other people. Seventeen percent of currently employed women are skilled manual workers in the non-agricultural sector. Five percent of women are in professional, technical or managerial positions.

As expected, work in sales and services is more common among urban women, while agricultural work is more common in the rural areas. Older women are more likely to work in agriculture and on their own land. Work in agriculture is inversely related to education. More than one in two women (54 percent) with no education work in agriculture compared with two percent of women with secondary or higher levels of education. Highly educated women are most likely to be in sales and service (45 percent) or in professional, technical or managerial jobs (36 percent).

Decision on Use of Earnings

Table 2.15 shows the percent distribution of women by the person who decides on how women's cash earnings are used. Four out of five women state that they alone decide how their earnings are used, 12 percent decide jointly with their husbands, and five percent state that their partner decides how to use her earnings. Older women, urban women, women who reside in the Greater Accra Region, and women with secondary education or higher, are most likely to decide for themselves on the use of their earnings. Male partners in the Upper West Region have a relatively greater say in the use of their partner's earnings than in the other regions. Unmarried women are also more likely than married women to decide for themselves on the use of their earnings.

Table 2.15 Decision on use of earnings

Percent distribution of women receiving cash earnings by person who decides on use of earnings, according to selected background characteristics, Ghana 1998

Background characteristic	Person who decides how earnings are used						Total	Number of women
	Self only	Husband/ partner	Jointly with husband/ partner	Someone else	Jointly with someone else	Missing		
Age								
15-19	72.0	1.8	3.5	14.0	8.0	0.6	100.0	187
20-24	77.5	6.9	10.3	2.3	2.7	0.3	100.0	524
25-29	80.2	5.3	12.6	1.1	0.6	0.2	100.0	645
30-34	79.9	5.1	14.4	0.1	0.5	0.0	100.0	543
35-39	79.8	6.9	12.8	0.0	0.2	0.3	100.0	531
40-44	82.9	5.0	11.8	0.0	0.0	0.3	100.0	399
45-49	85.9	4.3	9.6	0.0	0.0	0.2	100.0	346
Residence								
Urban	86.4	3.5	7.7	1.6	0.7	0.2	100.0	1,136
Rural	76.6	6.5	13.8	1.4	1.4	0.3	100.0	2,040
Region								
Western	72.3	10.7	14.6	0.3	2.1	0.0	100.0	384
Central	83.7	4.1	10.6	0.9	0.3	0.3	100.0	395
Greater Accra	90.6	2.7	4.0	2.2	0.2	0.2	100.0	521
Volta	85.3	4.3	6.6	0.7	3.1	0.0	100.0	344
Eastern	79.9	4.4	13.1	1.6	0.8	0.2	100.0	455
Ashanti	74.9	3.6	18.9	1.4	1.2	0.0	100.0	484
Brong Ahafo	75.8	7.0	14.0	2.3	0.5	0.5	100.0	247
Northern	87.2	5.8	0.6	2.8	2.9	0.6	100.0	112
Upper West	64.3	22.8	7.4	4.0	1.5	0.0	100.0	70
Upper East	69.5	5.8	21.8	1.0	0.6	1.3	100.0	162
Mother's education								
No education	75.8	8.1	14.0	0.7	0.9	0.4	100.0	973
Primary	79.8	4.7	11.5	2.4	1.6	0.0	100.0	616
Middle/JSS	82.2	4.6	10.1	1.7	1.2	0.2	100.0	1,270
Secondary+	85.7	1.6	10.2	1.0	1.1	0.3	100.0	316
Marital status								
Currently married	76.5	7.1	15.3	0.4	0.4	0.3	100.0	2,406
Not married	91.4	0.1	0.0	4.8	3.5	0.1	100.0	769
Total	80.1	5.4	11.6	1.5	1.2	0.2	100.0	3,175

Child Care

Table 2.16 shows the percent distribution of working mothers who have a child under six years, by the caretaker of the child when the mother is working. Just over half of working mothers have a child under six years (54 percent). Forty-eight percent of employed mothers with a child under six, look after their own children, 22 percent have relatives other than the husband/partner to look after the child, and 14 percent have the child in school or other institutional care. Six percent of mothers of children under six have another female child to look after the child. Rural women are slightly more likely to look after their own child, whereas urban mothers are more likely to have their child in school or in institutional care. A higher proportion of mothers residing in the Western Region look after their young children. Education varies inversely with child care by respondent. For example, one in two women with no education looks after their own children under six years compared with two in five women with secondary or higher levels of education. Women who work in the agricultural sector are more likely to care for a child themselves than women in non-agricultural occupations. Full time working mothers are more likely to look after their own children than other mothers are, presumably because full time work is more common among self-employed mothers, who do most of their work at home.

Table 2.16 Child care while working

Percent distribution of currently employed women by whether they have a child under six years of age at home, and the percent distribution of employed mothers who have a child under six by person who cares for child while mother is at work, according to selected background characteristics, Ghana 1998

Background characteristic	No child under six at home	One or more children under six at home	Child's caretaker while mother is at work											Total	Number of employed women
			Re-spond-ent	Husband/ partner	Other relative	Neigh-bour/ Friend	Hired help	Child is in school	Other female child	Other male child	Not worked since birth[1]	Other	Missing		
Residence															
Urban	58.3	41.7	42.7	2.4	21.5	1.7	0.5	23.8	3.3	0.8	2.6	0.1	0.7	100.0	1,227
Rural	38.9	61.1	49.4	2.9	22.3	2.4	0.9	10.5	7.2	2.3	1.7	0.2	0.2	100.0	2,338
Region															
Western	44.2	55.8	63.6	1.9	14.6	0.5	0.5	15.0	2.9	0.5	0.0	0.5	0.0	100.0	422
Central	47.5	52.5	59.7	1.7	18.8	0.0	0.6	14.4	3.3	1.1	0.6	0.0	0.0	100.0	426
Greater Accra	60.8	39.2	39.7	2.6	18.5	2.1	1.1	24.3	5.8	1.1	3.7	0.0	1.1	100.0	564
Volta	42.9	57.1	46.1	3.5	20.1	5.1	0.0	11.7	6.5	1.1	6.0	0.0	0.0	100.0	384
Eastern	44.8	55.2	44.1	4.8	23.2	1.3	0.0	18.3	4.8	0.9	1.7	0.5	0.4	100.0	483
Ashanti	42.1	57.9	40.5	2.5	31.5	0.7	1.1	13.8	4.6	2.8	1.8	0.0	0.7	100.0	554
Brong Ahafo	38.9	61.1	50.0	2.1	19.3	2.1	0.0	16.5	6.4	0.7	2.8	0.0	0.0	100.0	265
Northern	35.0	65.0	39.2	2.0	34.4	2.8	4.9	1.3	9.1	5.5	0.0	0.0	0.7	100.0	148
Upper West	37.1	62.9	46.8	2.1	20.5	2.2	0.5	2.7	17.8	7.0	0.5	0.0	0.0	100.0	102
Upper East	39.3	60.7	42.5	3.5	20.9	9.0	2.0	2.0	15.3	4.3	0.0	0.4	0.0	100.0	218
Mother's education															
No education	37.7	62.3	51.0	2.3	21.2	3.4	1.0	7.1	9.5	2.4	1.6	0.3	0.1	100.0	1,158
Primary	42.9	57.1	50.4	3.5	21.8	0.8	0.0	11.0	7.1	2.6	1.8	0.0	0.8	100.0	683
Middle/JSS	49.2	50.8	44.1	2.9	24.2	2.1	0.8	20.1	3.0	1.1	1.7	0.0	0.2	100.0	1,392
Secondary+	63.4	36.6	39.1	2.9	16.6	0.0	2.2	29.1	1.9	0.9	5.8	0.4	1.0	100.0	332
Work status															
For family member	45.5	54.5	56.8	1.4	22.5	0.9	0.7	3.5	9.6	3.0	1.2	0.0	0.3	100.0	355
For someone else	63.5	36.5	38.5	1.6	25.5	2.7	0.6	20.1	3.7	1.2	5.4	0.0	0.6	100.0	491
Self-employed	42.3	57.7	47.5	3.1	21.7	2.3	0.8	14.6	6.0	1.8	1.6	0.2	0.3	100.0	2,718
Occupation															
Agricultural	35.7	64.3	52.3	0.4	20.5	3.1	1.0	10.3	7.8	2.3	1.9	0.2	0.4	100.0	1,160
Nonagricultural	50.3	49.7	44.7	4.3	23.1	1.6	0.7	16.4	5.2	1.6	2.0	0.1	0.3	100.0	2,405
Employment status															
All year, full week	48.7	51.3	50.2	2.4	21.2	1.3	0.4	15.7	4.5	1.2	2.5	0.2	0.4	100.0	2,423
All year, part week	36.9	63.1	40.2	5.2	24.7	1.8	1.0	14.8	8.7	2.3	1.2	0.0	0.0	100.0	604
Seasonal	38.8	61.2	46.3	1.3	22.2	6.8	2.6	6.1	9.6	4.0	0.9	0.0	0.2	100.0	447
Occasional	53.2	46.8	48.4	2.8	25.4	0.0	0.0	9.2	10.4	3.8	0.0	0.0	0.0	100.0	89
Total	45.6	54.4	47.6	2.8	22.1	2.2	0.8	14.0	6.2	1.9	1.9	0.1	0.3	100.0	3,564

Note: Total includes one woman for whom information on work status is missing.
[1] Respondent is currently employed but has not worked since last birth.

CHAPTER 3

FERTILITY

Information on fertility is very crucial for governments, which seek to formulate explicit policies that will help to bridge the gap between high population growth and economic development. In this regard, women age 15-49 were asked about their pregnancy histories. The pregnancy history is designed to improve the completeness and accuracy of information on fertility. Each woman was asked to provide information on the number of sons and daughters living with her, the number living elsewhere, and the number who had died, and the number of pregnancies she had that did not result in a live birth. The woman was then asked to provide a comprehensive pregnancy history, including information about the date of occurrence of all live and non-live births, sex, and survival status of children born alive.

This chapter examines current fertility levels, trends and differentials in fertility, cumulative fertility, birth intervals, age at first birth, and adolescent fertility.

3.1 Current Fertility

Table 3.1 presents information on age-specific fertility rates (ASFR)[1], the total fertility rate (TFR) for women age 15-49 and 15-44, the general fertility rate (GFR), and the crude birth rate (CBR) by residence. These rates were calculated over the five years preceding the survey. The TFR is the sum of the ASFRs and can be interpreted as the number of children a woman would have by the end of her childbearing years if she experienced the prevailing ASFRs. The GFR is defined as the total annual number of births per 1,000 women age 15-44 and the CBR is defined as the total number of live births in a year per 1,000 persons.

Table 3.1 Current fertility

Age-specific and cumulative fertility rates and the crude birth rate for the five years preceding the survey, by urban-rural residence, Ghana 1998

	Residence		
Age group	Urban	Rural	Total
15-19	58	110	90
20-24	123	233	192
25-29	149	239	206
30-34	141	205	183
35-39	82	173	143
40-44	36	101	79
45-49	2	22	16
TFR women 15-49	2.96	5.41	4.55
TFR women 15-44	2.95	5.30	4.46
General fertility rate	103	183	154
Crude birth rate	25.4	36.0	32.7

Note: Rates are for the period 1-59 months preceding the survey. Rates for age group 45-49 may be slightly biased due to truncation. Total fertility rate expressed per woman. General fertility rate (births divided by number of women 15-49), expressed per 1,000 women. Crude birth rate expressed per 1,000 population.

The total fertility rate in Ghana for women age 15-49 is 4.6 births per woman. This means that a Ghanaian woman would have on the average 4.6 children in her lifetime if the current age specific fertility rates were to continue to prevail. The TFR for rural areas (5.4) is about two and a half children more than for urban areas (3.0). This pattern of higher rural fertility is evident at every age. At current fertility levels, a Ghanaian woman would have given birth to more than 2 children by age 30, and more than 3 children (about three-fourths of her lifetime births) by age 35.

[1] Numerators of the ASFRs are calculated by summing the number of live births that occurred in the period 1-59 months preceding the survey (determined by the date of interview and the date of birth of the child), and classifying them by age (in five-year groups) of the mother at the time of birth (determined by the mother's birth date). The denominators of the rates are the number of woman-years lived in each of the specified five-year age groups during the 1-59 months preceding the survey.

3.2 Fertility Differentials

Table 3.2 and Figure 3.1 show differentials in fertility by urban-rural residence, region, and education. There are wide variations in fertility by region, with TFR being lowest in the Greater Accra Region (2.7) and highest in the Northern Region (7.0). Education is inversely related to fertility. Women with no education have more than twice the number of children (5.8) as women with some secondary education (2.8).

The mean number of children ever born to women age 40-49, which is a measure of completed fertility, is also shown in Table 3.2. This measure can be used to assess differentials in fertility trends over time for population subgroups. There has been a marked decline in fertility in urban areas, in most regions, and among most education subgroups. An overall comparison of past and present fertility suggests a recent decline of about one child per woman, from 5.7 to 4.6 children per woman.

Eight percent of women reported that they were pregnant at the time of the survey (Table 3.2). This is an underestimate of the actual percentage of women who were pregnant, since women may not be aware of a pregnancy especially at the very early stages. Moreover, early disclosure of a pregnancy may be discouraged in some cultures. Nevertheless, differentials by current pregnancy status mirror differentials in current fertility.

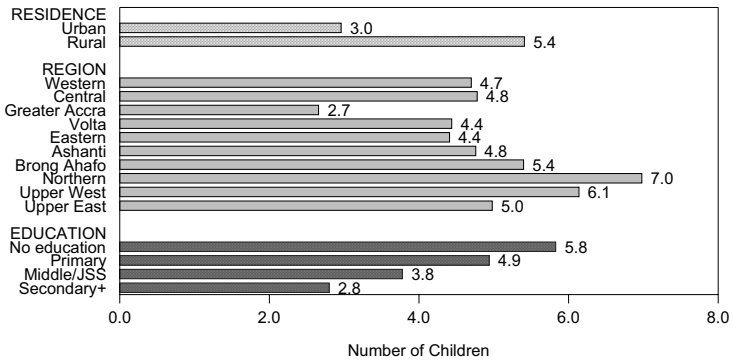
Table 3.2 Fertility by background characteristics

Total fertility rate for the five years preceding the survey, percentage currently pregnant, and mean number of children ever born to women age 40-49, by selected background characteristics, Ghana 1998

Background characteristic	Total fertility rate[1]	Percentage currently pregnant	Mean number of children ever born to women age 40-49
Residence			
Urban	2.96	5.6	4.63
Rural	5.41	9.4	6.15
Region			
Western	4.70	6.2	5.84
Central	4.78	6.3	5.84
Greater Accra	2.66	6.4	4.20
Volta	4.44	7.3	5.71
Eastern	4.41	10.0	5.33
Ashanti	4.76	6.8	5.85
Brong Ahafo	5.40	9.7	6.71
Northern	6.98	15.3	6.65
Upper West	6.14	8.6	6.81
Upper East	4.98	12.1	5.63
Education			
No education	5.83	10.2	6.45
Primary	4.94	7.4	6.22
Middle/JSS	3.78	7.8	4.93
Secondary+	2.80	3.9	3.29
Total	4.55	8.0	5.66

[1] Women age 15-49 years

Figure 3.1
Total Fertility Rates by Selected Background Characteristics



GDHS 1998

3.3 Trends in Fertility

Data from previous demographic surveys, fielded in Ghana over the last decade, can be used to examine the trends in current fertility. Table 3.3 shows the demographic transition experienced in Ghana. The TFR has declined dramatically from 6.4 children per woman in 1988 (GSS and IRD, 1989), to 5.5 children per woman in 1993 (GSS and MI, 1994), and to 4.6 children in 1998, a nearly 2 child drop in fertility over the decade. Figure 3.2 shows that fertility has fallen in every age group, with fertility levels among women under age 35 declining by around 25 percent during the decade between the 1988 and 1998 surveys.

Table 3.3 Trends in fertility

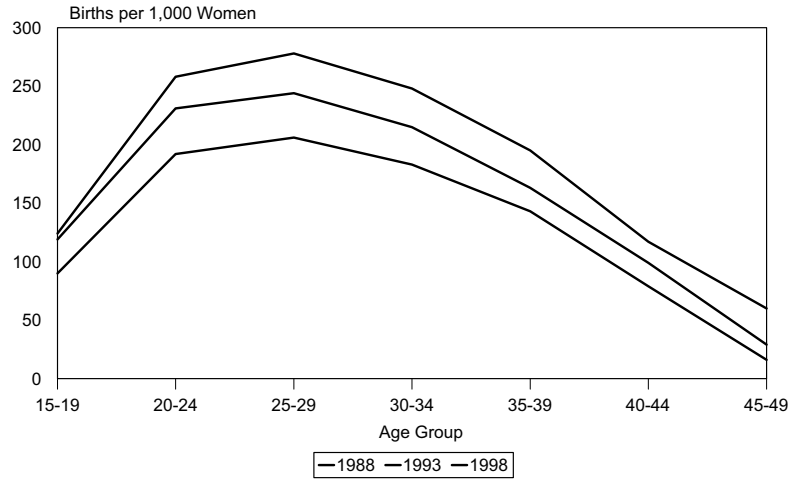
Age-specific fertility rates (per 1,000 women) and total fertility rates for selected surveys, Ghana 1988-1998

Age group	GDHS 1988[a]	GDHS 1993[b]	GDHS 1998
15-19	124	119	90
20-24	258	231	192
25-29	278	244	206
30-34	248	215	183
35-39	195	163	143
40-44	117	99	79
45-49	60	29	16
TFR women age 15-49	6.41	5.50	4.55

Note: Rates refer to the five-year period preceding the survey. Rates for the age group 45-49 may be slightly biased due to truncation.
[a] GSS and IRD, 1989
[b] GSS and MI, 1994

Table 3.4, which shows the ASFRs for five-year periods preceding the survey, provides further evidence of a continuing decline in fertility in Ghana. A substantial and sustained decline in ASFRs is observed from 10-14 years before the survey, which roughly coincides with calendar years 1983-1988, to 0-4 years before the survey, that is, calendar years 1993-1998.

Figure 3.2
Age-Specific Fertility Rates, 1988-1998



Fertility rates for ever-married women by duration since first marriage, for five-year periods preceding the survey, are shown in Table 3.5. This table is analogous to Table 3.4, but is restricted to ever-married women, and replaces age with marital duration. The data confirm a sharp decline in fertility, and indicate that fertility decline is evident at all marital durations.

Table 3.4 Age-specific fertility rates

Age-specific fertility rates for 5-year periods preceding the survey, Ghana 1998

Age group	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
15-19	90	104	117	123
20-24	192	213	242	265
25-29	206	247	257	255
30-34	183	216	241	[267]
35-39	143	162	[182]	-
40-44	79	[97]	-	-
45-49	[16]	-	-	-

Note: Age-specific fertility rates per 1,000 women. Estimates enclosed in brackets are truncated.

Table 3.5 Fertility by marital duration

Fertility rates for ever-married women by number of years since first marriage, for 5-year periods preceding the survey, Ghana 1998

Years since first marriage	Number of years preceding the survey			
	0-4	5-9	10-14	15-19
0-4	264	284	314	327
5-9	224	268	279	288
10-14	192	223	246	265
15-19	141	187	213	276
20-24	114	127	171	[187]
25-29	35	75	[239]	-

Note: Fertility rates per 1,000 women. Estimates enclosed in brackets are truncated.

3.4 Pregnancy Outcome

Unlike earlier demographic and health surveys conducted in Ghana, the 1998 GDHS collected complete pregnancy histories from women. This has yielded information on pregnancy outcomes other than live births. Collecting retrospective information on pregnancies is comparatively more difficult than collecting retrospective birth information. This is particularly so for pregnancies that last only for a few months. Stillbirths and live births are probably more completely reported than early pregnancy losses.[2] Since the total number of pregnancies is likely to be underestimated, caution should be exercised while interpreting these data. Table 3.6 presents the pregnancy outcomes of women 0-9 years before the survey by age of the mother at the time of the outcome and urban-rural residence.

Overall, 12 percent of all pregnancies that occurred in the ten years before the survey did not end in a live birth. There is substantial variation in pregnancy outcomes across age groups (Figure 3.3). Nearly one in four pregnancies to women age 15-19 was lost early, and three percent ended in a stillbirth. In general, younger women (below 25 years) and older women (above 44 years) are more likely to have a pregnancy resulting in a non-live birth. A similar pattern by age is observed in urban and rural areas; however, urban women are much more likely than rural women to report early pregnancy losses. Early pregnancy losses are especially high among urban women age 15-19, with about two in five pregnancies to women in this age group ending in an early pregnancy loss.

[2] Stillbirths are defined as children born dead after a gestation of 28 weeks or more. Early pregnancy losses are pregnancies of less than 28 weeks gestation, that are terminated through spontaneous or induced abortions.

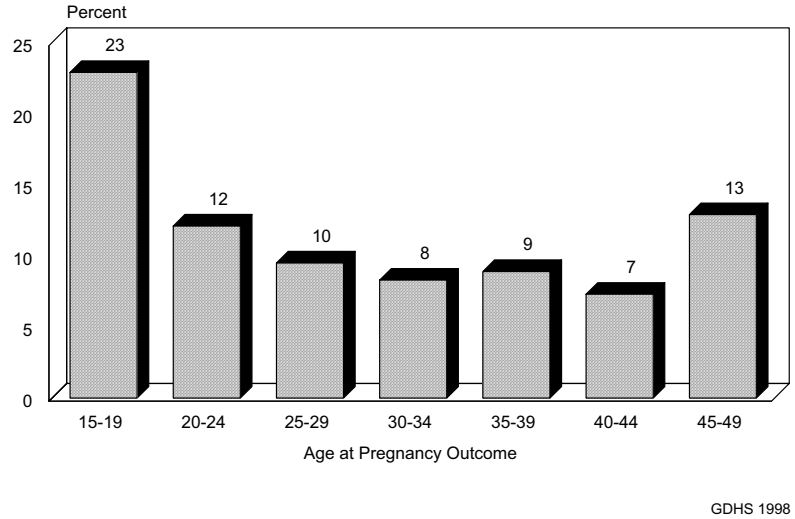
Table 3.6 Pregnancy outcome

Percent distribution of all pregnancies 0-9 years preceding the survey by pregnancy outcome, according to age and residence, Ghana 1998

Age at pregnancy outcome	Pregnancy outcome: Early pregnancy loss	Still-birth	Live birth	Total	Number of pregnancies
		URBAN			
15-19	(38.9)	(2.4)	(58.7)	100.0	41
20-24	17.3	1.5	81.3	100.0	288
25-29	13.1	3.0	83.9	100.0	469
30-34	10.0	1.0	89.0	100.0	458
35-39	13.7	1.1	85.2	100.0	360
40-44	8.3	0.0	91.7	100.0	165
45-49	11.3	8.7	80.0	100.0	82
Total	13.2	1.9	84.9	100.0	1,864
		RURAL			
15-19	17.0	3.0	80.0	100.0	114
20-24	10.2	3.5	86.4	100.0	754
25-29	8.1	1.3	90.6	100.0	1,282
30-34	7.6	1.7	90.7	100.0	1,069
35-39	7.1	1.3	91.6	100.0	1,007
40-44	7.1	2.7	90.3	100.0	680
45-49	13.3	2.5	84.2	100.0	355
Total	8.5	2.0	89.5	100.0	5,261
		TOTAL			
15-19	22.9	2.9	74.3	100.0	155
20-24	12.1	2.9	85.0	100.0	1,042
25-29	9.5	1.8	88.8	100.0	1,751
30-34	8.3	1.5	90.2	100.0	1,528
35-39	8.9	1.2	89.9	100.0	1,368
40-44	7.3	2.1	90.6	100.0	845
45-49	12.9	3.7	83.4	100.0	437
Total	9.7	2.0	88.3	100.0	7,125

Note: Figures in parentheses are based on 25-49 unweighted cases.

Figure 3.3
Early Pregnancy Loss, 1988-1998



3.5 Children Ever Born and Living

Table 3.7 gives the distribution of women by the mean number of children ever born (CEB) and the mean number of children living, by five-year age groups, for all women and currently married women. Information on the mean number of children ever born is useful in examining the variation among different age groups. The effect of age on mean CEB is apparent, with older women reporting higher mean CEB than younger women. On average, women in their late twenties have given birth to 2 children, and this rises to 4.5 children among women in their late thirties, and 6 children among women at the end of their childbearing years. The mean number of children ever born to currently married women is 3.5, which is 32 percent higher than the average for all women. Indeed, about 55 percent of women age 15-19 who are currently married have had at least one birth. This relatively low age at the initiation of childbearing means a very long exposure to the risk of pregnancy and further childbearing.

The data indicate that childlessness declines rapidly with age. About ninety percent of women in the age group 15-19 have never had a child. This reduces to about 40 percent for the 20–24 age group and thereafter declines steeply to 3 percent for women age 45-49 years. A similar pattern is observed for currently married women. The proportion of all women that have never had a child is much higher (29 percent) than for currently married women (9 percent). Currently married women also reported higher CEB than did all women at every age, and especially at younger ages. This suggests that a substantial proportion of childbearing in Ghana takes place within marriage. About two percent of currently married women age 45-49 have not had a child. This is a rough measure of primary infertility in Ghana.

Table 3.7 Children ever born and living

Percent distribution of all women and of currently married women by number of children ever born and mean number of children ever born (CEB) and mean number of living children, according to five-year age groups, Ghana 1998

Age group	Number of children ever born											Total	Number of women	Mean number of CEB	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	88.3	10.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	910	0.13	0.12
20-24	39.2	32.6	20.5	5.4	2.2	0.1	0.0	0.0	0.0	0.0	0.0	100.0	900	0.99	0.89
25-29	17.6	21.8	26.1	19.0	10.5	3.2	1.6	0.3	0.0	0.0	0.0	100.0	867	2.00	1.81
30-34	6.1	10.1	17.1	20.2	20.2	13.4	8.5	3.3	0.5	0.6	0.0	100.0	653	3.36	2.95
35-39	3.2	6.2	10.1	15.4	16.6	15.9	15.7	7.8	5.5	2.1	1.4	100.0	625	4.46	3.88
40-44	1.1	4.6	7.4	10.3	13.1	14.9	14.6	13.7	9.1	6.0	5.2	100.0	473	5.42	4.61
45-49	2.5	2.9	4.3	9.2	11.3	15.2	13.6	12.8	10.1	8.4	9.7	100.0	415	5.93	4.96
Total	28.6	14.8	13.3	10.9	9.4	7.2	6.1	3.9	2.5	1.7	1.5	100.0	4,843	2.63	2.28
CURRENTLY MARRIED WOMEN															
15-19	38.9	55.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	100.0	122	0.67	0.60
20-24	20.1	39.0	30.3	7.5	2.9	0.2	0.0	0.0	0.0	0.0	0.00	100.0	552	1.35	1.23
25-29	8.8	20.4	29.5	22.6	12.6	4.0	1.8	0.4	0.0	0.0	0.00	100.0	674	2.31	2.09
30-34	4.5	8.9	16.1	20.8	21.7	13.8	9.3	3.5	0.6	0.8	0.00	100.0	551	3.51	3.09
35-39	2.4	5.5	8.6	15.4	18.0	15.4	16.7	7.9	5.9	2.5	1.70	100.0	523	4.61	4.01
40-44	0.9	3.4	6.0	9.9	13.2	15.9	14.6	14.5	9.6	6.8	5.30	100.0	402	5.59	4.77
45-49	1.9	1.3	3.8	7.0	9.4	15.8	14.4	15.2	10.0	9.8	11.40	100.0	307	6.30	5.26
Total	8.5	16.4	17.4	14.4	12.7	9.5	8.1	5.4	3.3	2.4	2.10	100.0	3,131	3.48	3.03

3.6 Birth Interval

The interval between births provides useful information on birth spacing patterns. Studies have shown that short (less than 24 months) birth intervals are detrimental to the health of both the mother and child. Maternal health is also threatened by rapid childbearing. Table 3.8 shows the distribution of non-first births in the five years before the survey by birth intervals, according to various demographic and socio-economic variables.

Thirteen percent of non-first births in the five years before the survey occurred less than 24 months after a prior birth. The median birth interval for all women is 38 months. In other words, half of non-first births to women in Ghana occur more than three years after a previous birth. The median birth interval increases with age from 36 months for births to women age 20-29 years to 41 months for births to women age 40 and older. This tendency for older women to have a longer birth interval could be attributed to a likely reduction in fecundity of women as they grow older. There is little difference in the median birth interval by birth order and sex of the child, but the median birth interval is markedly shorter if the previous child has died. Birth intervals are longer in urban than rural areas, and in the Greater Accra and Volta Regions. This could be attributed to urbanisation with its attendant employment in the formal sector and higher contraceptive prevalence. The median birth interval is also longer among mothers with secondary or higher education.

Table 3.8 Birth intervals

Percent distribution of non-first births in the five years preceding the survey by number of months since previous birth and median length of birth interval, according to selected demographic and socioeconomic characteristics, Ghana 1998

Characteristic	Number of months since previous birth					Total	Number of births[1]	Median number of months since previous birth
	7-17	18-23	24-35	36-47	48+			
Age of mother								
20-29	6.1	9.3	34.7	28.4	21.4	100.0	968	35.9
30-39	4.2	7.4	28.2	26.4	33.9	100.0	1,077	39.9
40 +	4.6	9.1	23.9	23.1	39.3	100.0	381	41.0
Birth order								
2-3	5.5	8.7	29.4	27.7	28.8	100.0	1,110	38.2
4-6	4.3	7.2	31.2	25.2	32.1	100.0	918	38.8
7 +	5.3	10.6	30.3	27.3	26.5	100.0	406	37.5
Sex of prior birth								
Male	5.0	8.2	29.2	26.1	31.5	100.0	1,208	38.9
Female	5.0	8.6	31.3	27.2	27.9	100.0	1,226	37.4
Survival of prior birth								
Dead	21.5	15.7	27.5	16.3	19.1	100.0	292	28.8
Living	2.7	7.4	30.6	28.1	31.1	100.0	2,141	39.1
Residence								
Urban	4.3	8.0	22.3	23.7	41.6	100.0	537	42.9
Rural	5.2	8.5	32.5	27.5	26.3	100.0	1,896	37.1
Region								
Western	4.8	9.5	30.8	27.1	27.8	100.0	312	37.9
Central	8.7	8.7	31.5	24.9	26.1	100.0	298	36.5
Greater Accra	3.0	8.6	26.9	22.3	39.1	100.0	230	42.1
Volta	2.4	7.1	26.1	29.2	35.2	100.0	254	41.5
Eastern	3.2	8.8	28.6	27.2	32.2	100.0	332	39.6
Ashanti	5.6	6.2	30.9	29.2	28.1	100.0	369	38.3
Brong Ahafo	4.6	7.4	34.6	24.4	29.0	100.0	203	37.2
Northern	11.0	12.4	35.4	22.3	18.8	100.0	188	33.5
Upper West	4.1	6.6	33.3	31.7	24.2	100.0	84	38.2
Upper East	1.9	9.2	27.0	29.8	32.1	100.0	164	39.2
Education								
No education	5.4	8.6	31.6	27.3	27.1	100.0	1,034	37.6
Primary	3.6	9.3	31.4	29.4	26.2	100.0	496	37.5
Middle/JSS	5.6	7.2	29.3	24.8	33.1	100.0	787	38.6
Secondary+	3.1	11.1	19.4	22.4	44.0	100.0	117	43.1
Total	5.0	8.4	30.2	26.7	29.7	100.0	2,434	38.2

Note: First-order births are excluded. The interval for multiple births is the number of months since the end of the preceding pregnancy that ended in a live birth.

[1] Total includes 7 births to women age 15-19.

3.7 Age at First Birth

Research has shown that women who have their first birth early in life tend to have more children than those who start childbearing later. A rising age at first birth is therefore an important factor contributing to the transition from high to low fertility. Table 3.9 shows the percent distribution of women age 15-49 by age at first birth, according to their current age. The median ages at first birth for women in the age groups 15-19 and 20-24 could not be calculated because less than 50 percent of women in these age groups have had a birth by the beginning of that age group. The median age at first birth for the youngest age cohort (25-29), for which a median could be estimated is 21. For all other age groups the median age at first birth is around 20, indicating that age at first birth has risen in the most recent period. A comparison of the median age at first birth for the age group 25-29 from the 1993 GDHS data (GSS and MI, 1994) confirms that the median age at first birth has risen (from 20 in 1993 to 21 in 1998). Further evidence of the longer term decline is suggested by the fall in the percentage of first births occurring before age 18, from 30 percent in the cohort age 45-49 to 20 percent in the cohort age 20-24.

Table 3.9 Age at first birth

Percent distribution of women 15-49 by age at first birth and median age at first birth, according to current age, Ghana 1998

Current age	Women with no births	Age at first birth						Total	Number of women	Median age at first birth
		<15	15-17	18-19	20-21	22-24	25+			
15-19	88.3	0.3	7.2	4.2	NA	NA	NA	100.0	910	a
20-24	39.2	2.0	17.9	20.7	14.8	5.5	NA	100.0	900	a
25-29	17.6	2.6	18.8	19.4	18.9	14.9	7.8	100.0	867	20.9
30-34	6.1	5.2	21.3	23.1	16.9	15.7	11.7	100.0	653	20.0
35-39	3.2	3.4	21.9	20.9	19.4	17.5	13.8	100.0	625	20.4
40-44	1.1	4.5	23.8	22.4	19.4	16.3	12.6	100.0	473	19.9
45-49	2.5	4.0	25.9	22.0	15.5	14.6	15.6	100.0	415	19.8

NA = Not applicable
[a] The medians for cohorts 15-19 and 20-24 could not be determined because half of the women had not had a birth before reaching the lowest age of the age group.

Table 3.10 summarises the median age at first birth for different cohorts of women by urban-rural residence, region and education. The median age at first birth is higher in urban areas than rural areas for all age groups. Women residing in the Greater Accra Region exhibit the highest median age at first birth (22.0), while residents of the Brong Ahafo (19.6) and Western (19.7) Regions have the lowest. There is a marked difference in the median age at first birth by education with highly educated women giving birth for the first time, five years later, than women with no education.

Table 3.10 Median age at first birth by background characteristics

Median age at first birth among women 25-49, by current age and selected background characteristics, Ghana 1998

Background characteristic	Current age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Urban	22.8	20.9	20.7	20.2	20.4	21.0
Rural	20.4	19.6	20.2	19.8	19.6	20.0
Region						
Western	20.2	19.5	19.1	18.7	21.0	19.7
Central	21.2	18.8	20.4	19.7	20.2	20.0
Greater Accra	24.5	21.8	21.1	21.6	20.9	22.0
Volta	20.9	19.9	21.1	20.0	19.3	20.4
Eastern	20.2	20.2	20.6	19.5	18.3	20.0
Ashanti	20.8	19.7	19.6	19.1	19.9	19.9
Brong Ahafo	20.0	19.7	19.7	19.5	18.5	19.6
Northern	20.6	19.9	20.4	20.4	19.6	20.2
Upper West	20.6	21.3	21.4	21.1	21.0	21.2
Upper East	20.4	19.4	20.8	21.5	23.4	20.8
Education						
No education	19.6	19.7	19.8	20.2	19.6	19.7
Primary	20.2	19.6	20.5	20.1	19.4	20.0
Middle/JSS	21.6	19.8	20.2	19.4	19.6	20.3
Secondary+	a	24.6	23.9	23.3	24.2	24.9
Total	20.9	20.0	20.4	19.9	19.8	20.3

Note: The medians for cohorts 15-19 and 20-24 could not be determined because half of the women had not had a birth before reaching the lowest age of the age group.

[a] Medians were not calculated for this cohort because less than 50 percent of women in the age group 25-29 in this category had a birth by age 25.

3.8 Adolescent Fertility

Evidence from research indicates that children born to very young mothers are at an increased risk of illness and death. Childbearing during adolescence also has adverse consequences for the health of the mother, not to mention the social constraints on young women's ability to pursue educational and employment opportunities. In addition, young mothers may not be emotionally mature to bear the burden of childbearing and rearing. Table 3.11 shows the percentage of adolescent women (age 15-19), who were mothers or were pregnant with their first child at the time of the survey, according to selected background characteristics.

Table 3.11 indicates that about 14 percent of teenagers were already mothers or pregnant with their first child, at the time of the survey. The percentage of teenagers who have begun childbearing increases with age from 2 percent among women age 15 to 32 percent among those age 19. Teenage childbearing is twice as high in the rural areas than in the urban areas. Adolescent childbearing is especially prevalent in the Eastern Region (21 percent), with more than three times as many teenagers having begun childbearing, as in the Greater Accra Region (6 percent). Women with little or no education are about seven times more likely to have begun childbearing earlier than women with some secondary education.

Table 3.11 Adolescent pregnancy and motherhood

Percentage of women 15-19 who are mothers or pregnant with their first child, by selected background characteristics, Ghana 1998

Background characteristic	Percentage who are: Mothers	Pregnant with first child	Percentage who have begun child-bearing	Number of women
Age				
15	0.6	1.1	1.6	215
16	5.0	0.8	5.8	182
17	11.6	2.3	13.9	153
18	18.2	2.9	21.1	202
19	26.4	5.3	31.7	158
Residence				
Urban	6.8	1.6	8.5	341
Rural	14.6	2.8	17.4	569
Region				
Western	9.3	0.0	9.3	123
Central	18.7	0.0	18.7	112
Greater Accra	2.9	2.9	5.8	162
Volta	9.5	1.2	10.7	102
Eastern	17.9	3.3	21.2	104
Ashanti	17.8	1.8	19.6	122
Brong Ahafo	13.8	2.8	16.6	83
Northern	10.4	6.2	16.6	32
Upper West	10.4	6.9	17.3	20
Upper East	5.4	8.6	14.0	48
Education				
No education	17.1	5.0	22.1	127
Primary	18.4	5.1	23.5	169
Middle/JSS	9.7	1.1	10.8	535
Secondary+	2.2	0.7	2.9	79
Total	11.7	2.4	14.1	910

CHAPTER 4

FERTILITY REGULATION

This chapter includes findings on the knowledge and use of family planning, attitude towards family planning, sources of family planning methods, as well as exposure to media messages about family planning. This information is particularly useful for policy makers, programme managers, and researchers in population and family planning, and provides a means to assess the success of the Ghanaian family planning programme. The focus of this chapter is on women, however, some results from the male survey are also presented, since men play an important role in realising women's reproductive goals.

4.1 Knowledge of Contraception

Information on female and male respondents' knowledge of contraception was collected in two ways. Respondents were first asked to mention all the methods of contraception that they had heard of spontaneously. Interviewers then described methods not mentioned spontaneously to see if respondents recognised the method. Thus knowledge of a family planning method in the 1998 GDHS is defined simply as having heard of a method. Table 4.1 shows the percent distribution of women and men by knowledge of contraceptive method. Although the table distinguishes between all and currently married women, the text emphasises currently married women only, since they have the greatest level of exposure to the risk of pregnancy.

Table 4.1 Knowledge of contraceptive methods

Percentage of all women and men, and currently married women and men, who know specific contraceptive methods, Ghana 1998

	Women		Men	
Contraceptive method	All women	Currently married women	All men	Currently married men
Any method	92.9	93.6	94.8	96.3
Any modern method	92.5	93.1	94.6	96.0
Pill	78.4	82.7	72.0	80.6
IUD	49.3	55.0	40.7	50.9
Injectables	77.6	83.4	71.1	81.6
Diaphragm/Foam/Jelly	42.0	45.9	45.2	52.7
Condom	86.8	86.3	92.7	93.7
Female sterilisation	65.4	69.8	62.8	72.2
Male sterilisation	26.3	28.7	33.1	38.9
Implants	21.2	24.3	16.0	20.1
LAM	18.0	21.9	11.5	16.1
Any traditional method	69.4	73.2	69.5	79.4
Periodic abstinence	59.4	61.8	54.2	63.4
Withdrawal	54.5	59.1	59.3	69.0
Other	3.2	4.0	1.9	3.1
Number of respondents	4,843	3,131	1,546	816
Mean number of methods	5.8	6.2	5.6	6.4

LAM = Lactational amenorrhoea method

Generally, contraceptive knowledge in Ghana is very high with 93 percent of currently married women and 96 percent of currently married men knowing at least one modern method of family planning. The condom is the most widely recognised method, with 86 percent of married women and 94 percent of married men having heard of it. This is followed closely by injectables and the pill, recognised by more than 80 percent of married women and men. About seventy percent of married women and men have heard of female sterilisation, but only 29 percent of women and 39 percent of men have heard of male sterilisation. More than one in two married respondents have heard of the IUD, while 46 percent of women and 53 percent of men have heard of vaginal methods (diaphragm, foam and jelly). A relatively smaller percentage of women and men (about 20 percent) have heard of implants or lactational amenorrhoea method (LAM).

Even though traditional methods do not form part of the family planning programme, it is interesting to note that knowledge of these methods is relatively high. Seventy-three percent of married women and 79 percent of married men have heard of a traditional method. Knowledge of periodic abstinence is equally well known to women and men (about 60 percent). However, married men are much more likely to have heard of withdrawal (69 percent) than women (59 percent). Less than five percent of respondents mentioned other methods, like herbs.

Knowledge of family planning methods has increased in the last 10 years, with most of the increase occurring in the five-year period between 1988 and 1993. Contraceptive knowledge among currently married women increased from 79 percent in 1988 (GSS and IRD, 1989), to 91 percent in 1993 (GSS and MI, 1994), and to 94 percent in 1998. While knowledge of modern methods rose from 77 percent to 93 percent in the 10 years between the 1988 and the 1998 GDHS, knowledge of traditional methods rose from 52 percent to 73 percent over the same period.

Table 4.2 shows the distribution of couples in the 1998 GDHS sample of households by contraceptive knowledge. In general, couples' knowledge of family planning methods is high, with 89 percent of couples knowing a modern method. However, couples' knowledge varies by type of method. This difference is especially obvious in the case of vaginal methods, condoms and male sterilisation, where husbands are much more likely to have heard of the methods than wives.

Table 4.2 Couples' knowledge of contraceptive methods

Percent distribution of couples by knowledge of specific contraceptive methods, Ghana 1998

Contraceptive method	Both know method	Husband knows method, not wife	Wife knows method, not husband	Neither know	Total	Number of couples
Any method	90.3	4.5	2.0	3.2	100.0	573
Any modern method	89.4	5.2	2.2	3.2	100.0	573
Pill	70.9	8.5	12.3	8.3	100.0	573
IUD	35.5	14.5	17.2	32.8	100.0	573
Injectables	70.5	10.6	11.6	7.4	100.0	573
Diaphragm/Foam/Jelly	29.8	19.7	13.0	37.5	100.0	573
Condom	81.1	10.6	2.8	5.5	100.0	573
Female sterilisation	56.4	15.7	13.3	14.7	100.0	573
Male sterilisation	17.2	21.1	13.8	47.9	100.0	573
Implants	8.2	10.6	16.3	64.9	100.0	573
LAM	8.6	6.9	13.3	71.1	100.0	573
Any traditional method	64.9	12.1	7.6	15.3	100.0	573
Periodic abstinence	46.5	14.3	13.9	25.2	100.0	573
Withdrawal	48.2	18.5	7.5	25.8	100.0	573
Other	0.7	2.5	4.1	92.7	100.0	573

LAM = Lactational amenorrhoea method

4.2 Knowledge of Source

Knowledge of a source is very crucial in enabling potential users to easily avail themselves of family planning methods. It is also a measure of the extent to which people are aware of the places where family planning services are available and are able to access these services. Table 4.3 presents information on respondents' knowledge of a source of family planning method.

Overall, about eight in ten currently married women know where to obtain a modern method of family planning. Knowledge of a source among currently married women ranges from 20 percent for implants to 68 percent for condoms. Currently married men are relatively more familiar with a source for condoms (80 percent) than any other method (between 16-66 percent). Only 16 percent of women and 12 of men know where to go to obtain advice on LAM. The question on knowledge of a source was also posed to respondents who had heard of periodic abstinence. Thirty-nine percent of women and men know where to go for advice on periodic abstinence.

Table 4.3 Knowledge of source

Percentage of all women and men, and currently married women and men, who know a source, by specific methods, Ghana 1998

Contraceptive method	Women		Men	
	All women	Currently married women	All men	Currently married men
Any method	78.4	81.1	81.6	86.0
Any modern method	78.0	80.6	81.6	86.0
Pill	60.2	64.6	54.4	63.4
IUD	38.2	43.3	31.1	40.3
Injectables	60.1	66.4	55.4	65.8
Diaphragm/Foam/Jelly	32.2	35.7	37.7	44.7
Condom	66.4	67.5	76.7	80.0
Female sterilisation	53.6	58.2	51.9	59.9
Male sterilisation	21.7	24.3	27.5	32.8
Implants	17.0	20.0	12.6	16.0
LAM	12.7	15.7	8.2	11.7
Any traditional method	36.0	38.9	32.5	39.3
Periodic abstinence	36.0	38.9	32.5	39.3
Number of respondents	4,843	3,131	1,546	816

LAM = Lactational amenorrhoea method

4.3 Ever Use of Contraception

All women interviewed in the 1998 GDHS who said they had heard of a method of contraception were further asked if they had ever used a method to avoid or delay a pregnancy. Table 4.4 presents the percentages of all women and currently married women who have ever used a method of family planning by type of method used. One in two currently married women reported ever using a contraceptive method, with 38 percent having ever used a modern method, and 31 percent having ever used a traditional method. The most popular modern method ever used is the pill (18 percent), followed closely by the condom (14 percent). A sizeable number of women also stated ever using periodic abstinence (22 percent) and withdrawal (17 percent). The wide gap between knowledge and ever use could in part be due to the fact that having heard of a method (defined as knowledge in the GDHS) does not necessarily imply the detailed familiarity with a method that may actually lead to its use. Moreover, women who are either pregnant or trying to get pregnant may not yet have the need for family planning even though they may have knowledge of it.

Table 4.4 Ever use of contraception

Percentage of all women and of currently married women who have ever used a contraceptive method, by method and age, Ghana 1998

Age	Any method	Modern method										Traditional method				Number of women
		Any modern method	Pill	IUD	Inject-ables	Diaphragm/ Foam/ Jelly	Condom	Female sterili-sation	Male sterili-sation	Im-plant	LAM	Any tradi-tional method	Periodic absti-nence	With-drawal	Other methods	
ALL WOMEN																
15-19	18.6	12.5	3.6	0.1	0.6	1.0	9.1	0.0	0.0	0.0	0.5	12.0	7.5	8.0	0.4	910
20-24	51.4	36.9	12.3	0.5	3.0	4.7	22.9	0.0	0.0	0.1	3.4	36.0	25.4	21.1	1.3	900
25-29	53.3	37.5	17.8	1.8	6.7	4.7	18.0	0.1	0.0	0.5	3.3	35.6	26.7	21.6	0.9	867
30-34	54.7	38.7	19.3	3.8	8.0	6.0	13.6	0.5	0.0	0.2	5.1	33.2	25.8	16.5	1.9	653
35-39	52.2	41.2	21.3	2.9	10.8	8.6	13.3	1.2	0.0	0.3	4.5	30.0	21.8	15.4	1.5	625
40-44	46.5	38.6	19.1	3.2	8.2	7.7	9.7	3.4	0.0	0.3	4.8	23.4	17.7	8.9	1.6	473
45-49	40.4	31.5	17.6	3.2	8.0	6.6	6.5	3.8	0.3	0.0	3.9	21.9	17.9	7.3	2.2	415
Total	44.7	32.9	14.9	1.9	5.8	5.1	14.2	0.9	0.0	0.2	3.4	27.8	20.4	15.0	1.3	4,843
CURRENTLY MARRIED WOMEN																
15-19	50.1	35.1	13.5	1.0	2.8	1.0	20.0	0.0	0.0	0.0	3.7	30.1	16.5	23.1	2.9	122
20-24	53.3	37.8	13.2	0.9	4.1	5.9	21.1	0.0	0.0	0.2	4.9	36.7	24.2	21.3	1.7	552
25-29	52.0	36.5	19.0	1.9	7.3	4.9	15.1	0.1	0.0	0.2	4.0	33.7	24.3	21.7	1.2	674
30-34	55.1	38.9	19.6	3.6	8.3	5.7	13.3	0.6	0.0	0.2	5.5	32.5	25.0	16.2	1.8	551
35-39	52.2	42.2	20.5	2.8	11.3	8.7	13.2	1.4	0.0	0.4	5.1	28.7	20.7	14.7	1.8	523
40-44	44.3	37.1	18.1	3.7	7.9	7.0	9.5	3.1	0.0	0.2	5.0	23.2	17.3	9.7	1.3	402
45-49	41.9	32.9	17.2	3.9	9.3	7.0	6.9	5.1	0.4	0.0	5.1	22.7	18.1	7.2	2.6	307
Total	50.8	37.8	17.8	2.6	7.7	6.2	14.2	1.3	0.0	0.2	4.8	30.6	22.0	16.6	1.7	3,131

LAM = Lactational amenorrhoea method

4.4 Current Use of Contraceptive Method

Table 4.5 shows the percent distribution of all women and currently married women by current contraceptive use, according to age. The percentage of currently married Ghanaian women using a family planning method at the time of the survey is 22 percent. Current use of a modern method is higher (13 percent) than use of a traditional method (9 percent). The most widely used modern method is the pill (4 percent), followed closely by injectables and condoms (3 percent each). Female sterilisation, vaginal methods, and the IUD are used by about one percent of women each, while less than one percent of women are using LAM. Seven percent of women use periodic abstinence and two percent withdrawal.

Current use of contraception rises with age from 19 percent among women age 15-19, to peak at 26 percent among women age 35-39 (Table 4.5). Use falls among older women, with 16 percent of women in the age group 45-49 using a method. A similar pattern is seen in the use of a modern method, with use being highest at 18 percent among women age 35-39. Use of a traditional method peaks at 11 percent among women age 30-34. Pill use is popular among all but the oldest age group. Injectables are most popular among women age 35-39, but are generally used by all ages. Female sterilisation is more common among older women, while younger women prefer the condom.

Currently married women in urban areas are nearly twice as likely to use any contraceptive method as their rural counterparts (Table 4.6 and Figure 4.1). Seventeen percent of urban women are currently using a modern method compared to 11 percent of rural women. While overall use of a contraceptive method is highest in the Greater Accra Region (32 percent), use of a modern method is highest in the Eastern Region (20 percent). In general, use is lowest in the three northern regions. As expected, education is positively related to contraceptive use, with lowest use among women with no education (13 percent), and highest use among women who have a secondary level education or higher (42 percent). The differentials in use of modern and traditional methods by education show a similar pattern, with the highest level of use among women with a secondary education. Highly educated women are 6 times more likely to use a condom than women with no education, and 5 times more likely to use periodic abstinence. In general, current use increases with the number of children. Nine percent of women with no living child use a modern method of contraception, and this number rises to 17 percent among women with four or more children. Use of the pill, injectables and female sterilisation generally rises with parity, but the reverse is true for the use of condoms. Use of traditional methods rises with parity, peaking among women with three living children, before declining among women with four or more children.

Table 4.5 Current use of contraception

Percentage of all women and currently married women who are currently using a contraceptive method, by method and age, Ghana 1998

Age	Any method	Modern method										Traditional method				Not currently using	Total	Number of women
		Any modern method	Pill	IUD	Inject-ables	Diaphragm/ Foam/ Jelly	Condom	Female sterili-sation	Male sterili-sation	Im-plant	LAM	Any tradi-tional method	Periodic absti-nence	With-drawal	Other methods			
ALL WOMEN																		
15-19	8.6	4.8	1.4	0.0	0.2	0.3	2.8	0.0	0.0	0.0	0.1	3.8	2.4	1.3	0.1	91.4	100.0	910
20-24	19.3	10.4	2.7	0.3	1.7	0.5	4.5	0.0	0.0	0.1	0.7	8.8	6.9	1.9	0.1	80.7	100.0	900
25-29	21.1	12.1	4.0	0.3	2.4	0.5	3.9	0.1	0.0	0.3	0.6	9.0	6.9	1.4	0.7	78.9	100.0	867
30-34	23.5	12.7	4.3	1.4	3.0	1.1	2.0	0.5	0.0	0.1	0.2	10.8	9.2	1.1	0.5	76.5	100.0	653
35-39	23.5	15.4	4.7	0.4	4.7	1.7	2.3	1.2	0.0	0.3	0.2	8.1	5.9	1.6	0.7	76.5	100.0	625
40-44	18.4	12.9	3.4	1.0	2.4	1.2	1.2	3.4	0.0	0.1	0.2	5.5	4.0	1.0	0.5	81.6	100.0	473
45-49	12.2	8.1	0.8	0.6	2.0	0.0	0.6	3.8	0.3	0.0	0.0	4.2	3.7	0.1	0.3	87.8	100.0	415
Total	18.0	10.7	3.1	0.5	2.2	0.7	2.8	0.9	0.0	0.1	0.3	7.4	5.7	1.3	0.4	82.0	100.0	4,843
CURRENTLY MARRIED WOMEN																		
15-19	19.2	12.6	3.8	0.0	1.0	1.0	5.8	0.0	0.0	0.0	0.9	6.6	3.7	1.9	1.0	80.8	100.0	122
20-24	20.7	11.6	3.0	0.4	2.8	0.4	3.6	0.0	0.0	0.2	1.1	9.2	6.8	2.2	0.1	79.3	100.0	552
25-29	22.2	12.6	4.4	0.4	3.0	0.3	3.4	0.1	0.0	0.2	0.8	9.6	7.0	1.8	0.9	77.8	100.0	674
30-34	24.8	13.9	5.1	1.5	3.0	1.4	2.2	0.6	0.0	0.0	0.2	10.9	9.2	1.3	0.4	75.2	100.0	551
35-39	26.3	17.5	5.3	0.4	5.0	2.1	2.7	1.4	0.0	0.3	0.2	8.7	6.5	1.4	0.8	73.7	100.0	523
40-44	19.3	13.1	3.5	1.2	2.5	1.4	1.4	3.1	0.0	0.0	0.0	6.1	4.4	1.1	0.6	80.7	100.0	402
45-49	15.8	10.2	0.9	0.5	2.6	0.0	0.8	5.1	0.4	0.0	0.0	5.6	5.1	0.2	0.4	84.2	100.0	307
Total	22.0	13.3	3.9	0.7	3.1	0.9	2.7	1.3	0.0	0.1	0.5	8.7	6.6	1.5	0.6	78.0	100.0	3,131

LAM = Lactational amenorrhoea method

Table 4.6 Current use of contraception by background characteristics: women

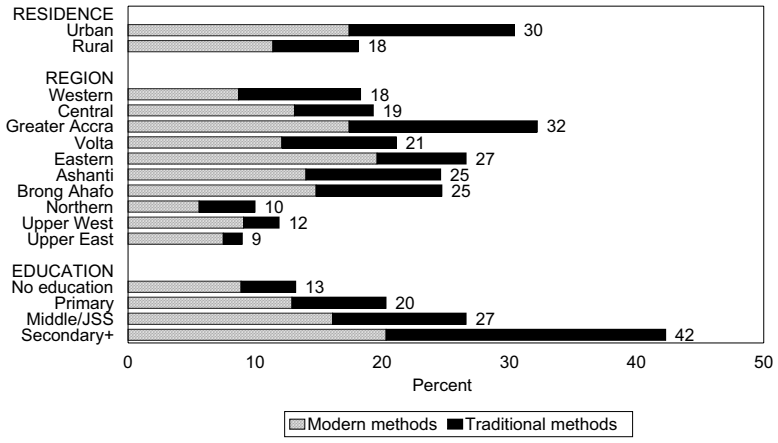
Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, Ghana 1998

Background characteristic	Any method	Modern method										Traditional method				Not currently using	Total	Number of women
		Any modern method	Pill	IUD	Inject-ables	Diaphragm/ Foam/ Jelly	Condom	Female sterili-sation	Male sterili-sation	Im-plant	LAM	Any tradi-tional method	Periodic absti-nence	With-drawal	Other methods			
Residence																		
Urban	30.4	17.4	4.3	1.5	3.8	1.0	3.7	2.1	0.0	0.1	0.8	13.0	11.0	1.8	0.3	69.6	100.0	978
Rural	18.1	11.4	3.8	0.3	2.8	0.9	2.2	0.9	0.1	0.1	0.3	6.7	4.7	1.3	0.7	81.9	100.0	2,153
Region																		
Western	18.3	8.7	3.2	0.0	1.3	0.3	2.3	1.0	0.0	0.0	0.6	9.6	5.5	2.9	1.3	81.7	100.0	356
Central	19.3	13.1	1.5	0.7	4.4	2.9	2.6	0.7	0.0	0.4	0.0	6.2	3.6	1.1	1.5	80.7	100.0	338
Greater Accra	32.2	17.4	4.7	2.1	3.1	0.5	4.2	2.6	0.0	0.3	0.0	14.8	11.9	2.6	0.3	67.8	100.0	449
Volta	21.1	12.1	2.6	0.0	5.5	1.1	1.5	0.7	0.0	0.0	0.8	9.0	6.8	1.8	0.4	78.9	100.0	334
Eastern	26.6	19.6	8.2	0.6	4.1	1.3	4.9	0.5	0.0	0.0	0.0	7.0	5.9	0.9	0.3	73.4	100.0	426
Ashanti	24.6	14.0	4.0	0.7	1.7	0.7	3.1	2.1	0.2	0.2	1.2	10.6	9.2	0.7	0.7	75.4	100.0	491
Brong Ahafo	24.7	14.8	5.9	1.0	2.5	1.5	1.0	2.0	0.0	0.0	1.0	9.9	7.4	2.5	0.0	75.3	100.0	235
Northern	10.0	5.6	2.0	0.3	0.6	0.0	1.0	0.7	0.0	0.0	1.0	4.4	3.7	0.3	0.3	90.0	100.0	196
Upper West	11.9	9.1	2.1	1.0	4.5	0.0	0.3	1.0	0.0	0.0	0.0	2.8	1.8	0.3	0.7	88.1	100.0	97
Upper East	9.0	7.5	1.5	0.3	4.2	0.0	1.2	0.0	0.0	0.2	0.0	1.5	1.2	0.2	0.0	91.0	100.0	209
Education																		
No education	13.2	8.9	2.6	0.5	2.8	0.2	1.1	1.1	0.0	0.1	0.4	4.3	3.2	0.5	0.6	86.8	100.0	1,106
Primary	20.3	12.9	5.0	0.6	2.9	1.0	2.3	0.7	0.0	0.0	0.4	7.4	4.6	2.0	0.8	79.7	100.0	576
Middle/JSS	26.6	16.1	4.8	0.8	3.3	1.5	3.5	1.4	0.1	0.2	0.5	10.5	8.6	1.5	0.4	73.4	100.0	1,197
Secondary+	42.3	20.3	3.2	1.4	4.3	1.4	6.1	2.8	0.0	0.2	0.9	22.0	16.8	4.2	1.0	57.7	100.0	252
No. of living children																		
0	16.0	9.0	2.3	0.4	0.0	0.4	5.9	0.0	0.0	0.0	0.0	7.0	5.8	1.1	0.0	84.0	100.0	304
1	20.4	11.5	3.2	0.0	2.4	0.2	4.0	0.0	0.0	0.2	1.4	8.9	6.2	2.4	0.3	79.6	100.0	576
2	19.4	9.8	4.3	0.4	3.3	0.8	0.4	0.4	0.0	0.0	0.3	9.6	7.2	2.0	0.4	80.6	100.0	588
3	25.6	13.7	3.6	1.9	2.0	1.4	2.7	1.3	0.0	0.3	0.5	11.9	9.6	1.8	0.5	74.4	100.0	512
4+	24.0	17.0	4.7	0.8	4.7	1.3	2.3	2.7	0.1	0.1	0.2	7.1	5.4	0.7	1.0	76.0	100.0	1,150
Total	22.0	13.3	3.9	0.7	3.1	0.9	2.7	1.3	0.0	0.1	0.5	8.7	6.6	1.5	0.6	78.0	100.0	3,131

LAM = Lactational amenorrhoea method

Figure 4.1

Current Use of Family Planning Among Currently Married Women Age 15-49



Current use is much higher among men than women (Table 4.7).[1] Thirty-two percent of men are currently using a method of contraception, 20 percent using a modern method, and 12 percent a traditional method. Much of the male-female difference in current use is due to a difference in condom use. Men are three times (8 percent) as likely as women (3 percent) to report current use of the condom.

There is no clear pattern of variation in contraceptive use with a man's age. Use is highest in the 35-39 age group, and drops markedly from age 50 onwards. Men residing in the Brong Ahafo Region report the highest use of any method, with those from the Brong Ahafo and Greater Accra Regions reporting the highest use of a modern method, and those in the Brong Ahafo and Ashanti Regions reporting the highest use of a traditional method. Pill use is highest in the Brong Ahafo Region, injectables in the Volta Region, condom in the Central Region, and periodic abstinence in the Western Region. The differentials in current use reported by male respondents by urban-rural residence, education and number of living children are similar to those found for currently married women.

[1] Contraceptive use among males is likely to be higher than among females, because men in a polygynous or multi-partner relationship are likely to report use with *any* partner.

Table 4.7 Current use of contraception by background characteristics: men

Percent distribution of currently married men by contraceptive method currently used, according to selected background characteristics, Ghana 1998

Background characteristic	Any method	Modern method										Traditional method				Not currently using	Total	Number of men
		Any modern method	Pill	IUD	Inject-ables	Diaphragm/ Foam/ Jelly	Condom	Female sterili-sation	Male sterili-sation	Im-plant	LAM	Any tradi-tional method	Periodic absti-nence	With-drawal	Other methods			
Age																		
15-19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	9
20-24	29.1	17.9	6.0	0.0	0.0	1.9	10.0	0.0	0.0	0.0	0.0	11.3	6.8	4.4	0.0	70.9	100.0	58
25-29	40.3	23.4	6.8	1.1	3.3	0.0	9.8	0.0	0.0	1.2	1.2	16.9	12.6	3.3	1.1	59.7	100.0	105
30-34	27.6	17.3	5.0	0.7	2.6	0.0	9.0	0.0	0.0	0.0	0.0	10.4	6.1	3.6	0.7	72.4	100.0	164
35-39	41.0	26.9	5.9	0.0	2.7	0.9	13.1	2.7	0.9	0.0	0.8	14.0	11.9	1.7	0.5	59.0	100.0	141
40-44	32.2	21.1	4.6	2.5	6.8	1.1	5.2	0.9	0.0	0.0	0.0	11.1	8.8	1.2	1.2	67.8	100.0	105
45-49	34.7	25.0	6.6	1.4	8.2	0.0	5.5	3.3	0.0	0.0	0.0	9.7	6.6	2.7	0.4	65.3	100.0	88
50-54	18.4	9.0	1.3	0.0	4.4	0.0	2.9	0.4	0.0	0.0	0.0	9.4	5.7	2.9	0.8	81.6	100.0	81
55-59	16.8	9.0	0.0	1.8	1.7	0.0	3.6	1.8	0.0	0.0	0.0	7.8	7.8	0.0	0.0	83.2	100.0	66
Residence																		
Urban	42.3	27.0	5.3	2.5	4.9	0.5	10.8	2.0	0.0	0.5	0.5	15.3	12.2	2.5	0.5	57.7	100.0	247
Rural	26.8	16.9	4.9	0.2	3.2	0.4	7.0	0.7	0.2	0.0	0.2	9.9	6.7	2.4	0.7	73.2	100.0	569
Region																		
Western	37.4	20.1	6.7	0.0	2.9	1.0	9.5	0.0	0.0	0.0	0.0	17.3	13.4	2.9	1.0	62.6	100.0	117
Central	32.6	24.2	3.2	1.8	1.6	1.6	12.7	3.4	0.0	0.0	0.0	8.4	5.0	3.4	0.0	67.4	100.0	76
Greater Accra	39.8	26.2	6.8	3.9	4.9	0.0	8.7	1.9	0.0	0.0	0.0	13.6	11.7	1.9	0.0	60.2	100.0	125
Volta	30.8	17.5	0.0	0.0	8.8	0.0	8.8	0.0	0.0	0.0	0.0	13.3	8.8	4.6	0.0	69.2	100.0	84
Eastern	29.9	22.2	10.1	0.0	2.1	0.0	8.9	0.0	1.0	0.0	0.0	7.7	4.7	3.0	0.0	70.1	100.0	116
Ashanti	28.8	14.2	0.0	0.0	2.2	0.0	7.5	1.1	0.0	1.1	2.1	14.6	11.5	2.1	1.1	71.2	100.0	109
Brong Ahafo	41.1	26.8	12.5	1.8	5.3	1.8	3.6	1.8	0.0	0.0	0.0	14.3	8.9	3.6	1.8	58.9	100.0	65
Northern	20.3	12.2	0.0	0.0	1.3	0.0	9.5	1.4	0.0	0.0	0.0	8.2	5.4	0.0	2.8	79.7	100.0	46
Upper West	(18.9)	(13.7)	(4.0)	(0.0)	(4.1)	(0.0)	(2.8)	(2.8)	(0.0)	(0.0)	(0.0)	(5.2)	(3.9)	(0.0)	(1.4)	(81.1)	100.0	25
Upper East	11.7	11.7	2.9	0.0	4.9	0.0	2.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	88.3	100.0	53
Education																		
No education	11.8	7.7	3.0	0.7	1.7	0.0	1.7	0.6	0.0	0.0	0.0	4.1	1.6	0.7	1.8	88.2	100.0	170
Primary	26.5	17.8	5.7	0.0	0.9	0.0	10.8	0.4	0.0	0.0	0.0	8.7	5.0	3.7	0.0	73.5	100.0	93
Middle/JSS	36.1	23.6	6.0	1.2	5.5	0.6	9.1	0.9	0.3	0.0	0.0	12.5	9.6	2.3	0.5	63.9	100.0	406
Secondary+	44.9	25.6	4.3	0.8	3.2	0.8	11.2	2.8	0.0	0.8	1.6	19.3	15.1	4.1	0.0	55.1	100.0	147
No. of living children																		
0	25.4	18.1	3.8	0.0	0.0	0.0	14.3	0.0	0.0	0.0	0.0	7.3	4.9	2.4	0.0	74.6	100.0	92
1	35.7	19.1	4.1	0.9	3.2	0.8	8.6	0.0	0.0	0.9	0.8	16.5	13.0	3.5	0.0	64.3	100.0	140
2	30.0	19.3	8.7	0.0	2.8	0.0	7.7	0.0	0.0	0.0	0.0	10.7	8.6	1.9	0.3	70.0	100.0	136
3	38.2	24.0	3.0	3.1	1.6	0.0	12.2	2.0	1.0	0.0	1.0	14.3	8.4	4.9	1.0	61.8	100.0	117
4+	29.7	19.8	5.0	0.8	6.1	0.7	5.1	2.1	0.0	0.0	0.0	9.9	7.4	1.4	1.1	70.3	100.0	332
Total	31.5	20.0	5.0	0.9	3.7	0.4	8.2	1.1	0.1	0.1	0.3	11.5	8.4	2.5	0.6	68.5	100.0	816

Note: Percentages in parentheses are based on 25-49 unweighted cases. An asterisk indicates that the data has been suppressed because it is based on less than 25 unweighted cases.
LAM = Lactational amenorrhoea method

4.5 Trends in Contraceptive Use

Table 4.8 and Figure 4.2 show the trend in use of family planning methods among currently married women. The current use of family planning methods has increased from 13 percent in 1988 (GSS and IRD, 1989), to 20 percent in 1993 (GSS and MI, 1994) and to 22 percent in 1998. The use of modern contraceptive methods doubled from five percent in 1988 to 10 percent in 1993, and increased to 13 percent in 1998. The proportionate increase in the current use of contraception among currently married women was higher during the 1988-1993 period than in the 1993-1998 period.

There has been a small but steady increase in the use of the pill, injectables and condoms. Women have also shown some interest in using vaginal methods in the most recent period. There is little change, however, in the use of the IUD and female sterilisation.

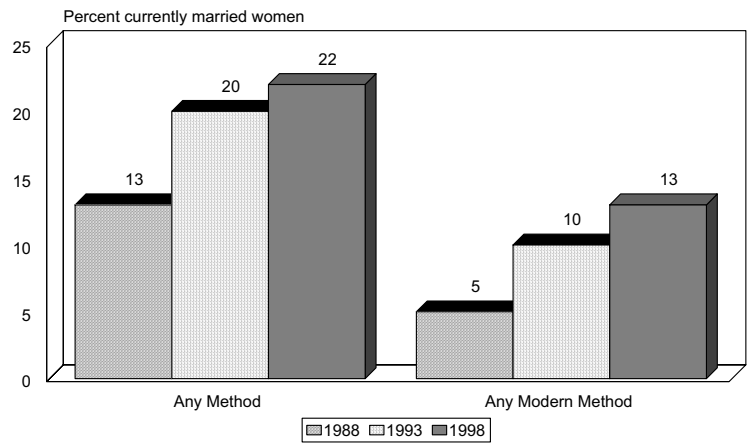
Table 4.8 Trends in current use of contraception

Percentage of currently married women who are currently using a contraceptive method, Ghana 1988-1998

Contraceptive method	1988[1]	1993[2]	1998
Any method	13	20	22
Any modern method	5	10	13
Pill	2	3	4
IUD	1	1	1
Injectables	0	2	3
Diaphragm/Foam/Jelly	0	0	1
Condom	0	2	3
Female sterilisation	1	1	1
Any traditional method	8	10	9
Number of women	3,156	3,204	3,131

[1] GSS and IRD, 1989
[2] GSS and MI, 1994

Figure 4.2
Current Use of Contraceptive Methods
1988-1998



4.6 Number of Children at First Use

The use of contraception may come about as a result of several considerations. Contraceptive methods may be used for limiting births, or spacing births to avoid mistimed or unwanted pregnancies. The 1998 GDHS asked women about the number of living children they had at the time when they first started using a method of contraception.

The results are presented in Table 4.9. Younger women reported first use of contraceptives at lower parities than older women. For example, contraceptive use among women with no children is about 3 times higher for those in the age group 25-29 than among those 45-49 years suggesting a move towards the early use of contraceptives among Ghanaian women, and the desire to delay childbearing. The median number of children at first use among the youngest cohorts of women (age 34 and below) is one child or less, while that for the older cohorts (40 and above) is more than 2 children.

Table 4.9 Number of children at first use of contraception

Percent distribution of ever-married women by number of living children at the time of first use of contraception, and median number of children at first use, according to current age, Ghana 1998

Current age	Never used contra-ception	Number of living children at time of first use of contraception						Total	Number of women	Median number of chil-dren at first use[1]
		0	1	2	3	4+	Missing			
15-19	52.9	38.2	8.2	0.7	0.0	0.0	0.0	100.0	149	0.0
20-24	46.5	30.5	17.0	4.6	0.9	0.2	0.3	100.0	639	0.0
25-29	46.9	18.6	18.8	10.3	3.3	1.9	0.2	100.0	770	0.4
30-34	45.3	12.6	12.4	12.1	8.2	9.5	0.0	100.0	637	1.2
35-39	47.8	7.7	11.1	7.9	10.2	14.8	0.4	100.0	620	1.9
40-44	53.6	5.4	7.0	7.2	5.2	21.5	0.0	100.0	472	2.7
45-49	59.3	5.4	5.8	6.5	6.5	16.5	0.0	100.0	409	2.4
Total	49.2	15.4	12.7	8.0	5.4	9.1	0.1	100.0	3,696	0.8

[1] Among ever-married women who have ever used contraception

4.7 Use of Social Marketing Brands

The 1998 GDHS asked female pill users if they consulted medical personnel at the time of first use, and at the time they last obtained the pill. This information is useful from a health perspective, since pill use is not compatible with certain medical conditions, and its use has to be carefully monitored. Of the 148 pill users, only 59 percent consulted a doctor, nurse, midwife, or pharmacist at the time they first started using the pill, while 49 percent consulted medical personnel at the time they last got the pill (data not shown).

Table 4.10 Pill and condom users by source of brands

Percent distribution of pill and condom users by source of brands used, Ghana 1998

Source	Pill	Condom
Government	18.7	15.8
GSMF	37.2	49.6
Other private	16.9	6.0
Don't know	18.2	28.5
Missing	9.1	0.0
Total	100.0	100.0
Number of users	148	129

Note: Due to the small number of users, a break-down by brand name is not shown.
GSMF = Ghana Social Marketing Foundation

Pill users were also asked for the brand of pill that they were currently using and the cost of a packet of pills. Table 4.10 shows that brands marketed by the Ghana Social Marketing Foundation (GSMF) are more popular, with 37 percent of users using Secure compared to 19 percent using brands sold by the government (Microgynon, Lo-femenal, Overette). The average cost of the most popular brand, Secure, is 404 cedis,[2] the cost of Duofemano Femante, the second most popular brand is 338 cedis, and the cost of Lo-femenal, the third most popular brand is 474 cedis (data not shown).

Male users of the condom were also asked similar questions on brand name and cost. As seen in Table 4.10, the GSMF plays an important role in marketing condoms in Ghana, with one in two condom users using a brand marketed by GSMF (Panther, Champion, and Protector, in order of importance). Only 16

[2] One US$ is equivalent to 2400 cedis.

percent of condom users used a condom marketed by the government (no name brand). Six percent of users used a brand marketed by other private sources (Gold circle, Gold Star). Cost-wise, the condom marketed by the government is cheaper than those marketed by the GSMF. The average cost of the most popular brand of condom, Panther, is 208 cedis, followed by 94 cedis for the Champion and 85 cedis for the condom marketed by the government (data not shown).

4.8 Sources of Supply of Methods

Information on sources of modern contraceptive methods is useful for family planning programme managers. In the 1998 GDHS, women who reported current use of a modern method of contraception were asked where they had obtained the method the last time. Interviewers were instructed to record the name of the source or facility, since often respondents may not always be able to accurately categorise a source as public or private. Supervisors and editors then verified this information. This procedure helped in improving the accuracy of the information on source of contraceptives.

Table 4.11 indicates that both the public and private sectors are equally important sources of supply for users of modern methods (47 percent and 45 percent, respectively). Within the private sector, drug stores are an important source, supplying 32 percent of all current users. Six percent of users also mentioned

Table 4.11 Source of supply for modern contraceptive methods

Percent distribution of current users of modern contraceptive methods by most recent source of supply, according to specific methods, Ghana 1998

Source of supply	Pill	Inject-ables	Diaphragm Foam/ Jelly	Condom	Female sterili-sation	All modern methods[1]
Public sector	33.3	88.0	(17.3)	15.9	(78.7)	47.3
Government hospital	12.9	54.4	(0.0)	6.1	(78.7)	28.9
Government health centre	9.7	21.8	(3.4)	2.6	(0.0)	8.9
Family planning clinic	8.8	9.3	(10.3)	6.3	(0.0)	7.9
Mobile clinic	0.0	0.3	(0.0)	0.9	(0.0)	0.3
Fieldworker	1.9	2.2	(3.5)	0.0	(0.0)	1.3
Private medical	60.1	10.9	(75.7)	68.1	(21.3)	44.8
Private hospital/clinic	1.4	3.1	(0.0)	0.0	(21.3)	3.4
Pharmacy	6.4	0.0	(13.7)	7.3	(0.0)	4.7
Chemist	0.8	0.0	(0.0)	3.5	(0.0)	1.2
Drug store	46.0	0.0	(58.7)	57.3	(0.0)	32.2
Mobile clinic	1.5	1.1	(3.2)	0.0	(0.0)	0.9
Fieldworker	1.6	1.2	(0.0)	0.0	(0.0)	0.7
Maternity home	2.4	5.6	(0.0)	0.0	(0.0)	1.9
Other private	4.4	1.1	(7.1)	15.3	(0.0)	6.8
Church	0.0	1.1	(0.0)	0.0	(0.0)	0.2
Friends/relatives	1.2	0.0	(7.1)	13.4	(0.0)	5.1
Other	3.1	0.0	(0.0)	1.9	(0.0)	1.4
Don't know/missing	2.3	0.0	(0.0)	0.8	(0.0)	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	148	107	35	135	43	516

Note: Figures in parentheses are based on 25-49 (unweighted) cases.
[1] Total includes 24 users of the IUD, 1 user of male sterilisation, 6 users of implants and 16 users of lactational amenorrhoea method (LAM).

pharmacies or chemists as their source. The private sector is twice as likely as the public sector to supply the pill. Forty-six percent of users obtain the pill from drug stores. Injectables are predominantly supplied through government hospitals (54 percent), with 22 percent of users obtaining it from government health centres. Vaginal methods are mostly obtained through the private sector, and especially through drug stores. Sixty-eight percent of condom users cited a private source, of which drug stores were the principal outlet. Female sterilisation is mostly performed in government hospitals.

4.9 Future Use of Contraception

All currently married women and men who were not using contraception at the time of the survey were asked if they would like to use a method at anytime in the future. Information on respondents' intention to use family planning can be used to assess the potential for changes in the demand for family planning in the future. Table 4.12 shows the distribution of currently married women and men by their intention to use a contraceptive method in the future.

Table 4.12 Future use of contraception

Percent distribution of currently married women and men who are not using a contraceptive method by intention to use a method in the future, according to number of living children (women), Ghana 1998

	Number of living children[1]						
Future use of contraception	0	1	2	3	4+	Total women	Total men
Intend to use in next 12 months	8.4	30.6	34.0	28.1	32.8	30.1	27.0
Intend to use later	24.2	20.8	18.6	15.9	10.9	16.1	17.7
Unsure as to timing	1.6	2.4	1.8	1.5	1.7	1.8	1.4
Unsure as to intention	9.1	9.3	6.8	5.4	4.8	6.4	6.2
Do not intend to use	56.7	36.6	38.9	49.0	49.6	45.4	47.3
Don't know/Missing	0.0	0.3	0.0	0.0	0.2	0.1	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	173	454	487	402	927	2,443	559

[1] Includes current pregnancy

Forty-eight percent of currently married women and forty-six percent of currently married men who were not using any contraceptive method at the time of the survey said that they intend to use family planning in the future. Thirty percent of female nonusers intend to use a method within the next 12 months, 16 percent intend to use later, and 2 percent were unsure about the timing of use.

Forty-five percent of currently married women and forty-seven percent of currently married men who were nonusers said that they did not intend to practise family planning in the future. Six percent each of women and men were unsure about using a method of contraception in the future.

There are variations in the proportion of women intending to use family planning, and in the timing of use, with respect to the number of living children. Childless nonusers are much less likely to use within the next 12 months (8 percent), than women with children (around 30 percent). Furthermore, the proportion that intends to use decreases with parity. For example, 54 percent of nonusers with one child intend to use a method in the future compared with 45 percent of nonusers with four or more children.

4.10 Reasons for Nonuse

An understanding of the reasons why people do not like to use family planning methods is very critical in designing programmes that could improve the quality of service. Thus, in the 1998 GDHS respondents who were not using family planning at the time of the survey and said they did not want to use in the future were asked why they did not intend to use.

Table 4.13 Reasons for not intending to use contraception

Percent distribution of currently married women and men who are not using a contraceptive method and who do not intend to use in the future, by main reason for not intending to use, according to age (women), Ghana 1998

Reason for not intending to use contraception	Age		Total women	Total men
	<30	30-49		
Infrequent sex	1.9	2.6	2.4	4.6
Menopausal/hysterectomy	0.0	16.6	11.6	11.8
Subfecund/infecund	3.0	10.3	8.1	4.6
Wants more children	21.2	18.1	19.0	24.6
Respondent opposed	16.2	11.9	13.2	18.4
Partner opposed	4.8	1.3	2.4	0.0
Others opposed	0.3	0.0	0.1	0.4
Religious prohibition	9.8	5.4	6.7	12.2
Knows no method	6.5	3.8	4.6	2.6
Knows no source	1.6	1.5	1.5	2.1
Health concerns	3.1	4.7	4.2	1.0
Fear side effects	23.7	15.7	18.1	9.3
Lack of access	0.0	0.2	0.1	0.2
Costs too much	0.8	0.8	0.8	0.9
Inconvenient to use	1.7	1.5	1.6	2.2
Interferes with body processes	1.0	2.7	2.2	2.0
Other	1.4	0.7	0.9	0.4
Don't know	2.6	2.2	2.3	2.4
Missing	0.5	0.0	0.2	0.1
Total	100.0	100.0	100.0	100.0
Number	338	772	1,110	264

Various reasons for nonuse are given in Table 4.13. The most common reason given for nonuse among women under age 30 is fear of side effects (24 percent). Twenty-one percent of younger women also stated that they, or their partners, or someone else was opposed to the use of contraceptive methods. There has been a more than three-fold increase in the percent of respondents opposed to the use of family planning since 1993 (GSS and MI, 1994). The substantial proportions of women not wanting to use contraceptive methods for these two reasons suggest that there is substantial scope for the family planning programme in Ghana to increase contraceptive use by providing information, and counselling to dispel misconceptions about using contraception. The desire for additional children is also a common reason for nonuse. One in five women stated that she was not using because she wanted more children. Among older women, lack of exposure to the risk of pregnancy is a frequent reason for nonuse; 27 percent of women age 30 and older stated that they do not intend to use a method of contraception in the future because they are menopausal, or have had a hysterectomy or believe themselves to be subfecund or infecund.

Younger men are twice as likely as women or older men to state that they do not want to use a contraceptive method because they want more children (data not shown). Nineteen percent of male respondents cited opposition to use (by self, partner or someone else), as a reason for nonuse (Table 4.13). Twice as many men as women cited religious prohibition as a reason for nonuse in the future. Sixteen percent of men stated that their wives are menopausal or have had a hysterectomy, or that they believed themselves to be subfecund or infecund. Fear of side effects is cited by nine percent of men.

4.11 Preferred Method

Currently married female nonusers who expressed an interest in using family planning in the future were asked to name their preferred method. Table 4.14 shows the distribution of currently married women by preferred future method.

Thirty-six percent of women prefer injectables, and 21 percent prefer the pill as a future method. There is little difference in preference between women who intend to use in the next 12 months and those who intend to use later for most methods, with the exception that female sterilisation is, not surprisingly, somewhat more often cited as the preferred method by women who intend to use later. A sizeable proportion of women (8 percent) also cited periodic abstinence as a preferred method for use in the future.

Table 4.14 Preferred method of contraception for future use

Percent distribution of currently married women who are not using a contraceptive method but who intend to use in the future by preferred method, according to timing of intended use, Ghana 1998

Preferred method of contraception	Timing of intended use: In next 12 months	Timing of intended use: After 12 months	Timing of intended use: Unsure about timing	All women
Pill	22.7	17.8	18.5	20.9
IUD	2.2	2.2	0.0	2.1
Injectables	36.5	36.0	24.3	35.9
Diaphragm/foam/jelly	1.1	0.4	0.0	0.9
Condom	4.1	4.2	6.4	4.2
Female sterilisation	2.8	4.4	4.9	3.4
Implants	3.3	5.6	0.0	3.9
Periodic abstinence	7.9	7.7	10.4	7.9
Withdrawal	1.3	0.0	0.0	0.8
Other method	4.7	8.0	13.3	6.2
Don't know	13.2	13.7	22.2	13.7
Total	100.0	100.0	100.0	100.0
Number	736	392	43	1,172

4.12 Exposure to Family Planning Messages

The media constitute an important tool for disseminating information on family planning. As such, information on the level of exposure to the media is useful for policymakers and programmers to effectively target population subgroups for information, education and communication (IEC) campaigns. Female and male respondents in the 1998 GDHS were asked if they had heard any family planning message over the radio and/or the television in the few months preceding the interview. Table 4.15 shows the percent distribution of female and male respondents by exposure to family planning messages on the radio and/or the television.

The radio appears to be a much more important source of information on family planning than the television. Thirty-two percent of women and 39 percent of men reported that they had heard a family planning message on both the radio and television. Family planning messages were heard on the radio alone by 19 percent of women and 24 percent of men. Relatively few respondents heard messages only on the television, probably because very few households own a television set. Nearly one in two women and one in three men have not heard a family planning message on either the radio or television.

Among women, the relationship between media exposure and age is U-shaped, with women in the youngest and oldest age groups least exposed to media messages on family planning. Urban women are more likely to be exposed to family planning messages through either the radio or television than rural women (71 percent versus 44 percent). Residents of the Volta, Upper West and Upper East Regions are least exposed to media messages on family planning. Not surprisingly, education is directly related to media exposure on family planning. Women with at least secondary education are more than twice as likely to have heard a family planning message on the radio or television, than women with no education, with nearly two in three women with no education not exposed to any family planning. Even among the highly educated women this proportion is one in five, suggesting that information campaigns may need to be designed to reach people in more ways than just through the electronic media.

Table 4.15 Heard about family planning on radio and television

Percent distribution of women and of men by whether they heard a radio and/or television message about family planning in the few months prior to the interview, according to selected background characteristics (women), Ghana 1998

Background characteristic	Heard on both radio and TV	Radio only	Tele-vision only	Heard on neither	Missing	Total	Number of respondents
Age							
15-19	26.3	15.7	4.5	53.4	0.0	100.0	910
20-24	32.2	18.0	3.8	45.9	0.0	100.0	900
25-29	35.5	21.4	1.8	41.3	0.0	100.0	867
30-34	34.0	20.2	2.3	43.4	0.1	100.0	653
35-39	32.6	20.9	1.5	45.0	0.0	100.0	625
40-44	33.1	18.1	1.5	47.1	0.2	100.0	473
45-49	26.9	22.4	1.3	49.1	0.3	100.0	415
Residence							
Urban	54.1	12.9	3.9	29.0	0.0	100.0	1,739
Rural	19.0	22.8	1.9	56.2	0.1	100.0	3,104
Region							
Western	22.7	23.3	3.1	50.9	0.0	100.0	593
Central	29.1	18.8	2.0	50.1	0.0	100.0	552
Greater Accra	62.7	8.4	4.6	24.2	0.1	100.0	808
Volta	9.7	23.7	0.9	65.7	0.0	100.0	535
Eastern	34.3	17.6	3.0	45.2	0.0	100.0	628
Ashanti	41.1	21.5	1.5	36.0	0.0	100.0	728
Brong Ahafo	27.4	22.9	3.6	45.8	0.3	100.0	358
Northern	14.3	20.6	2.2	62.6	0.3	100.0	234
Upper West	7.0	18.3	2.0	72.7	0.0	100.0	120
Upper East	8.7	26.6	2.2	62.5	0.0	100.0	288
Education							
No education	13.4	20.3	1.4	64.9	0.1	100.0	1,410
Primary	27.0	20.1	3.4	49.3	0.1	100.0	874
Middle/JSS	38.9	19.0	2.9	39.3	0.0	100.0	2,056
Secondary+	61.4	16.0	3.7	18.8	0.0	100.0	502
Total women	31.6	19.2	2.6	46.4	0.1	100.0	4,843
Total men	39.1	24.1	2.9	33.9	0.0	100.0	1,546

4.13 Acceptability of Family Planning Messages on the Radio and Television

All respondents were asked whether they approve of the broadcast of family planning messages on the radio or television. Table 4.16 presents the distribution of all female and male respondents by acceptability of family planning on the radio and television, and by background characteristics for women.

Overall, the large majority of women (82 percent) and men (84 percent) approve of family planning broadcasts on the radio and television. Only 10 percent of women and men stated that it was not acceptable for family planning messages to be broadcast on the radio or television. There is no clear pattern of variation in acceptability of family planning messages in the media by women's age. Media messages on family planning are somewhat more acceptable among urban and educated respondents. Residents in the Upper East Region are least likely to object to media messages on family planning. However, one in four of these residents is also unsure about the acceptability of family planning messages in the media.

Table 4.16 Acceptability of media messages on family planning

Percentage distribution of women and men by acceptability of messages about family planning on the radio and television, by selected background characteristics for women, Ghana 1998

Background characteristic	Acceptability of radio messages: Not acceptable	Acceptable	Unsure	Total	Number of respondents
Age					
15-19	13.0	75.9	11.2	100.0	910
20-24	9.0	85.0	6.0	100.0	900
25-29	7.4	85.9	6.6	100.0	867
30-34	11.0	81.8	7.3	100.0	653
35-39	9.4	85.7	4.9	100.0	625
40-44	13.2	79.6	7.2	100.0	473
45-49	11.9	78.4	9.7	100.0	415
Residence					
Urban	8.1	87.1	4.9	100.0	1,739
Rural	11.8	79.2	9.0	100.0	3,104
Region					
Western	16.2	79.0	4.8	100.0	593
Central	16.6	76.7	6.7	100.0	552
Greater Accra	6.7	89.1	4.2	100.0	808
Volta	8.7	78.9	12.4	100.0	535
Eastern	9.5	87.2	3.3	100.0	628
Ashanti	8.3	86.1	5.6	100.0	728
Brong Ahafo	11.9	85.8	2.2	100.0	358
Northern	13.8	69.8	16.5	100.0	234
Upper West	11.2	70.4	18.4	100.0	120
Upper East	3.3	72.5	24.2	100.0	288
Education					
No education	13.5	70.6	15.9	100.0	1,410
Primary	11.3	82.7	6.0	100.0	874
Middle/JSS	9.5	86.7	3.9	100.0	2,056
Secondary+	4.4	93.7	1.9	100.0	502
Total women	10.4	82.0	7.5	100.0	4,843
Total men	9.5	84.1	6.4	100.0	1,546

4.14 Exposure to Family Planning Messages Through the Print Media

The survey also collected information on respondents' exposure to family planning messages through the print media. The result is presented in Table 4.17.

One in three women is exposed to family planning messages in the print media. Women are more likely to read about family planning in posters (33 percent) than in magazines (11 percent) or in leaflets or brochures (8 percent). Men are more likely than women to be exposed to family planning messages in the print media (44 percent).

Women in the peak childbearing ages have the greatest exposure to the print media, as are urban women and women residing in the Brong Ahafo Region. Exposure to the print media increases as women's level of education rises, with educated women being four times as likely to be exposed to family planning messages in print as women with no education. These differences are even more marked when looking at women's exposure to messages in the newspapers or magazines.

Table 4.17 Exposure to family planning messages in print

Percentage of women and men who have read a family planning message in the print media in the few months prior to the interview, according to selected background characteristics (women), Ghana 1998

Background characteristic	Any print source	Newspaper/ Magazine	Poster	Leaflet/ Brochure	All women
Age					
15-19	30.4	10.1	26.9	5.9	910
20-24	39.1	11.1	37.1	8.3	900
25-29	34.6	10.1	33.2	6.9	867
30-34	37.6	12.4	34.7	9.4	653
35-39	35.2	11.1	32.2	6.7	625
40-44	35.0	8.8	32.4	7.3	473
45-49	32.8	10.4	30.2	9.6	415
Residence					
Urban	47.6	21.1	42.3	13.2	1,739
Rural	27.9	4.8	27.0	4.4	3,104
Region					
Western	24.7	6.7	23.3	9.8	593
Central	33.5	6.5	32.9	4.9	552
Greater Accra	48.7	28.4	39.7	16.2	808
Volta	17.3	6.8	15.4	3.1	535
Eastern	35.6	10.0	34.0	6.8	628
Ashanti	45.2	9.8	44.6	6.1	728
Brong Ahafo	60.2	3.3	57.9	6.8	358
Northern	17.2	4.3	16.4	2.5	234
Upper West	27.3	2.5	26.5	5.9	120
Upper East	13.1	4.7	12.2	3.5	288
Education					
No education	18.8	0.8	18.4	1.4	1,410
Primary	31.0	4.0	29.6	4.4	874
Middle/JSS	39.3	11.3	36.7	8.0	2,056
Secondary+	69.8	46.8	59.9	28.4	502
Total women	35.0	10.6	32.5	7.6	4,843
Total men	43.9	22.7	39.5	14.4	1,546

4.15 Discussion of Family Planning Between Spouses

The absence of spousal discussion on contraceptive use can be a serious impediment for the adoption of family planning. Inter-spousal communication is thus an important step towards the eventual adoption and sustained use of contraceptive methods. Table 4.18 shows inter-spousal communication on the practice of family planning.

Nearly one in two women have never discussed the practice of family planning with their husbands. Just over one in four women have discussed family planning once or twice, while a similar percentage said they had talked with their spouse more often. A lack of discussion could reflect a lack of personal interest, or the presence of hostility or reticence in discussing such matters openly. Women age 25-39 report more frequent inter-spousal communication on the practice of family planning than other women.

Table 4.18 Discussion of family planning with husband

Percent distribution of currently married nonsterilised women knowing a contraceptive method by the number of times they discussed family planning with their husband in the past year, according to current age, Ghana 1998

Age	Number of times family planning discussed with husband			Missing	Total	Number of women
	Never	Once or twice	More often			
15-19	45.6	34.0	20.4	0.0	100.0	112
20-24	47.5	27.1	25.2	0.2	100.0	518
25-29	41.7	28.2	30.1	0.0	100.0	639
30-34	42.6	30.5	26.7	0.1	100.0	520
35-39	43.8	28.2	28.1	0.0	100.0	501
40-44	50.4	26.0	23.5	0.0	100.0	368
45-49	56.0	24.4	19.6	0.0	100.0	273
Total	45.8	28.0	26.1	0.1	100.0	2,930

4.16 Attitudes of Couples Toward Family Planning

A positive attitude towards family planning facilitates its use. Currently married women were asked whether they approved or disapproved of couples using a family planning method, and how they perceived their husband's attitude towards family planning. Table 4.19 shows the percent distribution of currently married women who know of a contraceptive method by wife's attitude toward family planning and wife's perception of her husband's attitude toward family planning, according to selected background characteristics.

Most women (77 percent) approve of the use of family planning and only 16 percent state that they disapprove. With regard to their husband's attitude, three in five believe that their husband approves of family planning. A sizeable percentage of women (29 percent) are unsure or state that they do not know what their husband's attitude towards family planning is. Only ten percent of women believe that their husband disapproves of family planning.

Urban women are more likely to approve of family planning use and to believe that their husband agrees than rural women (62 percent versus 49 percent), as are women residing in the Greater Accra Region compared to residents of the other regions. Joint approval is positively related to education. Seventy-three percent of women with secondary education report that both they and their husbands approve of family planning compared to only 42 percent of women with no education.

Table 4.19 Wife's perception of husband's attitude toward family planning

Percent distribution of currently married, nonsterilised women who know of a contraceptive method by wife's attitude toward family planning and wife's perception of her husband's attitude toward family planning, according to selected background characteristics, Ghana 1998

Background characteristic	Woman approves			Woman disapproves			Wife unsure	Missing	Total	Wife approves	Husband approves[1]	Number of women
	Both approve	Husband disapproves	Husband's attitude unknown	Both disapprove	Husband approves	Husband's attitude unknown						
Age												
15-19	50.6	9.7	19.7	1.1	8.6	5.2	5.1	0.0	100.0	80.0	51.7	112
20-24	54.1	5.9	18.0	1.6	7.0	7.2	5.8	0.3	100.0	78.3	56.4	518
25-29	58.9	7.8	16.0	1.1	5.5	4.2	6.7	0.0	100.0	82.6	60.4	639
30-34	54.7	8.8	13.1	1.5	8.7	7.0	6.3	0.0	100.0	76.5	56.2	520
35-39	52.5	9.2	13.6	1.6	9.3	5.4	8.1	0.2	100.0	75.3	55.9	501
40-44	50.9	8.2	13.4	2.8	9.4	8.7	6.4	0.2	100.0	72.5	54.9	368
45-49	42.5	9.3	21.8	3.3	5.6	7.0	10.6	0.0	100.0	73.6	47.2	273
Residence												
Urban	61.7	6.1	12.5	2.2	6.5	5.1	5.7	0.2	100.0	80.3	65.2	953
Rural	49.3	9.1	17.3	1.5	8.1	6.9	7.6	0.1	100.0	75.9	51.5	1,977
Region												
Western	44.9	8.9	16.8	1.3	8.6	9.6	9.9	0.0	100.0	70.6	47.5	346
Central	53.9	5.6	11.9	2.2	13.4	7.1	5.9	0.0	100.0	71.4	56.5	332
Greater Accra	66.8	7.6	8.2	2.6	5.8	4.0	4.7	0.3	100.0	82.6	70.0	444
Volta	52.4	10.7	17.8	1.1	7.6	5.7	4.7	0.0	100.0	80.9	54.7	315
Eastern	55.9	9.5	14.8	2.2	8.5	5.9	3.3	0.0	100.0	80.2	58.9	416
Ashanti	54.6	7.0	16.2	1.2	5.8	4.4	10.5	0.2	100.0	78.1	56.8	474
Brong Ahafo	60.3	8.2	18.6	2.0	5.2	2.6	3.1	0.0	100.0	87.1	62.4	224
Northern	37.3	10.6	24.2	2.3	7.9	6.5	10.7	0.4	100.0	72.1	40.5	143
Upper West	30.7	10.1	32.2	1.4	6.8	9.7	9.1	0.0	100.0	73.0	32.6	71
Upper East	39.9	5.1	20.9	0.3	5.1	15.2	13.3	0.3	100.0	65.8	41.8	165
Education												
No education	41.8	8.5	18.8	1.4	9.9	7.9	11.4	0.2	100.0	69.2	44.3	934
Primary	49.8	8.3	16.4	2.1	8.3	6.3	8.8	0.0	100.0	74.5	53.1	562
Middle/JSS	60.1	8.2	14.5	2.1	6.6	5.4	3.1	0.0	100.0	82.8	62.6	1,183
Secondary+	72.7	6.5	8.8	0.9	2.1	4.3	4.3	0.5	100.0	88.0	74.0	251
Total	53.4	8.1	15.8	1.8	7.6	6.3	7.0	0.1	100.0	77.3	55.9	2,930

[1] Includes women who are unsure about their own attitude, but know their husband's attitude

CHAPTER 5

OTHER PROXIMATE DETERMINANTS OF FERTILITY

This chapter examines the principal factors, other than contraception, that affect a woman's risk of becoming pregnant. These include nuptiality, sexual activity, postpartum amenorrhoea and abstinence from sexual relations, and termination of exposure to pregnancy. Marriage and sexual relations relate to childbearing, postpartum amenorrhoea and abstinence affect the intervals between births, while menopause marks the end of childbearing. Collectively, these factors determine the duration and pace of reproductive activity, and hence are important in understanding fertility.

5.1 Marital Status

The distribution of women and men by marital status is shown in Table 5.1. The data show that one in four (24 percent) Ghanaian women of reproductive age has never been married, over half (52 percent) are married, that is, in formal unions, while 13 percent are living together in informal unions. The term "currently married" used throughout this report includes both women who are in a formal as well as in an informal union. The widowed and divorced constitute 2 percent and 5 percent, respectively.

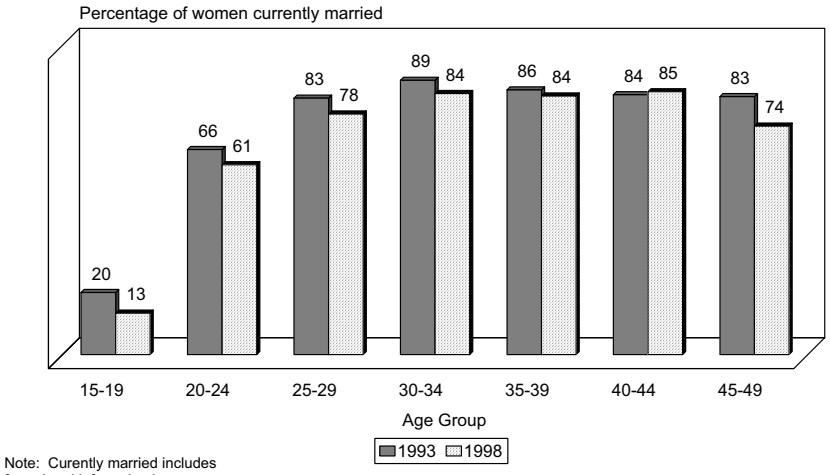
Table 5.1 Current marital status

Percent distribution of women and men by current marital status, according to age, Ghana 1998

Age	Current marital status						Total	Number of women/ men
	Never married	Married	Living together	Widowed	Divorced	Not living together		
				WOMEN				
15-19	83.6	6.5	6.9	0.0	0.1	2.9	100.0	910
20-24	29.0	42.4	19.0	0.3	1.8	7.6	100.0	900
25-29	11.2	60.2	17.6	0.6	4.2	6.2	100.0	867
30-34	2.3	72.8	11.6	1.8	5.3	6.2	100.0	653
35-39	0.9	71.5	12.1	2.2	8.1	5.1	100.0	625
40-44	0.2	74.9	10.1	3.7	7.1	4.0	100.0	473
45-49	1.4	66.5	7.4	8.9	11.8	3.9	100.0	415
Total	23.7	51.9	12.7	1.8	4.6	5.3	100.0	4,843
				MEN				
15-19	97.0	0.7	1.9	0.0	0.0	0.4	100.0	330
20-24	74.4	12.5	11.3	0.0	0.0	1.8	100.0	245
25-29	41.9	32.7	16.0	0.0	0.8	8.7	100.0	217
30-34	14.1	58.3	18.8	0.6	1.7	6.5	100.0	212
35-39	3.6	78.7	12.0	0.9	1.1	3.8	100.0	155
40-44	2.4	77.8	6.5	0.0	9.3	4.0	100.0	124
45-49	1.5	82.5	6.1	1.1	7.5	1.2	100.0	99
50-54	0.0	85.0	8.0	2.4	4.6	0.0	100.0	87
55-59	0.0	81.8	4.0	5.2	5.9	3.2	100.0	76
Total	40.9	43.0	9.8	0.6	2.2	3.4	100.0	1,546

There has been a marked decline in the percent of women currently in a union (married or living together) over the last five years, from 70 percent in 1993 (GSS and MI, 1994), to 65 percent in 1998, an eight percent decline (Figure 5.1). Although this decline in nuptiality is obvious for all age groups (except among women age 40-44, where it has gone up slightly), it is sharpest in the youngest (15-19) and oldest (45-49) age groups.

Figure 5.1
Marital Union by Age, 1993 and 1998



Note: Curently married includes formal and informal unions.

The proportion of women who are married or in informal unions increases with age, peaking at 85 percent among women age 40-44 and then declines thereafter, due to increasing levels of widowhood with age. Women age 20-29 are the most likely group to be living in informal unions. The proportion widowed increases from less than one percent among women age below 30 to 9 percent among women age 45-49, as does the proportion of women divorced which increases from 2 percent among women age 20-24 to 12 percent among women age 45-49.

A higher proportion of men than women have never been married (41 percent). On the other hand, a relatively higher proportion of women than men are either in formal or informal unions (about 9 and 3 percentage points difference, respectively). Relatively more women than men are either divorced or not living together with their spouses. The relatively lower proportion of widowed men as compared to women reflects the higher levels of mortality among men and also suggests that men are more likely than women to remarry upon the death of a spouse. As in the case of women, the proportion of men never married has increased, by 15 percent, over the five-year period. There has also been an eight percent decline in the proportion of men in a union over the last five years, with much of this decline in the 25-34 age group (GSS and MI, 1994).

5.2 Polygyny

The extent of polygyny in Ghana was measured in the current GDHS by asking married women whether their husbands had other wives, and if so, how many. Married men were also asked for the number of wives they had. Table 5.2 shows the percentage of currently married women by the number of co-wives they have, according to selected background characteristics.

Overall, 23 percent of currently married women in Ghana are in a polygynous union. Older women are more likely to be in polygynous unions than are younger women. Also, polygyny is higher in rural than urban areas. There are marked differences in the extent of polygyny by region. Polygyny is widely practised in the Northern (52 percent), Upper East (36 percent), and Upper West (35 percent) Regions. On the other

Table 5.2 Polygyny

Percent distribution of currently married women by number of co-wives, and percent distribution of currently married men by number of wives, according to background characteristics, Ghana 1998

Background characteristic	Number of co-wives			Don't know/ Missing	Total	Number of women	Number of wives			Total	Number of men
	0	1	2+				1	2	3+		
Age											
15-19	90.0	9.0	1.0	0.0	100.0	122	100.0	0.0	0.0	100.0	9
20-24	86.8	10.7	2.3	0.2	100.0	552	97.9	2.1	0.0	100.0	58
25-29	84.2	13.1	2.5	0.3	100.0	674	92.0	8.0	0.0	100.0	105
30-34	73.6	20.2	6.2	0.0	100.0	551	92.9	7.1	0.0	100.0	164
35-39	69.5	22.9	7.6	0.0	100.0	523	88.0	11.5	0.5	100.0	141
40-44	72.5	19.1	8.5	0.0	100.0	402	79.2	19.5	1.3	100.0	105
45-49	66.7	24.8	8.4	0.0	100.0	307	87.6	10.6	1.8	100.0	88
50-54	NA	NA	NA	NA	NA	NA	76.0	16.8	7.2	100.0	81
55-59	NA	NA	NA	NA	NA	NA	76.7	21.8	1.5	100.0	66
Residence											
Urban	84.3	11.9	3.8	0.0	100.0	978	93.3	5.7	0.9	100.0	247
Rural	74.2	19.8	5.9	0.1	100.0	2,153	84.3	14.2	1.4	100.0	569
Region											
Western	79.1	18.6	2.3	0.0	100.0	356	86.5	12.5	1.0	100.0	117
Central	82.1	9.9	7.7	0.4	100.0	338	91.6	6.6	1.8	100.0	76
Greater Accra	86.2	10.4	3.4	0.0	100.0	449	91.3	6.8	1.9	100.0	125
Volta	71.5	23.1	5.4	0.0	100.0	334	81.8	16.8	1.4	100.0	84
Eastern	82.9	13.0	3.8	0.3	100.0	426	89.7	10.3	0.0	100.0	116
Ashanti	84.1	12.4	3.5	0.0	100.0	491	93.8	6.2	0.0	100.0	109
Brong Ahafo	75.9	19.2	4.9	0.0	100.0	235	85.7	12.5	1.8	100.0	65
Northern	47.6	40.0	12.0	0.3	100.0	196	68.3	27.5	4.2	100.0	46
Upper West	65.5	24.7	9.8	0.0	100.0	97	82.5	12.4	5.1	100.0	25
Upper East	64.4	26.6	8.9	0.0	100.0	209	80.6	19.4	0.0	100.0	53
Education											
No education	68.4	23.4	8.1	0.1	100.0	1,106	78.0	17.7	4.2	100.0	170
Primary	77.1	16.5	6.4	0.0	100.0	576	83.4	14.1	2.5	100.0	93
Middle/JSS	83.6	13.7	2.6	0.2	100.0	1,197	89.1	10.8	0.1	100.0	406
Secondary+	87.2	9.9	2.9	0.0	100.0	252	94.2	5.4	0.4	100.0	147
Total	77.3	17.3	5.2	0.1	100.0	3,131	87.1	11.7	1.3	100.0	816

NA = Not applicable

hand, married women in the Greater Accra Region (14 percent) are least likely to be in a polygynous union. Female education is inversely related to polygyny. The proportion of currently married women in polygynous unions decreases from 32 percent among women with no education to 13 percent among women with secondary education or higher.

Compared with the 1993 GDHS, polygyny among married women appears to be on the decline. For example, the proportion of married women in polygynous unions was 28 percent in 1993 compared to 23 percent in 1998.

Data on polygynous unions among currently married men is also given in Table 5.2. About one in every seven married men (13 percent) is in a polygynous union and this varies greatly with age, place of residence and level of education. Whereas only 10 percent of married men under 30 years of age are in polygynous unions, the corresponding proportion for those over 54 years is 23 percent. Differences by background characteristics are similar to that observed for women.

5.3 Age at First Marriage

In many societies, age at first marriage denotes the point in a woman's life when childbearing becomes socially acceptable. Women who marry early will on average have a longer exposure to the risk of pregnancy. A young age at first marriage would therefore imply early age at childbearing and a higher level of fertility for the society. Information on age at first marriage was obtained by asking all ever-married respondents the month and year they first started living together with their first spouse. This information is presented in Table 5.3.

The median age at first marriage in Ghana has risen slowly over the last two decades, from 18.7 years for women age 40-49 to 19.6 years for women age 25-29. The median age is slightly lower (19.3) for the youngest cohort for which a median could be computed. This trend towards later marriage is also evidenced by data showing that the proportion of women married by age 15 has declined from 11 percent among women age 40-44 to 4 percent among those currently age 15-19 years. The majority of Ghanaian women age 20-49 were married by age 20 (59 percent), and 83 percent were married by age 25.

Table 5.3 also shows that men generally tend to marry later in life than women, and this cuts across all the age groups. For example the median age at first marriage for men age 30-34 is 24.8 years compared to 18.7 years for women in the same age group. Only around one in four men were married by age 22 as compared with three in four women.

Table 5.3 Age at first marriage

Percentage of women age 15-49 years and men age 25-59 who were first married by exact ages and median age at first marriage, according to current age, Ghana 1998

WOMEN

	Percentage who were first married by exact age:					Percentage who had never married	Number of women	Median age at first marriage
Current age	15	18	20	22	25			
15-19	3.8	NA	NA	NA	NA	83.6	910	a
20-24	6.8	35.5	56.4	NA	NA	29.0	900	19.3
25-29	7.0	33.1	53.8	69.1	82.9	11.2	867	19.6
30-34	9.2	41.8	62.3	76.4	88.5	2.3	653	18.7
35-39	8.2	35.9	57.9	74.9	86.3	0.9	625	19.4
40-44	10.7	40.7	65.0	79.3	88.0	0.2	473	18.7
45-49	7.0	40.8	62.6	76.6	86.7	1.4	415	18.7
Women 20-49	8.0	37.3	58.7	73.1	82.7	9.8	3,933	19.1
Women 25-49	8.3	37.8	59.4	74.5	86.1	4.1	3,033	19.1

MEN

	Percentage who were first married by exact age:					Percentage who had never married	Number of men	Median age at first marriage
Current age	20	22	25	28	30			
25-29	15.8	27.8	48.0	NA	NA	41.9	217	a
30-34	18.4	32.2	51.3	70.5	80.0	14.1	212	24.8
35-39	10.0	23.4	44.4	64.1	76.7	3.6	155	26.1
40-44	13.3	27.6	48.7	67.4	77.4	2.4	124	25.1
45-49	12.3	23.4	47.1	62.7	75.8	1.5	99	25.3
50-54	11.8	19.6	41.6	58.2	70.4	0.0	87	26.5
55-59	8.4	24.4	35.2	50.7	72.9	0.0	76	27.6
Men 30-59	13.2	26.2	46.1	64.2	76.5	5.3	755	25.6

NA = Not applicable
[a] Less than 50 percent of respondents in age group *x* to *x+4* were first married by age *x*

Table 5.4 shows the median age at first marriage for women, by background characteristics.[1] Urban women marry one year later than rural women. Regional differences are obvious, with women in the Greater Accra Region on average marrying more than two years later than women residing in the Brong Ahafo Region. There is a strong positive relationship between education and age at marriage. Women who have at least secondary level education on average marry nearly five years later than women with no education.

Table 5.4 Median age at first marriage

Median age at first marriage among women age 20-49 years, by current age and selected background characteristics, Ghana 1998

Background characteristic	Current age						Women age 25-49
	20-24	25-29	30-34	35-39	40-44	45-49	
Residence							
Urban	a	21.2	19.0	19.6	18.7	19.3	19.7
Rural	18.7	19.0	18.5	19.2	18.7	18.5	18.8
Region							
Western	19.0	19.5	19.2	18.1	18.7	19.8	19.2
Central	19.6	20.5	18.1	19.5	18.9	19.1	19.3
Greater Accra	a	22.4	19.5	20.0	19.4	20.7	20.4
Volta	19.5	19.3	18.7	19.5	18.4	18.4	18.9
Eastern	18.8	19.0	18.7	19.9	18.6	17.4	18.7
Ashanti	19.1	19.3	18.7	18.9	18.1	18.9	18.8
Brong Ahafo	17.8	18.3	18.6	18.4	17.9	17.1	18.2
Northern	17.5	18.7	18.4	19.9	19.0	18.2	18.7
Upper West	19.2	19.4	19.3	19.0	18.5	19.6	19.2
Upper East	a	18.7	18.2	19.1	19.9	18.8	18.8
Education							
No education	18.5	18.5	18.3	18.4	18.8	18.4	18.5
Primary	18.5	19.2	18.6	19.3	18.3	18.0	18.8
Middle/JSS	19.1	20.1	18.5	19.6	18.5	18.8	19.2
Secondary+	a	a	23.3	21.8	21.6	22.5	23.2
Total	19.3	19.6	18.7	19.4	18.7	18.7	19.1

[a] Less than 50 percent of respondents in age group *x* to *x+4* were first married by age *x*

5.4 Age At First Sexual Intercourse

Although age at first marriage is often used as a proxy for the onset of women's exposure to the risk of pregnancy, age at first sexual intercourse is a more reliable estimate, since some women become sexually active before marriage. The percentage of women and men who have ever had intercourse by specific ages is shown in Table 5.5.

The median age at first sexual intercourse for women has not changed much over the last 20 years or so, ranging from 17.5 among women age 40 and over to 18 years for women age 25-29. Virtually all women initiate sexual intercourse by their mid-twenties. Sixty-two percent of women in the 15-19 age group have never had sex. This drops to two percent among women age 25-29, after which age all women have become sexually active.

The median age at first sexual intercourse for men age 25-59 is 19.4, almost two years later than for women. As with women, there appears to have been an increase over time in the age at which men first

[1] Although more than 50 percent of women age 20-24 are married before age 20 for the whole population, the median for the age group 25-49 is used in this table because less than 50 percent of women age 20-24 are married before age 20, in some major subgroups of the population.

Table 5.5 Age at first sexual intercourse

Percentage of women and men who had first sexual intercourse by exact ages 15, 18, 20, 22, and 25, and median age at first intercourse, according to current age, Ghana 1998

Current age	Percentage who had first intercourse by exact age: 15	18	20	22	25	Percentage who never had intercourse	Number of women/ men	Median age at first intercourse
				WOMEN				
15-19	7.3	NA	NA	NA	NA	62.2	910	a
20-24	10.4	56.7	81.4	NA	NA	8.6	900	17.5
25-29	9.4	50.4	76.1	86.5	93.1	1.8	867	18.0
30-34	11.4	53.6	76.3	87.3	89.9	0.2	653	17.7
35-39	11.7	55.7	76.2	87.4	90.9	0.0	625	17.6
40-44	10.4	57.3	79.1	88.2	92.6	0.0	473	17.5
45-49	9.8	56.0	78.1	86.7	90.6	0.0	415	17.5
Women 20-49	10.5	54.6	78.0	87.5	91.0	2.4	3,933	17.6
				MEN				
15-19	3.7	NA	NA	NA	NA	80.7	330	a
20-24	7.7	30.3	55.5	NA	NA	32.8	245	19.5
25-29	12.2	38.0	58.2	74.1	88.2	8.0	217	19.1
30-34	4.6	32.6	58.6	80.8	90.3	2.0	212	18.9
35-39	9.5	37.1	56.9	77.3	87.9	0.0	155	19.0
40-44	7.4	32.8	54.0	73.0	86.3	0.0	124	19.5
45-49	3.0	31.0	56.1	79.5	81.5	0.0	99	19.4
50-54	4.1	20.8	50.3	69.8	84.3	0.0	87	20.0
55-59	3.2	18.8	42.7	64.8	71.1	0.0	76	20.4
Men 25-59	7.1	32.2	55.4	75.4	86.0	2.2	971	19.4

NA = Not applicable
[a] Omitted because less than 50 percent in the age group *x* to *x + 4* have had intercourse by age *x*

have sex. The median age at first sexual intercourse for men has decreased from 20.4 among those age 55-59 to 19.5 among those age 20-24.

Table 5.6 presents median age at first sexual intercourse by background characteristics for women age 20-49 and men age 25-59. Rural women on average, initiate sexual relations about eight months earlier than urban women. The median age at first sexual intercourse for women ranges from 16.6 in the Brong Ahafo Region to 18.6 in the Upper West Region. Women with secondary and higher education enter into sexual relations about a year and a half later than women with no education.

Similar differentials are observed for men, with the exception that, men with no education initiate sexual relations later in life, than men with some education.

Table 5.6 Median age at first sexual intercourse

Median age at first sexual intercourse among women age 20-49 years and men age 25-59, by current age (women) and selected background characteristics, Ghana 1998

Background characteristic	Current age of women							Women age 20-49	Men age 25-59
	20-24	25-29	30-34	35-39	40-44	45-49	50+		
Residence									
Urban	18.0	18.4	18.1	18.0	18.1	17.4	NA	18.1	19.6
Rural	17.2	17.6	17.3	17.4	17.1	17.6	NA	17.4	19.2
Region									
Western	17.2	17.0	17.5	16.8	17.0	16.8	NA	17.1	18.6
Central	18.1	17.8	16.7	18.6	17.7	17.6	NA	17.9	20.0
Greater Accra	18.4	18.6	18.3	18.3	18.2	17.8	NA	18.3	19.6
Volta	17.4	18.5	17.9	17.6	16.9	17.5	NA	17.6	19.0
Eastern	17.3	17.5	17.0	17.2	17.4	16.6	NA	17.2	18.2
Ashanti	17.3	17.7	16.9	16.7	17.3	17.2	NA	17.2	19.5
Brong Ahafo	16.4	17.4	16.7	16.9	16.1	17.2	NA	16.6	19.0
Northern	17.5	18.5	18.7	20.1	18.7	18.4	NA	18.5	21.8
Upper West	17.6	19.0	18.2	19.6	17.8	19.3	NA	18.6	21.3
Upper East	18.4	18.2	17.9	18.0	19.2	18.6	NA	18.3	20.5
Education									
No education	16.9	17.4	17.9	17.2	17.5	17.5	NA	17.4	20.3
Primary	17.2	17.6	16.9	16.8	17.3	17.1	NA	17.2	18.8
Middle/JSS	17.4	18.0	17.4	17.9	17.6	17.4	NA	17.6	18.9
Secondary+	18.9	20.4	18.8	18.6	17.8	18.5	NA	18.9	19.6
Total women	17.5	18.0	17.7	17.6	17.5	17.5	NA	17.6	NA
Total men	NA	19.1	18.9	19.0	19.5	19.4	20.2	NA	19.4

NA = Not applicable

5.5 Recent Sexual Activity

In the absence of effective contraception, the frequency of sexual intercourse becomes a vital determinant of the risk of a woman becoming pregnant. Information on the frequency of sexual activity can therefore be used to complement measures of exposure to the risk of pregnancy. Women and men who have ever had sexual intercourse were asked about the timing of their last sexual intercourse, to assess whether they had a sexual encounter in the last four weeks. Tables 5.7 and 5.8 show the distribution of sexual activity by background characteristics for female and male respondents.

Although 86 percent of women and 76 percent of men had initiated sexual intercourse, not all of those respondents who have had sexual intercourse are currently sexually active. About two in every five (42 percent) women were sexually active in the four weeks prior to the survey, 14 percent were abstaining postpartum, 29 percent were abstaining for reasons other than recent childbirth, and 14 percent had never had sex in the four weeks preceding the survey (Table 5.7). Recent sexual activity was reported most often among women age 30-39, among women who have been married 15-19 years, among rural women, among women with little or no education, and among those using some form of contraception. Recent sexual activity is much higher among women in a polygynous (47 percent), or monogamous (58 percent) relationship, than among women never married (13 percent) or formerly married (15 percent). Minor regional disparities in sexual activity also exist, with women in the Eastern Region being most likely to report recent sexual activity and women in the Northern and Upper West Regions being least likely to have been sexually active recently.

Table 5.7 Recent sexual activity: women

Percent distribution of women by sexual activity in the four weeks preceding the survey, and among those not sexually active, the length of time they have been abstaining and whether postpartum or not postpartum, according to selected background characteristics and contraceptive method currently used, Ghana 1998

Background characteristic/ contraceptive method	Sexually active in last four weeks	Not sexually active in last four weeks: Abstaining (postpartum) 0-1 years	Abstaining (postpartum) 2+ years	Abstaining (not postpartum) 0-1 years	Abstaining (not postpartum) 2+ years	Never had sex	Missing	Total	Number of women
Age									
15-19	13.8	6.7	0.5	14.6	1.8	62.2	0.4	100.0	910
20-24	40.1	17.1	2.9	27.0	3.0	8.6	1.2	100.0	900
25-29	49.2	16.1	2.9	22.4	5.7	1.8	1.9	100.0	867
30-34	54.1	14.7	2.4	23.8	2.6	0.2	2.3	100.0	653
35-39	54.9	11.5	2.5	22.5	6.7	0.0	1.9	100.0	625
40-44	50.2	9.0	4.0	27.2	8.1	0.0	1.5	100.0	473
45-49	45.5	1.6	1.1	31.0	19.9	0.0	0.8	100.0	415
Marital status									
Never married	13.1	1.7	0.7	21.3	5.6	0.4	57.2	100.0	1,147
In polygynous union	47.4	18.1	3.8	25.7	3.1	1.8	0.0	100.0	165
In monogamous union	58.1	15.4	2.0	21.4	1.5	1.5	0.1	100.0	2,966
Formerly married	15.0	11.4	6.8	35.9	28.0	2.9	0.0	100.0	565
Duration since first union (years)									
Never married	13.1	1.7	0.7	21.3	5.6	57.2	0.4	100.0	1,147
0-4	47.4	24.0	2.7	22.3	1.5	0.5	1.7	100.0	752
5-9	52.2	18.2	4.2	20.3	3.3	0.0	1.8	100.0	759
10-14	53.0	15.9	1.8	23.2	3.5	0.0	2.5	100.0	661
15-19	55.1	12.3	3.0	23.4	4.5	0.0	1.7	100.0	563
20-24	53.7	8.8	2.1	24.4	9.5	0.0	1.4	100.0	480
25-29	44.0	5.0	2.7	32.9	14.1	0.0	1.4	100.0	332
30+	46.4	0.4	1.7	30.4	20.7	0.0	0.4	100.0	151
Residence									
Urban	38.2	7.3	1.8	25.0	9.0	17.3	1.3	100.0	1,739
Rural	44.2	14.3	2.5	22.2	3.7	11.6	1.5	100.0	3,104
Region									
Western	42.8	10.6	1.3	26.4	4.0	13.5	1.3	100.0	593
Central	38.0	12.5	1.8	28.0	5.1	13.2	1.3	100.0	552
Greater Accra	36.3	6.4	1.4	24.7	10.3	19.6	1.3	100.0	808
Volta	46.2	12.0	2.7	18.6	5.8	13.6	1.2	100.0	535
Eastern	50.4	8.4	1.1	24.4	3.4	11.2	1.1	100.0	628
Ashanti	44.9	11.8	2.4	21.9	6.8	11.6	0.6	100.0	728
Brong Ahafo	42.7	12.3	1.9	24.3	2.6	13.6	2.6	100.0	358
Northern	32.7	23.8	5.6	21.7	3.0	9.5	3.6	100.0	234
Upper West	32.8	22.9	6.9	19.7	4.3	11.7	1.7	100.0	120
Upper East	42.1	20.2	4.7	13.8	4.9	12.5	1.8	100.0	288
Education									
No education	44.1	17.9	3.8	20.8	5.7	5.7	2.0	100.0	1,410
Primary	44.2	13.4	2.9	23.9	3.7	10.8	1.1	100.0	874
Middle/JSS	41.2	8.2	1.2	23.6	5.4	19.1	1.3	100.0	2,056
Secondary+	36.3	6.6	1.3	26.7	9.8	18.5	0.8	100.0	502
Contraceptive method									
No method	36.7	13.5	2.6	22.4	6.7	16.6	1.5	100.0	3,970
Pill	71.1	3.1	0.0	25.0	0.0	0.0	0.8	100.0	148
IUD	74.2	4.6	0.0	11.6	4.8	0.0	4.8	100.0	24
Sterilisation	52.7	12.0	0.8	31.8	0.0	0.0	2.8	100.0	44
Periodic abstinence	63.1	4.1	0.4	29.6	2.1	0.4	0.2	100.0	275
Other (including breastfeeding)	68.1	3.4	1.0	26.3	0.3	0.0	0.8	100.0	381
Total	42.1	11.8	2.3	23.2	5.6	13.6	1.4	100.0	4,843

The proportion of women who are abstaining postpartum for less than two years declines with age, increasing marital duration, and education. Rural women are more likely than urban women to be abstaining postpartum. Abstinence unrelated to childbirth generally increases with age, and marital duration, and this is more pronounced for long-term abstinence (two or more years). Abstinence, unrelated to childbirth, is also most pronounced in the Greater Accra Region.

Over two-fifths (42 percent) of men were sexually active in the four weeks preceding the survey, 24 percent had never had sex while the remaining 34 percent were sexually active, but not within the four weeks prior to the survey (Table 5.8). Recent sexual activity increases with age (with the exception of age group 35-39) to peak at age 40-44 years, and then declines at older ages. Recent sexual activity is much higher among men in a polygynous (75 percent), or monogamous (64 percent) relationship, than men never married (15 percent) or formerly married (22 percent). Recent sexual activity is also higher among rural than urban men. There is no clear pattern in recent sexual activity among men by education, but men with primary education were least likely to be sexually active in the four weeks preceding the survey.

It is interesting to note that relative to most other countries in Africa (for which recent comparable data is available), Ghanaian women and men are not as sexually active (Figure 5.2).

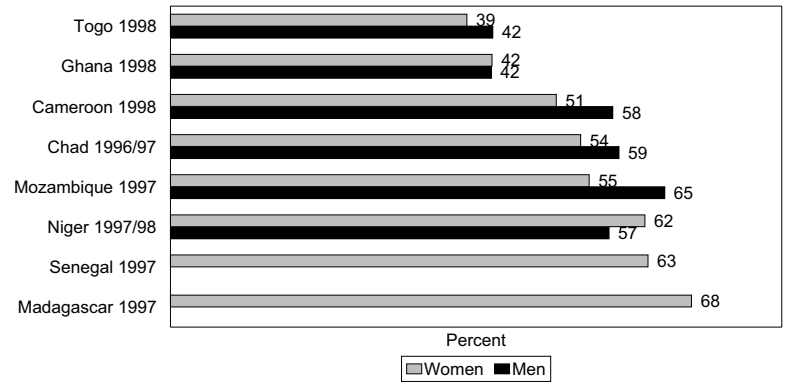
Table 5.8 Recent sexual activity: men

Percent distribution of men by sexual activity in the four weeks preceding the survey, according to selected background characteristics, Ghana 1998

Background characteristic/ contraceptive method	Sexually active in last 4 weeks	Not sexually active in last 4 weeks	Never had sex	Total	Number of men
Age					
15-19	7.8	11.4	80.7	100.0	330
20-24	29.6	37.5	32.8	100.0	245
25-29	40.7	51.3	8.0	100.0	217
30-34	65.8	32.2	2.0	100.0	212
35-39	61.0	39.0	0.0	100.0	155
40-44	68.6	31.4	0.0	100.0	124
45-49	53.7	46.3	0.0	100.0	99
50-54	60.6	39.4	0.0	100.0	87
55-59	49.0	51.0	0.0	100.0	76
Marital status					
Never married	14.9	27.1	58.0	100.0	633
In polygynous union	75.2	24.8	0.0	100.0	106
In monogamous union	64.0	35.8	0.2	100.0	711
Formerly married	21.8	78.2	0.0	100.0	97
Residence					
Urban	36.7	38.9	24.4	100.0	547
Rural	45.0	31.5	23.5	100.0	999
Education					
No education	44.0	41.2	14.8	100.0	254
Primary	33.9	36.9	29.2	100.0	190
Middle/JSS	43.0	31.0	26.0	100.0	793
Secondary+	43.1	34.7	22.3	100.0	309
Total	42.0	34.1	23.8	100.0	1,546

Figure 5.2

Recent Sexual Activity, Women and Men, Selected African Countries, 1996-1998



Note: *Recent sexual activity* refers to sexual intercourse in the four weeks preceding the survey.

5.6 Postpartum Amenorrhoea, Abstinence and Insusceptibility

Postpartum amenorrhoea refers to the interval between childbirth and the return of menstruation. This is the period during which a woman becomes temporarily and involuntarily infecund following childbirth. Various studies have established a direct relationship between the length and intensity of breastfeeding and the duration of postpartum amenorrhoea. Postpartum abstinence refers to the period of voluntary sexual inactivity after childbirth. Women are considered insusceptible if they are not exposed to the risk of pregnancy, either because they are amenorrhoeic or are abstaining from sexual intercourse following a birth. Women who gave birth during the three years before the survey were asked about their breastfeeding practices, the duration of amenorrhoea, and the duration of sexual abstinence following childbirth. The results are presented in Table 5.9.

Table 5.9 Postpartum amenorrhoea, abstinence and insusceptibility

Percentage of births in the three years preceding the survey for which mothers are postpartum amenorrhoeic, abstaining and insusceptible, by number of months since birth, and median durations, Ghana 1998

Months since birth	Amenorrhoeic	Abstaining	Insusceptible	Number of births
<2	100.0	98.6	100.0	75
2-3	89.8	88.3	95.1	125
4-5	73.2	75.2	84.7	101
6-7	70.9	56.9	84.0	132
8-9	61.5	50.3	71.0	113
10-11	51.6	38.0	64.6	75
12-13	44.7	33.4	58.4	121
14-15	28.0	27.8	43.6	109
16-17	29.0	26.3	42.2	117
18-19	19.4	27.0	35.9	132
20-21	19.9	21.4	33.0	103
22-23	11.8	8.1	17.3	101
24-25	6.6	22.1	25.9	97
26-27	2.3	14.6	16.2	102
28-29	0.8	10.2	10.5	111
30-31	1.2	10.1	11.3	94
32-33	1.3	4.6	5.9	90
34-35	3.9	5.0	7.5	89
Total	34.7	34.6	45.6	1,888
Median	10.9	8.5	14.0	-

The survey results indicate that both postpartum amenorrhoea and postpartum abstinence are important determinants of postpartum insusceptibility in Ghana. The median duration of amenorrhoea is 11 months, that of abstinence is 9 months, and that of insusceptibility is 14 months. All women are insusceptible to pregnancy during the first two months after a birth due to both postpartum amenorrhoea and postpartum abstinence. However, starting from the second month after birth, the contribution of abstinence to the period of insusceptibility is greatly reduced as more women resume sexual relations. At 10-11 months postpartum, mothers are still amenorrhoeic in the case of more than one in two births but only 38 percent are abstaining. From 12 to 27 months postpartum, however, the proportion of mothers who are amenorrhoeic also drops sharply so that by 28 months after birth women are still insusceptible to the risk of pregnancy in only about 10 percent of births.

Table 5.10 shows the median duration of postpartum abstinence and insusceptibility by background characteristics. Postpartum insusceptibility does not vary much by age. Rural women have longer periods of amenorrhoea and insusceptibility than urban women. Women from the Brong-Ahafo Region have the shortest duration of amenorrhoea (8.5 months) while those from the Upper West Region have the longest (17 months). Women from the Eastern Region seem to abstain from sex for the shortest duration (5.6 months) after a birth, while those from the Upper West Region abstain for the longest period (22 months). The period of insusceptibility is generally longer in the three northern regions, where cultural practices dictate a longer period of postpartum abstinence. There is an inverse relationship between education and women's insusceptibility to pregnancy. Women with no education have a longer period of amenorrhoea and postpartum abstinence than women with some education.

Table 5.10 Median duration of postpartum insusceptibility by background characteristics

Median number of months of postpartum amenorrhoea, postpartum abstinence, and postpartum insusceptibility, by selected background characteristics, Ghana 1998

Background characteristic	Median duration of postpartum: Amenor-rhoea	Abstinence	Insusceptibility	Number of births
Age				
<30	10.3	8.8	13.7	1,102
30+	12.1	8.1	14.0	786
Residence				
Urban	8.3	8.6	10.8	471
Rural	11.9	8.5	15.1	1,418
Region				
Western	11.5	7.8	14.3	231
Central	11.4	10.5	16.5	217
Greater Accra	9.0	8.7	11.1	209
Volta	11.0	8.6	15.7	199
Eastern	9.0	5.6	12.4	263
Ashanti	9.7	6.7	10.0	325
Brong Ahafo	8.5	7.6	14.5	153
Northern	15.0	21.5	22.0	126
Upper West	17.0	22.1	22.8	57
Upper East	15.5	18.8	19.0	108
Mother's education				
No education	12.7	11.3	18.7	694
Primary	10.0	8.6	14.7	397
Middle/JSS	9.3	6.6	11.0	682
Secondary+	8.7	7.8	10.1	116
Total	10.9	8.5	14.0	1,888

Note: Medians are based on current status

5.7 Termination of Exposure to Pregnancy

After age 30, the risk of pregnancy declines with age as increasing proportions of women become menopausal. Although the onset of menopause is difficult to determine for an individual woman, there are ways of estimating it for a population as a whole. Table 5.11 presents data on the percent of women age 30 and over who are menopausal, that is, who have not menstruated for six months or longer in the period preceding the survey, or who reported being menopausal. Ten percent of Ghanaian women age 30 years and older are menopausal. The proportion of women who have reached menopause increases slowly with age, up to age 43 and then increases sharply for the oldest cohorts. More than one in two women age 48-49 are menopausal.

Table 5.11 Menopause

Prevalence of menopause among women age 30-49, by age, Ghana 1998

Age	Meno-pausal[1]	Number of women
30-34	0.9	653
35-39	1.3	625
40-41	8.4	241
42-43	8.0	166
44-45	16.2	182
46-47	38.7	135
48-49	51.5	164
Total	9.8	2,167

[1] Percentage of women whose last menstrual period occurred six or more months preceding the survey or who report that they are menopausal.

CHAPTER 6

FERTILITY PREFERENCES

Prolific childbearing is generally encouraged in traditional Ghanaian Society. However, the combined effects of modernisation, urbanisation and harsh economic realities, appear to have reoriented the contemporary Ghanaian society towards having fewer and better-cared-for children. Information on fertility preferences indicates the overall attitude of a society towards childbearing and the general course of future fertility. Data on fertility preferences are also useful for assessing the unmet need for family planning and the number of unwanted or mistimed births in the population. These, together with data on contraceptive prevalence, provide an estimation of the demand for family planning.

6.1 Desire for More Children

In the 1998 GDHS, women and men were asked a series of questions on fertility preferences. Table 6.1 presents fertility preference among women by number of living children. Whereas more than half (56 percent) of currently married women would like to have a child, only 18 percent want a child within two years (Figure 6.1). Thirty-five percent prefer to wait for two years or more. Another 35 percent want no

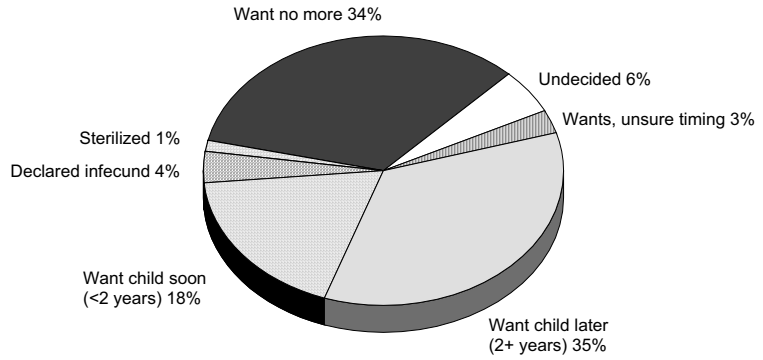
Table 6.1 Fertility preferences by number of living children

Percent distribution of currently married women and men by desire for more children, according to number of living children, Ghana 1998

Desire for children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
WOMEN								
Have another soon[2]	60.7	25.5	21.4	17.0	9.3	7.0	3.3	18.4
Have another later[3]	19.9	63.2	49.1	34.9	23.9	17.8	8.5	34.6
Have another, undecided when	8.4	4.5	3.1	2.0	2.0	0.8	0.6	2.8
Undecided	4.9	3.1	7.8	5.7	7.4	7.5	2.7	5.5
Want no more	0.8	2.3	15.7	34.9	50.7	60.9	76.0	33.7
Sterilised	0.0	0.0	0.4	1.2	2.5	3.4	2.4	1.3
Declared infecund	5.3	1.4	2.4	4.3	4.1	2.6	6.5	3.6
Missing	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	222	571	601	533	426	309	468	3,131
MEN								
Have another soon[2]	45.3	32.7	18.7	18.0	20.8	19.7	10.7	22.7
Have another later[3]	34.8	54.0	49.3	38.1	21.0	20.3	12.9	33.6
Have another, undecided when	8.8	2.9	3.0	1.6	0.0	1.6	1.6	2.7
Undecided	7.4	5.5	8.5	3.9	7.7	10.4	3.0	6.2
Want no more	1.2	3.3	18.7	33.0	43.0	44.4	66.9	31.1
Sterilised	0.0	0.0	0.0	3.1	3.5	1.2	1.6	1.3
Declared infecund	2.4	1.6	1.7	2.3	3.9	2.3	3.2	2.5
Missing								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	92	140	136	117	92	70	169	816

[1] Includes current pregnancy
[2] Want next birth within two years
[3] Want to delay next birth for two or more years

Figure 6.1
Fertility Preferences of
Currently Married Women 15-49



GDHS 1998

more children or have been sterilised. Thus, the majority of women in Ghana (68 percent) prefer either to space their next birth or to end childbearing altogether. This represents the proportion of women who are potentially in need of some method of family planning. A similar pattern is observed among male respondents, although a slightly larger percentage of men want to have a child soon.

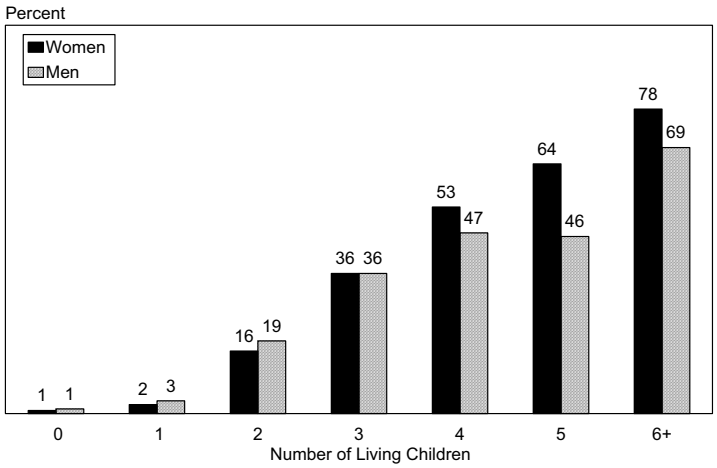
Fertility preferences have changed marginally over the last five years. The number of women who want another child soon, increased from 16 percent in 1993 (GSS and MI, 1994) to 18 percent in 1998 and the number of women who want a child later decreased from 39 percent in 1993 to 35 percent in 1998. The number of women who want no more children (including those sterilised), increased by one percentage point between 1993 and 1998.

As expected, the desire to limit childbearing increases sharply with increasing number of living children (Figure 6.2). Two percent of women with one living child want no more children compared with 78 percent of women with six or more living children. A similar pattern is observed for male respondents, although a relatively smaller percentage of men than women desire to limit childbearing at higher birth orders.

Table 6.2 examines women's fertility preferences by age. The desire to limit births rises sharply with age, from 3 percent among women age 15-19, to 61 percent among women age 45-49. On the other hand, the desire to space births declines with age, from 69 percent among the youngest age group, to 2 percent among the oldest. Thus, older women have the potential need for limiting births while younger women have the potential need for spacing. Male respondents also exhibit a similar pattern of preferences by age.

Figure 6.2

Desire to Limit Childbearing among Currently Married Women and Men, by Number of Living Children



Note: Desire to limit childbearing includes respondents who stated that they did not want any more children and those who have been sterilized.

GDHS 1998

Table 6.2 Fertility preferences by age

Percent distribution of currently married women by desire for more children, according to age, Ghana 1998

Desire for children	Age of woman									Total
	15-19	20-24[1]	25-29	30-34	35-39	40-44	45-49	50-54	55-59	
WOMEN										
Have another soon[2]	13.9	15.2	19.1	25.5	23.1	15.0	8.1	NA	NA	18.4
Have another later[3]	69.4	65.6	51.1	32.5	15.2	6.5	2.3	NA	NA	34.6
Have another, undecided when	4.9	4.7	3.3	2.8	2.0	1.7	0.0	NA	NA	2.8
Undecided	7.5	6.1	6.9	3.7	6.9	4.4	3.2	NA	NA	5.5
Want no more	3.3	8.3	18.9	33.1	50.2	61.6	60.5	NA	NA	33.7
Sterilised	0.0	0.0	0.1	0.6	1.4	3.1	5.4	NA	NA	1.3
Declared infecund	0.9	0.0	0.7	1.8	0.8	7.8	20.3	NA	NA	3.6
Missing	0.0	0.0	0.0	0.0	0.2	0.0	0.2	NA	NA	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	NA	NA	100.0
Number of women	122	552	674	551	523	402	307	NA	NA	3,131
MEN										
Have another soon[2]	NA	21.0	22.4	26.8	22.9	31.0	17.6	18.8	12.4	22.7
Have another later[3]	NA	53.3	52.9	46.5	37.0	23.6	20.5	8.3	8.2	33.6
Have another, undecided when	NA	11.2	2.2	1.5	3.6	1.2	0.0	0.9	4.4	2.7
Undecided	NA	9.3	7.7	7.5	3.8	3.3	9.6	6.0	2.4	6.2
Want no more	NA	5.2	12.6	17.1	29.2	38.7	42.4	60.6	62.1	31.1
Sterilised	NA	0.0	0.0	0.0	3.5	0.9	3.3	0.4	1.8	1.3
Declared infecund	NA	0.0	2.2	0.6	0.0	1.2	6.6	5.0	8.8	2.5
Total	NA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	NA	67	105	164	141	105	88	81	66	816

[1] Includes 8 men in the age group 15-19.
[2] Want next birth within two years
[3] Want to delay next birth for two or more years
NA = Not applicable

The decision to have a child may be a joint decision of the couple or a unilateral decision. The survey examined fertility desires of 468 monogamous couples, who live together in the same household. These results are shown in Table 6.3. There is general agreement among couples on their desire for children. Three in four couples agree in their desire to have more children (49 percent) or not to have any more children (25 percent).

Table 6.3 Desire for more children among monogamous couples

Percent distribution of monogamous couples by desire for more children, according to number of living children reported, Ghana 1998

Number of living children reported	Both want more	Husband more/ wife no more	Wife more/ husband no more	Both want no more	Husband/ wife infecund	One or both undecided/ missing	Total	Number of couples
Same number								
0	84.9	0.0	0.0	2.8	5.7	6.6	100.0	39
1-3	67.1	5.0	5.1	11.0	1.4	10.6	100.0	165
4-5	25.9	6.7	6.6	38.2	5.8	16.9	100.0	50
6+	(14.3)	(6.0)	(2.9)	(67.9)	(7.4)	(1.5)	100.0	41
Different number								
Husband > wife	39.8	6.4	10.1	29.0	5.4	9.3	100.0	118
Wife > husband	33.9	19.5	0.0	30.5	5.6	10.5	100.0	55
Total	48.8	6.9	5.3	25.0	4.2	9.8	100.0	468

Note: Figures in parentheses are based on 25-49 (unweighted) couples.

Table 6.4 shows the percentage of currently married women and men who want no more children by background characteristics. Urban respondents are somewhat more likely than rural respondents to want no more children. This difference becomes more pronounced among respondents with two or more children. The desire to limit childbearing varies directly with education, and this difference is more marked when we compare female and male respondents who have no education, with those who have at least a middle/JSS level of education. The variation by region is somewhat mixed for both female and male respondents. The desire to limit childbearing is highest among women who reside in the Volta Region, and among men in the Greater Accra Region. Residents of the Northern Region are least likely to want to limit childbearing.

6.2 Need for Family Planning Services

Fecund women who are currently married and who say either they do not want anymore children or that they want to wait two or more years before having another child, but are not using contraception, are considered to have an *unmet need* for family planning.[1] Current users of family planning methods are said to have a *met need* for family planning. The *total demand* for family planning is the sum of the met and unmet need for family planning.

Table 6.5 shows the demand for family planning services according to selected background characteristics. Twenty-three percent of currently married women in Ghana have an unmet need for family planning, 11 percent with an unmet need for spacing and 12 percent with an unmet need for limiting. This represents a 40 percent decline in unmet need since 1993. Combined with the 22 percent of married women who are currently using a contraceptive method, the total demand for family planning among married women is 45 percent. Thus, if all married women who say they want to space or limit their children were to use family planning, the total contraceptive prevalence rate would increase from 23 percent to 45 percent.

[1] For an exact description of the calculation, see footnote 1, Table 6.5.

Table 6.4 Desire to limit childbearing by background characteristics

Percentage of currently married women and men who want no more children, by number of living children and selected background characteristics, Ghana 1998

Background characteristic	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
WOMEN								
Residence								
Urban	0.7	1.5	21.5	51.8	66.9	78.4	87.2	36.8
Rural	0.9	2.7	13.2	27.9	46.9	59.8	76.6	34.2
Region								
Western	0.0	1.8	14.7	28.0	41.5	54.2	80.0	30.5
Central	0.0	0.0	6.2	42.5	61.9	78.1	90.2	42.7
Greater Accra	0.0	2.6	26.4	58.6	78.2	77.3	82.7	41.5
Volta	0.0	2.0	29.4	44.7	60.4	88.5	78.7	43.2
Eastern	0.0	4.5	16.7	33.2	79.1	70.7	83.5	39.9
Ashanti	0.0	4.2	11.4	30.7	50.7	59.8	80.8	32.5
Brong Ahafo	0.0	0.0	6.1	33.5	33.5	65.4	81.7	34.5
Northern	12.4	0.0	4.1	19.7	8.5	24.2	57.0	17.9
Upper West	0.0	0.0	9.9	9.1	31.4	41.1	67.8	25.3
Upper East	3.2	1.3	8.1	13.7	25.9	45.7	50.0	19.9
Education								
No education	2.1	1.1	8.9	24.1	36.4	52.3	70.4	33.0
Primary	1.8	2.4	11.6	27.0	58.0	62.5	84.9	35.7
Middle/JSS	0.0	2.7	18.1	47.1	62.5	75.6	88.5	36.1
Secondary+	0.0	3.2	35.8	55.6	87.5	100.0	100.0	37.5
Total	0.8	2.3	16.1	36.1	53.2	64.3	78.4	35.0
MEN								
Residence								
Urban	0.0	4.4	26.6	46.6	64.8	80.5	87.0	38.1
Rural	1.7	2.7	13.5	30.2	37.9	33.3	64.8	29.9
Region								
Western	0.0	0.0	15.3	36.5	41.6	22.2	80.7	32.7
Central	0.0	13.8	28.8	32.6	37.3	41.5	93.1	37.8
Greater Accra	0.0	4.8	36.4	57.9	100.0	70.1	78.6	47.6
Volta	0.0	0.0	14.0	19.7	33.3	66.7	84.6	29.7
Eastern	0.0	10.5	8.7	53.4	45.2	55.1	75.0	33.4
Ashanti	6.1	0.0	15.5	31.8	70.9	50.0	72.5	31.4
Brong Ahafo	0.0	0.0	27.2	28.5	40.0	28.6	61.6	33.9
Northern	(0.0)	(0.0)	(0.0)	(0.0)	(10.2)	(20.0)	(22.2)	8.3
Upper West	(0.0)	(0.0)	(0.0)	(0.0)	(33.9)	(33.3)	(31.6)	15.1
Upper East	0.0	0.0	10.0	9.1	6.7	40.1	38.3	19.4
Education								
No education	0.0	0.0	14.3	23.6	16.4	25.0	45.1	23.7
Primary incomplete	0.0	0.0	15.8	8.0	55.0	30.9	64.7	25.9
Primary complete	2.7	4.8	16.8	45.1	46.5	53.7	80.6	36.4
Secondary+	0.0	3.5	29.7	44.7	68.5	68.0	84.1	35.2
Total	1.2	3.3	18.7	36.0	46.5	45.6	68.5	32.4

Note: Women and men who have been sterilised or whose spouses are sterilised are considered to want no more children.
Parentheses indicate that a figure is based on 25-49 respondents.
[1] Includes current pregnancy

Table 6.5 Need for family planning

Percentage of currently married women and women not currently married with unmet need for family planning, met need for family planning, and the total demand for family planning, by selected background characteristics, Ghana 1998

Background characteristic	Unmet need for family planning[1]			Met need for family planning (currently using)[2]			Total demand for family planning			Percentage of demand satisfied	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total		
Age											
15-19	24.3	2.4	26.7	19.2	0.0	19.2	43.5	2.4	45.9	41.9	122
20-24	19.7	2.3	22.0	19.5	1.2	20.7	39.2	3.5	42.7	48.5	552
25-29	16.7	5.8	22.5	18.0	4.2	22.2	34.8	10.0	44.7	49.7	674
30-34	9.4	12.3	21.7	14.9	9.9	24.8	24.3	22.2	46.5	53.4	551
35-39	6.0	17.6	23.6	7.7	18.6	26.3	13.6	36.2	49.8	52.7	523
40-44	3.8	24.8	28.6	2.1	17.1	19.3	5.9	41.9	47.8	40.3	402
45-49	0.8	17.8	18.6	0.1	15.7	15.8	0.9	33.5	34.4	46.0	307
Residence											
Urban	10.1	11.5	21.6	16.5	13.9	30.4	26.6	25.4	52.0	58.4	978
Rural	11.8	11.9	23.6	10.3	7.8	18.1	22.1	19.7	41.8	43.4	2,153
Region											
Western	12.9	12.9	25.7	10.6	7.7	18.3	23.5	20.6	44.1	41.6	356
Central	8.0	16.8	24.8	10.2	9.1	19.3	18.3	25.9	44.2	43.8	338
Greater Accra	8.8	10.6	19.5	15.6	16.6	32.2	24.4	27.3	51.7	62.3	449
Volta	11.1	17.3	28.4	11.6	9.5	21.1	22.7	26.8	49.5	42.7	334
Eastern	12.1	11.4	23.6	13.0	13.7	26.6	25.1	25.1	50.2	53.1	426
Ashanti	11.2	11.6	22.8	16.5	8.1	24.6	27.6	19.7	47.4	51.9	491
Brong Ahafo	10.3	11.3	21.6	14.8	9.9	24.7	25.1	21.2	46.3	53.3	235
Northern	14.5	5.0	19.5	8.0	2.0	10.0	22.5	7.0	29.5	33.9	196
Upper West	12.7	5.6	18.3	5.6	6.3	11.9	18.3	11.9	30.2	39.4	97
Upper East	14.9	6.0	20.9	5.2	3.7	9.0	20.2	9.7	29.9	30.0	209
Education											
No education	12.1	11.7	23.7	7.2	6.0	13.2	19.3	17.7	36.9	35.7	1,106
Primary	12.3	14.2	26.5	11.8	8.5	20.3	24.1	22.7	46.8	43.4	576
Middle/JSS	10.5	11.3	21.8	15.0	11.6	26.6	25.5	22.9	48.4	54.9	1,197
Secondary+	8.4	8.8	17.2	22.7	19.6	42.3	31.1	28.4	59.5	71.0	252
Total women currently married	11.2	11.8	23.0	12.3	9.7	22.0	23.5	21.5	45.0	48.8	3,131
Total women not currently married	4.1	0.6	4.7	9.5	1.3	10.8	13.6	1.9	15.5	69.8	1,712
All women	8.7	7.8	16.5	11.3	6.8	18.0	20.0	14.6	34.6	52.2	4,843

[1] Unmet need for *spacing* includes pregnant women whose pregnancy was mistimed, amenorrhoeic women whose last birth was mistimed, and women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning and say they want to wait two or more years for their next birth. Also included in unmet need for spacing are women who are unsure whether they want another child or who want another child but are unsure when to have the birth. Unmet need for *limiting* refers to pregnant women whose pregnancy was unwanted, amenorrhoeic women whose last child was unwanted and women who are neither pregnant nor amenorrhoeic and who are not using any method of family planning and who want no more children. Excluded from the unmet need category are pregnant and amenorrhoeic women who became pregnant while using a method (these women are in need of *better contraception*). Also excluded are menopausal or infecund women.

[2] Using for *spacing* is defined as women who are using some method of family planning and say they want to have another child or are undecided whether to have another. Using for *limiting* is defined as women who are using and who want no more children.

Note that the specific methods used are not taken into account here.

According to the 1998 GDHS, only about half (49 percent) of the total demand for family planning among married women in Ghana is currently being satisfied (Table 6.5). This, however, is an improvement over the 34 percent of unmet need satisfied in 1993 (GSS and MI, 1994).

As expected, the unmet need for spacing declines with increasing age, while the unmet need for limiting increases with age. Unmet need is high among women in the youngest age group (15-19), and women age 40-44. There is little difference in the unmet need for family planning among urban and rural women. Unmet need is highest in the Volta Region and lowest in the Upper West Region. The unmet need for family planning is inversely related to women's education, and ranges from 17 percent, among women with secondary or higher levels of education to 24 percent, among women with no education.

6.3 Ideal Family Size

Information on what respondents feel is the ideal family size was obtained by asking two questions. Respondents who had no children were asked how many children they would like to have if they could choose exactly the number of children to have in their whole life. Respondents who had children were asked how many children they would like to have if they could go back to the time when they did not have any children and could choose exactly the number of children to have in their whole life.

The results in Table 6.6 show that more than one in three women (36 percent) favours a family size of 4 children; 19 percent consider 3 children as the ideal, while 17 percent consider 6 or more children to be an ideal family size. While the vast majority of women were able to quantify their response, 7 percent of women gave non-numeric responses such as "it is up to God," "any number," or " do not know." The average ideal family size among all women who gave a numeric answer is 4.3; it is slightly higher among currently married women (4.6). The average ideal number of children has fallen only very slightly in the last five years, from 4.4 among all women and 4.7 among currently married women in 1993 (GSS and MI, 1994).

Table 6.6 also shows a slightly similar fertility preference pattern for men, except that Ghanaian men appear more natalistic than women. While the mean ideal number of children is 4.3 for women, it is 4.6 for men. The male-female difference in reported ideal family size is mainly due to reports from polygynous men who prefer almost twice the number of children as monogamous men (data not shown).

The ideal number of children increases from 3.6 among childless women to 5.6 among women with six or more children (Table 6.6). The corresponding numbers for men are 3.9 and 7.1, respectively. The correlation between actual and ideal number is due to two factors. First, it reflects the extent to which women and men are successful in implementing their preferences, that is, those who prefer smaller families will tend to achieve smaller families. Second, women and men tend to adjust their ideal number upwards, as their actual number increases, as a way of rationalisation. Nevertheless, 48 percent of women and 44 percent of men with six or more children report that they consider less than six children to be ideal.

Table 6.7 examines the mean ideal number of children for all women by age, and for women and men by selected background characteristics. The mean ideal family size increases with age from 3.6 children for women age 15-19 to 5.5 for women age 45-49. At every age, rural women are more likely to want a larger family than are urban women. Respondents living in the three northern regions generally tend to have larger ideal family sizes. The ideal family size is inversely related to education, decreasing from 5.4 children for women with no education to 3.3 children for those with secondary or higher education. The corresponding numbers for men are 7.4 and 3.5, respectively.

Table 6.6 Ideal and actual number of children

Percent distribution of all women and men by ideal number of children, and mean ideal number of children for all women and men and for currently married women and men, according to number of living children, Ghana 1998

Ideal number of children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
WOMEN								
0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1
1	0.9	0.6	0.4	0.8	0.1	0.3	0.0	0.5
2	19.3	13.2	8.1	4.7	7.6	5.0	3.1	10.9
3	28.4	30.3	20.2	12.7	5.4	7.0	5.4	19.1
4	31.0	34.0	44.8	40.8	36.3	31.7	32.4	35.5
5	7.6	8.6	9.5	11.6	13.0	13.3	7.2	9.5
6+	6.8	9.0	10.8	22.6	29.3	30.2	39.0	17.2
Non-numeric response	5.7	4.2	6.2	6.8	8.3	12.5	13.0	7.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	1,352	795	717	594	498	359	528	4,843
Mean ideal number for:								
All women	3.6	3.8	4.1	4.7	4.9	5.2	5.6	4.3
Currently married women	3.9	3.8	4.1	4.7	5.0	5.2	5.6	4.6
MEN								
1	1.0	1.4	0.0	1.0	0.0	0.0	0.0	0.7
2	14.6	10.7	7.0	6.9	7.1	5.1	2.6	10.5
3	26.9	35.5	21.2	11.3	7.6	12.2	7.9	21.9
4	31.0	29.9	41.5	36.2	28.5	18.7	23.6	30.7
5	10.0	9.7	10.9	14.8	14.6	9.0	9.7	10.7
6+	10.1	9.3	14.2	24.2	38.7	39.5	48.5	19.2
Non-numeric response	6.4	3.4	5.2	5.6	3.5	15.5	7.7	6.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	743	173	153	124	101	72	179	1,546
Mean ideal number for:								
All men	3.9	4.0	4.4	4.7	5.5	7.0	7.1	4.6
Currently married men	4.1	4.0	4.4	4.7	5.5	7.0	7.1	5.2
Monogamous men	4.1	3.7	4.3	4.7	5.4	5.9	6.3	4.8

Note: The means exclude women who gave non-numeric responses.
[1] Includes current pregnancy

Table 6.7 Mean ideal number of children by background characteristics

Mean ideal number of children for all women and men age 15-49 by age and selected background characteristics, Ghana 1998

Background characteristic	Age							Total women	Total men
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
Residence									
Urban	3.2	3.3	3.5	3.8	4.2	4.4	4.8	3.7	3.8
Rural	3.8	4.0	4.4	5.0	5.0	5.4	5.9	4.6	5.1
Region									
Western	3.6	3.9	4.0	4.3	4.7	4.8	6.0	4.2	4.4
Central	3.5	3.6	4.1	4.0	4.3	4.9	4.8	4.0	4.1
Greater Accra	3.0	3.1	3.2	3.6	4.3	4.3	4.3	3.5	3.6
Volta	3.1	3.1	3.8	4.7	4.3	3.9	4.6	3.8	4.4
Eastern	3.6	3.7	3.7	4.3	4.7	4.6	5.1	4.1	4.2
Ashanti	3.7	3.6	4.1	4.3	4.3	4.8	5.1	4.1	4.4
Brong Ahafo	3.7	3.8	4.1	4.0	4.2	5.6	5.6	4.3	5.5
Northern	5.4	5.9	6.3	8.1	6.7	7.6	9.1	6.9	7.8
Upper West	4.8	5.1	6.0	5.8	6.5	6.7	6.8	5.9	5.9
Upper East	4.9	4.7	5.5	5.7	6.9	6.7	7.8	5.9	6.8
Education									
No education	4.6	4.6	5.0	5.5	5.7	6.0	6.3	5.4	7.4
Primary	3.6	3.6	4.2	4.4	4.6	4.9	5.7	4.2	4.9
Middle/JSS	3.5	3.5	3.6	4.1	4.2	4.6	4.7	3.8	4.2
Secondary+	2.9	3.1	3.2	3.5	3.6	3.2	4.0	3.3	3.5
Total women	3.6	3.7	4.1	4.5	4.7	5.0	5.5	4.3	NA
Total men	3.9	3.8	4.0	4.4	5.2	5.3	5.8	NA	4.6

NA = Not applicable

6.4 Wanted and Unwanted Fertility

Women were asked a series of questions regarding all of their children born in the five years preceding the survey and any current pregnancy to determine whether the pregnancy was wanted *then* (planned), wanted *later* (mistimed) or *not* wanted (unplanned).

Table 6.8 shows the percent distribution of births in the five years before the survey by whether the birth was wanted then, wanted later, or not wanted. Nine percent of births were not wanted while 28 percent were mistimed (i.e. wanted later). The percentage of births that were unwanted goes up with birth order from 2 percent among first order births to 18 percent among higher order births. Unwanted births rise with mother's age at birth. Conversely, the proportion of women with mistimed births decreases from 46 percent for women below 20 years to 12 percent for women age 45-49 years.

Table 6.8 Fertility planning status

Percent distribution of births in the five years preceding the survey (and current pregnancies) by fertility planning status, according to birth order and mother's age at birth, Ghana 1998

Birth order and mother's age at birth	Planning status at conception			Missing	Total	Number of births[1]
	Wanted then	Wanted later	Not wanted			
Birth order						
1	64.4	33.3	1.8	0.6	100.0	829
2	70.8	27.0	1.6	0.6	100.0	723
3	66.8	28.9	3.6	0.7	100.0	548
4+	56.8	23.9	18.3	1.0	100.0	1,483
Age at birth						
<20	52.1	45.8	1.7	0.5	100.0	423
20-24	64.6	32.6	2.6	0.2	100.0	974
25-29	67.5	26.5	5.1	0.9	100.0	876
30-34	66.3	19.5	13.2	1.0	100.0	648
35-39	58.2	19.6	20.9	1.3	100.0	450
40-44	56.4	12.6	29.3	1.7	100.0	193
45-49	(64.9)	(11.6)	(23.5)	(0.0)	100.0	20
Total	62.9	27.5	8.9	0.8	100.0	3,584

Note: Figures in parentheses are based on 25-49 unweighted births.
[1] Includes current pregnancies

Table 6.9 presents *wanted fertility rates*. Wanted fertility rates express the theoretical level of fertility that would result if all unwanted births were actually prevented. Unwanted births are those that exceed the number considered as ideal by respondents. Comparison of actual rates with wanted rates indicates the extent to which couples successfully control their fertility. The total wanted fertility rate measures the number of children that women in the reproductive age of a population aspire to achieve, while the total fertility rate measures the actual rate achieved.

Actual fertility rates are higher than wanted fertility rates at both national and subgroup levels of the population. This indicates a high prevalence of unwanted births in the country. The total fertility rate in Ghana is almost a child more than the wanted fertility rate.

The difference between the total fertility rate and the wanted fertility rate is higher in the rural than the urban areas. The Central, Ashanti and Brong-Ahafo Regions have the largest disparities between total fertility and wanted fertility rates, while the Upper West and Upper East Regions have the lowest disparity. Women with little or no education are less likely to achieve their ideal fertility than women who have higher education.

Table 6.9 Wanted fertility rates

Total wanted fertility rates and total fertility rates for the five years preceding the survey, by selected background characteristics, Ghana 1998

Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	2.4	3.0
Rural	4.3	5.4
Region		
Western	3.9	4.7
Central	3.6	4.8
Greater Accra	2.2	2.7
Volta	3.6	4.4
Eastern	3.5	4.4
Ashanti	3.5	4.8
Brong Ahafo	4.0	5.4
Northern	6.4	7.0
Upper West	5.7	6.1
Upper East	4.5	5.0
Mother's education		
No education	4.9	5.8
Primary	3.8	4.9
Middle/JSS	3.0	3.8
Secondary+	2.5	2.8
Total	3.7	4.6

Note: Rates are based on births to women 15-49 in the period 1-59 months preceding the survey.

CHAPTER 7

INFANT AND CHILD MORTALITY

This chapter presents estimates of levels, trends and differentials in neonatal, post-neonatal, infant and childhood mortality among children in Ghana. In addition, information is presented on high-risk fertility behaviour among Ghanaian women. The data are disaggregated by socio-economic and demographic characteristics to identify segments of the population requiring special attention. Infant and child mortality rates are basic indicators of a country's socio-economic situation and quality of life. Furthermore, this information is useful for monitoring and evaluating population and health programmes and policies.

The mortality rates presented in this chapter are calculated from information collected in the pregnancy history section of the 1998 GDHS female questionnaire. Each female respondent was asked to report on the number of sons and daughters who live with her, the number who live elsewhere, and the number who have died. In addition, she was asked to provide a detailed birth history of her childbearing experience, covering such items as sex, date of birth, whether a birth was single or multiple, survival status, current age of each live birth and, if not alive, the age at death of each live birth. The rates of childhood mortality presented in this chapter are defined as follows:

Neonatal mortality (NN):	the probability of dying within the first month of life;
Post neonatal mortality (PNN):	the difference between infant and neonatal mortality;
Infant mortality ($_1q_0$):	the probability of dying between birth and the first birthday;
Child mortality ($_4q_1$):	the probability of dying between exact age one and the fifth birthday;
Under-five mortality ($_5q_0$):	the probability of dying between birth and the fifth birthday;

All rates are expressed per 1,000 live births, except for child mortality, which is expressed as deaths per 1,000 children surviving to 12 months of age.

Information on pregnancies that did not end in a live birth and on children who died within 7 days is used to estimate **perinatal mortality,** which is the number of stillbirths and early neonatal deaths per 1,000 stillbirths and live births.

7.1 Assessment of Data Quality

The reliability of mortality estimates depends on the extent to which date of birth and age at death are accurately reported and recorded and the completeness with which child deaths are reported. Omission of births and deaths directly affects mortality estimates; displacement of dates has an impact on mortality trends; and misreporting of age at death may distort the age pattern of mortality. An examination of the distribution of births by calendar years (refer to Appendix Table C.4) shows that fairly complete information is available on the age at death for all children. However, there is some evidence of omission of deaths in the most recent five-year period (refer to Appendix Table C.5). The proportion of live births who later died decreases from 19 percent before 1979 to 8 percent since 1994. Some of this decrease may be due to a real reduction in mortality during the most recent period, and some may be due to the fact that younger children have less exposure to the risk of mortality. Nevertheless, this sharp fall does indicate some underreporting in the most recent period.

Age displacement is common in many surveys that include information on health for children below a specified age. In Ghana the cutoff date for asking health questions was January 1993. As Appendix Table C.5 shows, there is evidence of some misreporting of birth dates. The distribution of all children shows a

deficit in the year 1993 and excess in 1992, as denoted by the calendar year ratios for dead children. This pattern is believed to be due to transference of births by interviewers out of the period for which health data were collected. Transference is more severe among dead children than children who are alive at the time of the interview. This is presumably because information on dead children is harder to obtain from mothers, who are reluctant to talk about their deceased children. However, since the displacement of dead children occurs within the five-year reference period for which mortality rates are calculated these rates are unlikely to be affected by such displacement.

Underreporting is often most severe for deaths that occur very early in infancy. A selective underreporting of early neonatal deaths would result in an abnormally low ratio of deaths less than seven days to all neonatal deaths. Early infant deaths have *not* been severely under reported in the 1998 GDHS as suggested by the high ratio of deaths in the first six days to all neonatal deaths (refer to Appendix Table C.6).[1]

Heaping of the age at death on certain digits is another problem that is inherent in most retrospective surveys. Misreporting biases estimates of mortality if the net result of misreporting the age at death is the transference of deaths between age segments for which the rates are calculated. For example, an overestimate of child mortality relative to infant mortality may result if children who died during the first year of life are reported as having died at age one or older. In an effort to minimise the error in reporting the age at death, interviewers in the 1998 GDHS were instructed to record deaths under one month in days, and those under 2 years of age in months. They were also specifically asked to probe for deaths reported at one year of age to ensure that they had actually occurred at 12 months.

The distribution of deaths, less than two years of age, during the 20 years prior to the survey by month of death, indicate some heaping at 3, 7, and 12 months of age, with corresponding deficits in adjacent months. However, these are less pronounced during the period 0-4 years preceding the survey (refer to Appendix Table C.7). Digit preference does not appear to be sufficiently serious, however, to substantially alter the mortality rates calculated here.

7.2 Levels and Trends in Infant and Child Mortality

Neonatal, postneonatal, infant, child, and under-five mortality rates are shown in Table 7.1 for cohorts of children born in three five-year periods, namely, 0-4, 5-9, and 10-14 years before the survey. Looking at the most recent period (0-4 years before the survey or mid-1994 to mid-1998), approximately half of all deaths to children under age five occur during their first year of life; infant mortality is 57 deaths per 1,000 births. The neonatal mortality rate (mortality in the first month of life) is 30 deaths per 1,000 live births, while the risk of postneonatal deaths is 27 per 1,000 live births. Under-five mortality in Ghana is 108 deaths per 1,000 live births. This means about one in nine children born in Ghana dies before their fifth birthday.

[1] There are no model mortality patterns for the neonatal period. However, one review of data from several developing countries concluded that, at levels of neonatal mortality of 20 per 1,000 or higher, approximately 70 percent of neonatal deaths occur within the first six days of life (Boerma, 1988).

Table 7.1 Rates of early childhood mortality

Neonatal, postneonatal, infant, child, and under-five mortality by five-year periods preceding the survey, Ghana 1998

Years preceding survey	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	**Infant mortality ($_1q_0$)**	Child mortality ($_4q_1$)	**Under-five mortality ($_5q_0$)**
0-4	29.7	27.0	56.7	53.9	107.6
5-9	35.1	30.7	65.8	50.8	113.3
10-14	40.7	33.2	73.9	76.6	144.8

[1] Computed as the difference between infant and neonatal mortality rates.

Results from the 1998 GDHS, in combination with similarly collected data from the 1993 GDHS and the 1988 GDHS, show a marked decline in infant and under-five mortality (Table 7.2 and Figure 7.1). Infant mortality declined from 100 per 1,000 live births to 57 per 1,000 live births in the last 20 years, a 43 percent decline. Under-five mortality fell by an equal amount, from 187 deaths per 1,000 live births in 1975 to 108 deaths per 1,000 live births in 1996.

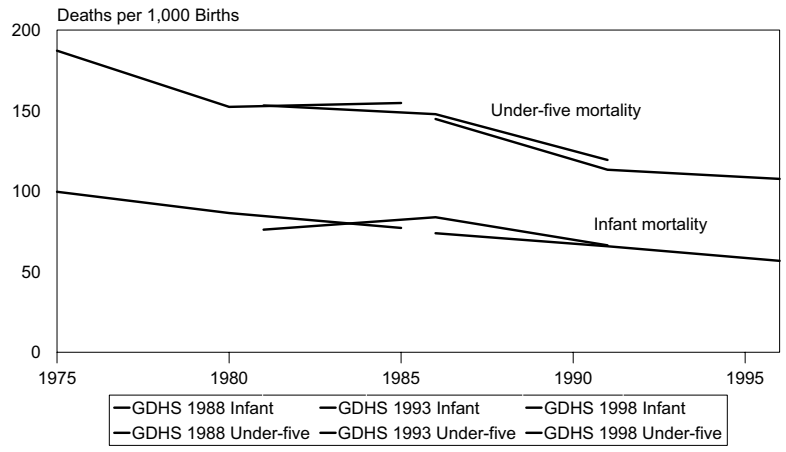
Table 7.2 Trends in infant mortality, 1975-1996

Trends in infant and under-five mortality rate in Ghana, 1975-1996

	Infant mortality			Under-five mortality		
Approximate midpoint	GDHS 1988	GDHS 1993	GDHS 1998	GDHS 1988	GDHS 1993	GDHS 1998
1975	99.6			187.2		
1980	86.4			152.4		
1981		76.1			153.2	
1985	77.2			154.7		
1986		83.8	73.9		147.8	144.8
1991		66.4	65.8		119.4	113.3
1996			56.7			107.6

Source: GSS and IRD, 1989:63; GSS and MI, 1994:85

Figure 7.1
Trends in Infant and Under-Five Mortality
Ghana, 1975-1996



7 . 3 Socio-economic Differentials in Mortality

Child survival is dependent on the use of health facilities, which is affected by social and economic factors. Differentials in the various mortality rates by place of residence, region, and mother's educational level are presented in Table 7.3. A ten-year period (1988-1998) is used to calculate the mortality estimates in order to have a sufficient number of cases to ensure statistical reliability.

Mortality is consistently lower in urban than rural areas. In the ten-year period before the survey, infant mortality in the rural areas was 68 deaths per 1,000 live births compared to 43 deaths per 1,000 live births in the urban areas. The under-five mortality rates during the same period for rural and urban areas were 122 and 77 deaths per 1,000 live births, respectively. Differences in mortality by region are also quite marked. The infant mortality rate varies from 41 deaths in Greater Accra to 84 deaths in the Central Region. As expected, education of the mother displays a strong negative relationship with infant and child mortality. Children born to mothers with little or no education suffer the highest mortality. In the ten years before the survey, the under-five mortality among children born to mothers who had no formal education was more than twice as high (131 deaths per 1000 births) than among children whose mothers had attended secondary school and beyond (60 deaths per 1000 births).

Table 7.3 Neonatal, postneonatal, infant, child, and under-five mortality by socio-economic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality for the ten-year period preceding the survey, by socioeconomic characteristics, Ghana 1998

Socioeconomic characteristic	Neonatal mortality (NN)	Post-neonatal mortality (PNN)	**Infant mortality ($_1q_0$)**	Child mortality ($_4q_1$)	**Under-five mortality ($_5q_0$)**
Residence					
Urban	23.2	19.4	42.6	35.7	76.8
Rural	35.4	32.1	67.5	58.4	122.0
Region					
Western	38.3	29.6	68.0	44.7	109.7
Central	40.9	42.8	83.8	63.6	142.1
Greater Accra	25.9	15.5	41.4	21.5	62.0
Volta	27.0	26.8	53.8	46.7	98.0
Eastern	33.8	16.4	50.2	41.0	89.1
Ashanti	22.3	19.6	41.9	37.9	78.2
Brong Ahafo	(54.4)	(22.9)	(77.3)	(55.7)	(128.7)
Northern	26.7	43.4	70.1	108.8	171.3
Upper West	28.4	42.2	70.6	91.5	155.6
Upper East	25.5	56.0	81.5	80.3	155.3
Mother's education					
No education	33.8	32.3	66.1	69.3	130.8
Primary	41.1	29.2	70.3	45.4	112.5
Middle/JSS	28.6	24.9	53.5	39.9	91.3
Secondary+	(10.5)	(26.3)	(36.8)	(23.9)	(59.8)
Total	32.3	28.9	61.2	52.4	110.4

Note: Rates based on 250-499 exposed persons are in parentheses.
NA = Not applicable

7.4 Demographic Differentials in Mortality

The relationship between early childhood mortality and various demographic variables are shown in Table 7.4 and Figure 7.2. Male children experience slightly higher mortality than female children. Under-five mortality rates for male and female children are 114 and 106 deaths per 1000 live births, respectively. The excess mortality among male children is mostly due to their higher biological risk during the first month of life.

The relationship between maternal age and childhood mortality (with the exception of postneonatal mortality) is for the most part an expected U-shaped curve, if the data are restricted to the age group 15-39. Childhood mortality is substantially higher among mothers age less than 20 and more than 30 years. The data for the age group 40-49 has to be interpreted with caution due to the small number of births to these women.

First births and higher order births experience higher mortality. For example, infant mortality for first births and births of order 7 and higher is 69 and 64 deaths per 1000 live births, respectively, compared to 59 and 57 deaths, respectively, for second and third order and fourth and fifth order births, respectively.

Table 7.4 Neonatal, postneonatal, infant, child, and under-five mortality by biodemographic characteristics

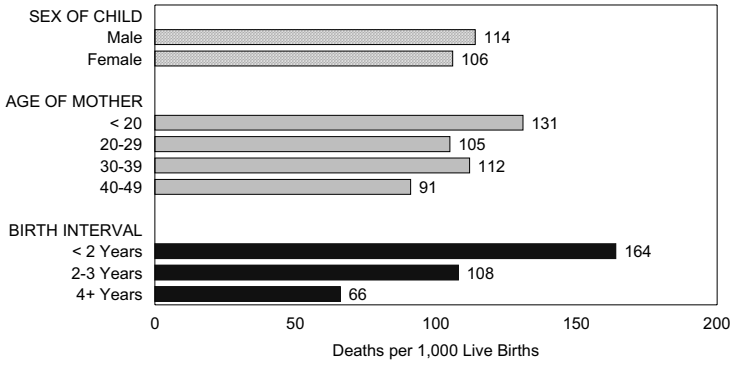
Neonatal, postneonatal, infant, child, and under-five mortality for the ten-year period preceding the survey, by selected biodemographic characteristics, Ghana 1998

Biodemographic characteristic	Neonatal mortality (NN)	Post-neonatal mortality (PNN)	**Infant mortality ($_1q_0$)**	Child mortality ($_4q_1$)	**Under-five mortality ($_5q_0$)**
Sex of child					
Male	36.4	28.0	64.4	53.3	114.3
Female	28.1	29.8	57.9	51.4	106.3
Age of mother at birth					
< 20	48.8	27.6	76.4	59.1	131.0
20-29	25.3	31.4	56.7	51.2	105.0
30-39	38.4	26.3	64.8	50.7	112.2
40-49	(18.4)	(20.2)	(38.6)	(54.4)	(90.9)
Birth order					
1	43.4	25.4	68.8	49.0	114.4
2-3	28.2	30.8	59.0	47.1	103.4
4-6	27.2	29.8	57.0	60.7	114.2
7+	36.4	27.4	63.8	52.1	112.6
Previous birth interval					
< 2 years	57.6	48.0	105.5	65.0	163.7
2-3 years	22.7	29.3	52.0	59.5	108.4
4 or more years	17.2	18.2	35.5	31.9	66.2
Medical maternity care[1]					
No antenatal/delivery care	(40.7)	(32.5)	(73.2)	NA	NA
Either antenatal/delivery care	31.4	38.0	69.4	NA	NA
Both antenatal and delivery care	24.8	19.0	43.8	NA	NA
Total	32.3	28.9	61.2	52.4	110.4

Note: Rates based on 250 to 499 exposed persons are in parentheses.
[1] Refers to births in the five years before the survey
NA = Not applicable

Figure 7.2

Under-Five Mortality by Selected Demographic Characteristics



Note: Rates are for the 10-year period preceding the survey

GDHS 1998

There is a negative association between short birth interval and child survival. Children born less than two years after a previous sibling are two and a half times as likely to die in the first month of life (neonatal mortality) as those born between two and three years after a preceding sibling (58 deaths compared with 23 deaths per 1000 live births). Similarly, children born less than two years after a previous birth are twice as likely to die before their first birthday (infant mortality) than those born after an interval of between two and three years (106 and 52 deaths per 1000 live births, respectively). These findings support the importance of child spacing practices as a means of reducing childhood mortality.

7.5 Perinatal Mortality

Perinatal mortality reflects an adverse outcome for pregnancies of at least seven months gestation. The perinatal mortality rate is obtained by summing all stillbirths and deaths to children within the first week of life (early neonatal deaths), and dividing by the sum of all stillbirths and live births. The perinatal mortality rate captures stillbirths and neonatal deaths, two seemingly different outcomes which result from similar conditions.

The 1998 GDHS asked women to report on all the pregnancies that they had had over their lifetime, including pregnancy losses and their duration. Pregnancy losses are highly susceptible to omission and/or misreporting. Nevertheless, in developing countries, retrospective surveys provide more representative and complete enumeration of perinatal deaths than do most vital registration systems and hospital-based studies.

The perinatal mortality rate for the ten years preceding the survey is 46 deaths per 1,000 stillbirths and live births (Table 7.5). Young mothers (less than 20 years), pregnancies in the rural areas, pregnancies in the Brong Ahafo Region, and pregnancies to mothers with little or no education are at an increased risk of perinatal loss.

7.6 High-Risk Fertility Behaviour

Research has shown a strong relationship between certain characteristics associated with fertility behaviour and children's survival chances. Typically, the probability of dying in infancy is much greater among children born to mothers who are too young (less than 18 years old) or too old (over 34 years old), children born after a short birth interval (less than 24 months after a preceding birth), or children born to mothers with high parity (has three or more children). Table 7.6 shows the percent distribution of children born in the five years before the survey and the percent of currently married women, by these risk factors. The table also shows the risk ratio of mortality for children, by comparing the proportion of deceased children in each high-risk category with the proportion of deceased children not in any high-risk category.

One in two Ghanaian children born in the five years before the survey was in a high-risk category. Nearly a third (31 percent) of children fell into a single risk category while one in five births was in a multiple-risk category. The most common high-risk factor is high birth order.

In general, risk ratios are higher for children in a multiple high-risk category than in a single high-risk category. Births to mothers over 34 years and births with a prior birth interval of less than 24 months are eight times as likely to die than children not in any high-risk category. Fortunately, only a very small percentage of births to mothers are in this category.

The final column in Table 7.6 shows that 72 percent of currently married women have the potential to give birth to a child with an elevated risk of mortality. Thirty percent of these women are (or would be) too old and have (or would have) too many children. The potential for having a birth in a multiple high-risk category is much higher (44 percent) than in a single high-risk category (28 percent).

Table 7.5 Perinatal mortality

Stillbirths, early neonatal deaths and perinatal mortality rate by selected background characteristics for the ten-year period preceding the survey, Ghana 1998

Background characteristic	Number of stillbirths[1]	Number of early neonatal deaths[2]	Perinatal mortality rate[3]	Number of pregnancies of 7 or more months duration in the last 10 years
Mother's age at birth				
<20	32	35	73.2	920
20-29	53	61	34.8	3,273
30-39	47	56	52.9	1,959
40-49	7	5	(42.9)	280
Previous pregnancy interval				
<15 months	21	31	(133.7)	394
15-26 months	24	26	41.6	1,212
27-38 months	22	20	27.3	1,533
39+ months	32	29	31.5	1,944
Residence				
Urban	35	28	39.3	1,619
Rural	104	129	48.5	4,812
Region				
Western	15	21	44.7	792
Central	12	22	43.6	794
Greater Accra	18	16	49.1	690
Volta	16	17	48.7	677
Eastern	33	21	61.1	873
Ashanti	15	19	35.3	972
Brong Ahafo	18	17	68.0	527
Northern	6	10	(35.5)	449
Upper West	3	4	*	207
Upper East	4	10	(30.1)	450
Mother's education				
No education	50	67	45.3	2,587
Primary	32	42	55.9	1,324
Middle/JSS	48	45	42.8	2,185
Secondary+	9	3	(36.9)	335
Total	140	157	46.2	6,431

Note: Rates based on 250 to 499 pregnancies are in parentheses. An asterisk indicates that rates are based on fewer than 250 pregnancies and are not shown.

[1] Stillbirths are fetal deaths to pregnancies lasting seven or more months.

[2] Early neonatal deaths are deaths to live-born children at days 0 to 7 since birth.

[3] Perinatal mortality rate is the sum of the number of stillbirths and early neonatal deaths divided by the number of pregnancies of seven or more months of duration.

Table 7.6 High-risk fertility behaviour

Percent distribution of children born in the five years preceding the survey by category of elevated risk of dying, and the percent distribution of currently married women at risk of conceiving a child with an elevated risk of dying, by category of increased risk, Ghana 1998

Risk category	Births in 5 years preceding the survey		Percentage of currently married women[a]
	Percentage of births	Risk ratio	
Not in any high-risk category	29.1	1.00	21.1
Unavoidable risk category			
(First births)	19.3	1.44	7.4
Single high-risk category			
Mother's age <18	4.2	2.27	0.4
Mother's age >34	1.0	2.16	4.7
Birth interval <24 months	4.7	1.56	9.4
Birth order >3	21.2	1.03	13.3
Subtotal	31.2	1.32	27.8
Multiple high-risk category			
Age <18 & birth interval <24[c] months	0.1	0.00	0.3
Age >34 & birth interval <24 months	0.1	8.17	0.2
Age >34 & birth order >3	14.9	0.94	30.1
Age >34 & birth interval <24 months & birth order >3	2.1	2.09	5.0
Birth interval <24 months & birth order >3	3.2	2.46	8.2
Subtotal	20.4	1.33	43.7
In any high-risk category	51.6	1.32	71.5
Total	100.0	-	100.0
Number of births	3,194	-	3,131

Note: Risk ratio is the ratio of the proportion dead of births in a specific high-risk category to the proportion dead of births *not in any high-risk category*.

[a] Women were assigned to risk categories according to the status they would have at the birth of a child, if the child were conceived at the time of the survey: age less than 17 years and 3 months, age older than 34 years and 2 months, latest birth less than 15 months ago, and latest birth of order 3 or higher.

[b] Includes sterilised women

[c] Includes the combined categories *Age <18 and birth order >3.*

CHAPTER 8

MATERNAL AND CHILD HEALTH

This chapter presents findings from the 1998 GDHS in four areas of importance to maternal and child health (MCH): antenatal, delivery, and post-natal services; characteristics of the newborn; vaccination coverage; and common childhood illnesses and their treatment. Combined with information on childhood mortality, this information can be used to identify subgroups of women and children who face increased risk because of non-use of MCH services, and to provide information to assist in the planning of appropriate improvements in services. Data were obtained for all live births that occurred in the five years preceding the survey.

8.1 Antenatal Care

Antenatal Care Coverage

Questions on antenatal care were asked of all pregnancies to women in the five years preceding the survey. However, in order to maintain comparability with previous surveys, this information is presented for live births only. Table 8.1 shows the percent distribution of live births in the last five years by source of antenatal care, according to background characteristics. Interviewers were instructed to record all persons seen for care, but in the table, only the provider with the highest qualifications is listed. A relatively high percentage of births received antenatal care from trained health personnel. Mothers received antenatal care from a doctor for 25 percent of live births, from a nurse or midwife for 62 percent of live births, and from a trained traditional birth attendant for just under 2 percent of live births (Figure 8.1). For 11 percent of live births, mothers received no antenatal care.

Comparison with the 1993 GDHS results shows little change in the utilisation of antenatal services during the last five years. The percentage of births to women receiving antenatal care from a doctor, nurse or midwife or trained traditional birth attendant, has increased only slightly, from 86 percent in 1993 (GSS and MI, 1994) to 89 percent in 1998. Trained traditional birth attendants play a very minor role in the provision of prenatal services. The percent receiving no antenatal care dropped from around 13 percent to 11 percent over the same period.

Younger women are more likely to use antenatal services than older women. This is especially true with regard to care from doctors and nurses or midwives. Similarly, lower birth order is associated with greater use of services provided by medically trained health workers. This pattern could be attributed to the fact that young women tend to be more educated than older women and are thus more likely to have greater familiarity with the benefits of antenatal care.

There are obvious differences in the use of antenatal services by place of residence. Overall, utilisation is 7 percentage points higher in urban areas than in rural areas, with urban women being more than twice as likely as rural women to obtain antenatal care from a doctor. However, the use of nurses or midwives is 33 percent higher among rural women than among urban women. Antenatal coverage is highest in the Ashanti Region and lowest in the Upper West Region, with women in the Greater Accra Region most likely to seek the services of doctors, and women in the Brong Ahafo Region most likely to receive antenatal care from a nurse or midwife. Table 8.1 also shows that as a woman's education increases, the likelihood that she will not receive any antenatal care decreases sharply from 19 percent of births to women with no education to only 3 percent of births to women who have some secondary education. Use of a doctor for

antenatal care increases from 17 percent among births to uneducated women to 59 percent of births among women who have some secondary education.

Antenatal care when sought early in the pregnancy and continued through to delivery can be more effective in avoiding adverse pregnancy outcomes. Obstetricians generally recommend that antenatal visits be made on a monthly basis to the 28th week (seventh month), fortnightly to the 36th week (eighth month), and weekly until the 40th week (until birth). If the first antenatal visit is made at the third month of pregnancy, this optimum schedule translates to a total of at least 12-13 visits during the duration of the pregnancy.

Table 8.1 Antenatal care

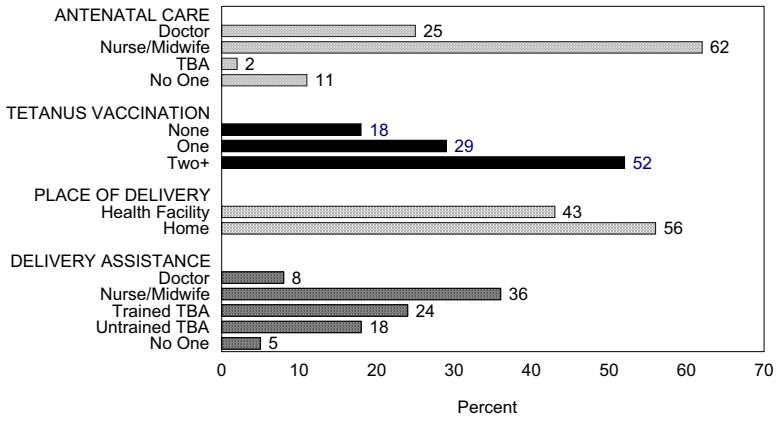
Percent distribution of births in the five years preceding the survey by source of antenatal care during pregnancy, according to selected background characteristics, Ghana 1998

Background characteristic	Antenatal care provider[1]								
	Doctor	Nurse/ Midwife	Trained tradi-tional birth attendant	Untrained tradi-tional birth attendant	Other	No one	Missing	Total	Number of births
Mother's age at birth									
< 20	26.8	63.6	1.0	0.7	0.0	7.9	0.0	100.0	406
20-34	26.4	61.4	1.1	0.2	0.1	10.5	0.3	100.0	2,209
35+	18.8	65.1	3.4	0.0	0.1	12.3	0.2	100.0	579
Birth order									
1	31.2	60.3	1.0	0.4	0.2	6.7	0.2	100.0	749
2-3	27.8	59.6	1.3	0.2	0.1	10.7	0.3	100.0	1,122
4-5	20.6	66.3	1.5	0.1	0.0	11.2	0.2	100.0	683
6+	17.9	65.5	2.6	0.0	0.0	13.6	0.4	100.0	641
Residence									
Urban	45.8	48.7	0.1	0.4	0.0	4.9	0.2	100.0	774
Rural	18.5	66.7	2.0	0.1	0.1	12.3	0.3	100.0	2,421
Region									
Western	29.1	60.1	0.6	0.0	0.0	10.0	0.3	100.0	413
Central	20.8	69.1	1.0	0.3	0.0	8.5	0.3	100.0	379
Greater Accra	54.9	37.6	0.0	0.4	0.0	7.1	0.0	100.0	329
Volta	18.0	68.1	0.4	0.0	0.0	13.1	0.4	100.0	338
Eastern	23.1	66.8	0.3	0.8	0.0	8.5	0.6	100.0	430
Ashanti	30.9	65.0	0.2	0.0	0.0	4.0	0.0	100.0	514
Brong Ahafo	9.8	80.5	0.4	0.0	0.0	8.4	0.9	100.0	260
Northern	11.3	57.3	3.5	0.3	0.9	26.8	0.0	100.0	232
Upper West	6.8	60.6	1.7	0.0	0.0	30.9	0.0	100.0	100
Upper East	22.3	52.3	14.1	0.0	0.3	11.0	0.0	100.0	199
Mother's education									
No education	17.2	59.5	3.5	0.2	0.2	19.2	0.2	100.0	1,228
Primary	22.6	68.3	0.3	0.4	0.0	8.2	0.2	100.0	649
Middle/JSS	29.5	66.2	0.4	0.1	0.0	3.6	0.3	100.0	1,128
Secondary+	58.5	37.9	0.0	0.5	0.0	2.5	0.6	100.0	189
Total	25.1	62.4	1.5	0.2	0.1	10.5	0.3	100.0	3,194

[1] If the respondent mentioned more than one provider, only the most qualified provider is considered.

Figure 8.1

Antenatal Care, Tetanus Vaccinations, Place of Delivery, and Delivery Assistance



Note: Percentages are based on births in the five years preceding the survey.

GDHS 1998

Information about the number and timing of antenatal visits made by pregnant women is presented in Table 8.2. The median number of visits among women who received antenatal care is 4.6, and three in five women who received antenatal care have four or more visits. Around two-fifths of women (44 percent of women receiving some antenatal care) reported that their first visit occurred at less than 4 months of pregnancy. Among women who received care, the median duration of pregnancy at first visit was 4.3 months.

Complications during pregnancy are an important cause of maternal and child morbidity and mortality. Detecting and monitoring these complications is a crucial component of safe motherhood. In order to gauge the quality of care received during pregnancy, the 1998 GDHS included a series of questions on the content of care. Respondents were asked whether they had received each service during at least one of their antenatal visits. Table 8.3 shows the percent distribution of live births by the extent of care given to pregnant women during their antenatal visits. It is encouraging to note that the level of antenatal care is reasonably good in Ghana. Mothers of about three in four births were weighed and measured, had their blood pressure taken, and had their urine and blood tested during their pregnancy. In addition, mothers of more than three in four births received iron and folic/folate acid tablets during their pregnancy. It is also interesting to note that in general, the quality of antenatal care varies little by background characteristics.

Table 8.2 Number of antenatal care visits and stage of pregnancy

Percent distribution of live births in the five years preceding the survey by number of antenatal care (ANC) visits, and by the stage of pregnancy at the time of the first visit, Ghana 1998

Number of visits and stage of pregnancy	Total
Antenatal visits during pregnancy	
None	10.5
1	5.1
2-3 visits	20.2
4+ visits	62.3
Don't know/missing	1.9
Total	100.0
Median	4.6
Number of months pregnant at time of first visit	
No antenatal care	10.5
Less than 4 months	38.9
4-5 months	35.8
6-7 months	12.4
8+ months	1.7
Don't know/missing	0.7
Total	100.0
Median	4.3
Total	3,194

Table 8.3 Antenatal care content

Percentage of live births in the five years preceding the survey by content of antenatal care mother received during pregnancy, according to selected background characteristics, Ghana 1998

Background characteristic	Weight measured	Height measured	Blood pressure measured	Urine tested	Blood tested	Iron tablets taken	Folic/ Folate acid tablets taken	Number of women
Mother's age at birth								
< 20	81.6	74.9	83.9	78.5	80.3	77.9	86.5	406
20-34	82.7	72.8	84.6	75.7	78.7	77.6	83.0	2,209
35+	80.5	69.1	82.2	73.2	75.0	75.1	82.2	579
Birth order								
1	85.4	76.5	87.8	80.2	82.1	80.5	87.4	749
2-3	81.9	72.7	83.4	75.6	78.1	78.1	82.9	1,122
4-5	81.9	71.7	83.9	74.3	77.7	76.7	82.7	683
6+	79.0	67.8	81.0	71.7	74.4	72.5	79.9	641
Residence								
Urban	88.0	76.8	91.5	89.8	89.7	85.8	89.7	774
Rural	80.3	71.0	81.7	71.1	74.5	74.5	81.3	2,421
Region								
Western	82.3	75.6	81.2	77.8	79.8	67.3	80.1	413
Central	80.8	74.6	85.0	76.9	83.1	73.9	81.4	379
Greater Accra	84.0	70.6	90.1	89.0	88.6	85.8	87.6	329
Volta	80.5	54.0	83.6	74.5	73.8	82.0	84.1	338
Eastern	82.7	76.8	85.3	84.5	84.5	80.7	87.0	430
Ashanti	88.5	79.5	90.7	87.5	87.0	80.1	88.4	514
Brong Ahafo	86.3	78.7	89.4	81.9	85.8	89.4	90.7	260
Northern	67.4	56.5	64.3	33.4	39.6	63.7	65.5	232
Upper West	63.6	60.5	65.0	45.1	59.1	58.1	58.8	100
Upper East	87.4	84.0	84.8	55.3	64.4	76.5	88.0	199
Mother's education								
No education	73.8	64.2	74.5	60.5	65.4	69.6	74.4	1,228
Primary	83.6	73.4	86.0	79.9	81.1	77.5	83.0	649
Middle/JSS	88.4	79.1	91.3	86.5	87.7	83.7	92.1	1,128
Secondary+	93.9	81.7	96.1	94.7	94.9	87.4	89.9	189
Total	82.1	72.4	84.1	75.6	78.2	77.2	83.3	3,194

Tetanus Toxoid Coverage

An important component of antenatal care in Ghana is ensuring that pregnant women and children are adequately protected against tetanus. Tetanus toxoid injections are given during pregnancy for prevention of neonatal tetanus, an important cause of death among infants. For full protection, a pregnant woman should receive two doses of tetanus toxoid. However, if a woman has been vaccinated during a previous pregnancy, she may only require one dose during the current pregnancy.

Table 8.4 and Figure 8.1 provides information on tetanus toxoid coverage during pregnancy for all births in the five years preceding the survey. For about half (52 percent) of births, mothers received two or more doses of tetanus toxoid during pregnancy, while 29 percent received one dose. For less than 18 percent of births mothers did not receive a single dose of tetanus toxoid. Although the number of births protected by two doses or more has not changed since 1993, the percentage receiving one dose has risen slightly from 25 percent in 1993 (GSS and MI, 1994) to 29 percent in 1998. In addition, the percentage of births that are not protected at all has fallen from 22 percent to 18 percent in the last five years.

The differentials in tetanus toxoid coverage closely resemble those discussed above with reference to antenatal care. Young maternal age, low birth order, higher education, and urban residence are all

Table 8.4 Tetanus toxoid vaccinations

Percent distribution of births in the five years preceding the survey by number of tetanus toxoid injections mother received during pregnancy, according to selected background characteristics, Ghana 1998

Background characteristic	Number of tetanus toxoid injections				Total	Number of births
	No injection	One dose	Two doses or more	Don't know/ Missing		
Mother's age at birth						
< 20	18.4	27.9	52.6	1.2	100.0	406
20-34	17.5	29.6	51.7	1.2	100.0	2,209
35+	19.3	28.2	50.7	1.8	100.0	579
Birth order						
1	15.4	28.7	54.9	1.0	100.0	749
2-3	17.5	29.7	51.6	1.2	100.0	1,122
4-5	18.0	28.6	51.8	1.6	100.0	683
6+	21.6	29.3	47.5	1.6	100.0	641
Residence						
Urban	11.1	28.9	59.1	1.0	100.0	774
Rural	20.1	29.2	49.2	1.4	100.0	2,421
Region						
Western	14.4	27.7	56.5	1.4	100.0	413
Central	17.9	25.7	55.0	1.3	100.0	379
Greater Accra	13.1	30.5	55.3	1.1	100.0	329
Volta	22.3	36.2	39.7	1.8	100.0	338
Eastern	16.1	39.6	42.9	1.4	100.0	430
Ashanti	14.3	32.0	52.8	0.9	100.0	514
Brong Ahafo	14.1	24.9	59.1	1.8	100.0	260
Northern	34.5	19.7	44.4	1.4	100.0	232
Upper West	37.1	16.8	44.8	1.4	100.0	100
Upper East	15.2	17.3	66.7	0.8	100.0	199
Mother's education						
No education	26.6	26.2	46.3	0.9	100.0	1,228
Primary	17.2	31.2	49.3	2.3	100.0	649
Middle/JSS	10.8	31.9	56.1	1.2	100.0	1,128
Secondary+	7.0	24.4	67.4	1.3	100.0	189
Total	17.9	29.1	51.6	1.3	100.0	3,194

associated with better protection against tetanus. Coverage among mothers residing in the Northern and Upper West Regions is comparatively lower than in the other regions.

8.2 Delivery Care

Place of Delivery

Traditionally, children are delivered at home with the assistance of birth attendants or elders of the community. An important component of efforts to reduce the health risks of mothers and children is to increase the proportion of babies delivered under medical supervision. Proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that can cause the death or serious illness of the mother and/or baby. Respondents in the 1998 GDHS were asked to report the place of birth of all children born in the five years before the survey (Table 8.5). At the national level, 43 percent of births are delivered in health facilities (Figure 8.1). This has not changed since 1993.

Young women and low parity women are more likely than older, high parity women to deliver at a health facility. A child born in an urban area is twice as likely to have been delivered at a health facility than a rural child. Only one in ten children in the Northern Region is delivered in a health facility,

Table 8.5 Place of delivery

Percent distribution of births in the five years preceding the survey by place of delivery, according to selected background characteristics, Ghana 1998

Background characteristic	Place of delivery			Total	Number of births
	At a health facility	At home	Don't know/ Missing		
Mother's age at birth					
< 20	48.7	50.6	0.7	100.0	406
20-34	43.7	55.3	1.0	100.0	2,209
35+	38.5	60.6	1.0	100.0	579
Birth order					
1	56.7	42.6	0.8	100.0	749
2-3	44.3	55.0	0.8	100.0	1,122
4-5	38.4	60.4	1.2	100.0	683
6+	31.8	67.2	1.0	100.0	641
Residence					
Urban	75.7	22.7	1.6	100.0	774
Rural	33.1	66.2	0.7	100.0	2,421
Region					
Western	43.2	56.2	0.6	100.0	413
Central	38.1	60.6	1.3	100.0	379
Greater Accra	73.7	24.2	2.1	100.0	329
Volta	35.4	63.5	1.1	100.0	338
Eastern	47.3	51.3	1.4	100.0	430
Ashanti	56.7	43.3	0.0	100.0	514
Brong Ahafo	50.9	48.2	0.9	100.0	260
Northern	9.2	89.9	0.9	100.0	232
Upper West	22.7	75.9	1.4	100.0	100
Upper East	15.2	84.8	0.0	100.0	199
Mother's education					
No education	24.3	75.0	0.7	100.0	1,228
Primary	38.7	60.2	1.1	100.0	649
Middle/JSS	59.8	39.1	1.2	100.0	1,128
Secondary+	85.7	13.7	0.6	100.0	189
Antenatal care visits					
None	8.6	90.5	0.9	100.0	335
1-3 visits	20.8	77.9	1.3	100.0	808
4 or more visits	57.7	41.8	0.5	100.0	1,990
Don't know/missing	67.4	21.9	10.7	100.0	62
Total	43.4	55.7	0.9	100.0	3,194

compared with three in four children in the Greater Accra Region. Use of delivery facilities rises sharply with maternal education from 24 percent of births among women with no education to 86 percent among children of women with secondary education. Not surprisingly, women who receive antenatal services are more likely to subsequently deliver in a health facility.

Assistance at Delivery

The level of assistance a woman receives during the birth of her child also has important health consequences for both mother and child. Births delivered at home are more likely to be delivered without professional assistance, whereas births delivered at a health facility are more likely to be delivered by trained medical personnel. Table 8.6 and Figure 8.1 shows that 8 percent of births were delivered under the supervision of a doctor, and 36 percent by a nurse or midwife. Trained traditional birth attendants delivered one in four births, a substantial increase from the 15 percent of births delivered by trained traditional birth attendants in 1993 (GSS and MI, 1994). In addition, untrained traditional birth attendants delivered 18 percent of births, indicating that there is still much scope in Ghana to improve safe home delivery.

Table 8.6 Assistance during delivery

Percent distribution of births in the five years preceding the survey by type of assistance during delivery, according to selected background characteristics, Ghana 1998

Background characteristic	Assistance during delivery from: Doctor	Nurse/ Midwife	Trained TBA[1]	Un-trained TBA[1]	Relative/ Other	No one	Don't know/ Missing	Total	Number of births
Mother's age at birth									
< 20	8.8	41.4	25.6	15.5	6.7	1.6	0.4	100.0	406
20-34	8.3	36.4	24.3	17.4	8.8	4.3	0.5	100.0	2,209
35+	6.1	32.5	22.9	21.5	8.5	8.3	0.2	100.0	579
Birth order									
1	12.2	46.1	21.7	12.5	5.8	1.2	0.5	100.0	749
2-3	9.3	36.3	23.6	17.0	9.4	4.0	0.3	100.0	1,122
4-5	5.1	33.3	24.6	21.9	10.0	4.5	0.6	100.0	683
6+	3.9	27.9	27.7	21.7	8.5	10.0	0.4	100.0	641
Residence									
Urban	19.0	57.3	11.5	6.4	2.9	2.3	0.6	100.0	774
Rural	4.5	29.6	28.3	21.6	10.3	5.4	0.4	100.0	2,421
Region									
Western	6.1	38.5	31.9	11.6	3.3	8.0	0.6	100.0	413
Central	5.2	34.8	40.4	15.6	1.0	2.3	0.7	100.0	379
Greater Accra	24.8	47.8	10.0	7.8	4.6	3.9	1.1	100.0	329
Volta	5.3	31.1	13.1	23.3	20.8	5.6	0.7	100.0	338
Eastern	7.8	39.5	30.5	12.1	8.0	2.1	0.0	100.0	430
Ashanti	9.6	48.4	21.5	10.8	4.6	5.1	0.0	100.0	514
Brong Ahafo	5.3	46.0	18.1	9.7	13.3	6.6	0.9	100.0	260
Northern	1.9	9.2	23.3	47.8	14.0	3.7	0.0	100.0	232
Upper West	3.1	19.0	22.0	30.9	15.4	8.5	1.0	100.0	100
Upper East	3.1	13.7	23.5	42.9	14.1	2.6	0.0	100.0	199
Mother's education									
No education	3.2	21.9	25.4	28.7	13.6	7.0	0.2	100.0	1,228
Primary	7.4	32.5	29.4	15.8	8.3	6.0	0.6	100.0	649
Middle/JSS	9.9	50.7	22.6	9.9	4.5	1.8	0.6	100.0	1,128
Secondary+	29.4	56.5	8.8	2.8	0.0	1.8	0.6	100.0	189
Antenatal care visits									
None	0.3	9.4	22.9	34.7	22.0	10.2	0.6	100.0	335
1-3 visits	3.2	17.9	34.4	25.6	10.8	7.7	0.4	100.0	808
4 or more visits	11.0	47.8	20.9	12.2	5.3	2.6	0.1	100.0	1,990
Don't know/missing	16.2	53.1	4.0	9.2	7.3	0.6	9.6	100.0	62
Total	8.0	36.3	24.2	17.9	8.5	4.7	0.4	100.0	3,194

[1] Traditional birth attendant

Older women and women who have already had many births are much more likely to have received no assistance at delivery, whereas first births and births to younger women tend to receive better care during delivery, including more frequent supervision by a physician.

Urban women are much more likely than rural women to receive the benefit of medical supervision during delivery; births in urban areas are 4 times more likely to be delivered with the assistance of a doctor than births in rural areas. Also, as seen with place of delivery, educated women are much more likely to have the advantage of medically-supervised delivery, as are women who reside in the Greater Accra Region.

Characteristics and Complications of Delivery

According to mothers' reports, only 4 percent of babies born in Ghana are delivered by caesarean section (Table 8.7). Caesarean sections (C-sections) are less common among women with a large number of children, rural women, and those with little or no education. The data suggest that access to services for C-sections are quite limited in most regions outside of Greater Accra.

Most babies (79 percent) born in Ghana are not weighed at birth. However, 19 percent of babies weighed 2.5 kilograms or more at birth, and less than 2 percent weighed less than 2.5 kilograms at birth. Respondents were also asked for their own subjective assessment of whether their babies were very large, larger than average, average, smaller than average, or very small in size at birth. While information of this type is subject to considerable error for individual births, at the population level, the proportion of births that are reported as very small or small is correlated with the prevalence of low birth weight. The GDHS data indicate that 13 percent of births were reported as being very small or smaller than average at birth, and that such births are associated with low educational level of the mother and residence in the Upper East and Northern Regions (Table 8.7).

Table 8.7 Delivery characteristics: caesarean section, birth weight and size

Among births in the five years preceding the survey, the percentage of deliveries by caesarean section, and the percent distribution by birth weight and by the mother's estimate of baby's size at birth, according to selected background characteristics, Ghana 1998

		Birth weight			Size of child at birth					
Background characteristic	Delivery by C-section	Less than 2.5 kg	2.5 kg or more	Not weighed/ Don't know/ Missing	Very small/ Smaller than average	Average	Large	Very large	Don't know	Number of births
Mother's age at birth										
<20	4.6	2.4	16.6	81.0	14.9	26.9	47.6	9.8	0.8	406
20-34	4.3	1.8	20.2	78.0	12.3	28.4	47.2	11.4	0.7	2,209
35+	2.3	1.3	16.2	82.4	13.4	31.1	45.5	9.2	0.7	579
Birth order										
1	7.6	2.4	24.6	73.0	15.5	29.5	42.1	11.7	1.1	749
2-3	4.9	1.9	20.4	77.8	11.3	29.3	47.9	11.0	0.5	1,122
4-5	1.3	2.1	18.1	79.8	10.5	27.7	51.7	9.3	0.8	683
6+	0.8	0.7	11.0	88.3	14.9	27.7	45.8	11.0	0.5	641
Residence										
Urban	8.5	4.6	43.6	51.8	12.3	28.2	43.7	15.0	0.8	774
Rural	2.5	0.9	11.1	88.0	13.0	28.9	47.9	9.5	0.7	2,421
Region										
Western	4.4	0.0	9.4	90.6	12.5	23.8	52.1	10.2	1.4	413
Central	3.6	2.0	13.3	84.7	8.1	40.7	40.4	10.1	0.7	379
Greater Accra	11.7	5.0	55.6	39.5	8.5	26.6	46.1	17.7	1.1	329
Volta	1.4	1.6	11.0	87.4	11.8	29.1	50.6	7.1	1.4	338
Eastern	5.7	1.0	22.4	76.6	13.0	23.0	50.9	12.8	0.3	430
Ashanti	2.3	2.9	23.9	73.2	12.7	28.8	44.6	13.9	0.0	514
Brong Ahafo	3.1	0.9	17.4	81.7	7.6	25.4	55.5	10.6	0.9	260
Northern	1.4	0.8	3.7	95.5	22.3	31.0	40.2	6.2	0.3	232
Upper West	2.0	1.7	6.4	91.9	14.7	27.4	46.9	9.6	1.4	100
Upper East	1.0	1.3	8.9	89.8	26.4	33.3	38.0	2.1	0.3	199
Mother's education										
No education	1.8	1.1	8.3	90.6	15.8	28.5	47.3	7.7	0.7	1,228
Primary	2.9	1.2	15.7	83.2	10.8	29.9	47.8	11.1	0.4	649
Middle/JSS	5.2	2.8	25.9	71.4	11.4	27.5	46.5	13.7	0.8	1,128
Secondary+	14.2	2.6	58.9	38.6	9.4	32.4	44.0	13.0	1.2	189
Total	4.0	1.8	19.0	79.2	12.8	28.7	46.9	10.8	0.7	3,194

8.3 Postnatal Care

Another crucial component of safe motherhood is postnatal care. Care immediately following delivery is important both for the mother and child, to monitor and treat complications arising from the delivery. Postnatal care is also an important source of information for mothers on how to care for themselves and their baby.

The timing of postnatal care is important. Since most maternal and neonatal deaths occur within two days of delivery, postnatal care should be received immediately following the birth, during this critical period. Table 8.8 shows the timing of postnatal care for births that occurred outside of a health facility, since it is assumed that institutional deliveries will entail a postnatal check before the mother and child are released. Only four percent of births that took place outside a health facility received postnatal care during the first two days of delivery. Even more troubling is the fact that nearly one in two non-institutional deliveries did not receive any postnatal care.

Table 8.8 Postnatal care

Percent distribution of births in the five years preceding the survey by whether Vitamin A was received within six weeks of delivery, and for births outside a health facility, by timing of postnatal care, Ghana 1998

Background characteristic	Vitamin A received within 6 weeks of delivery			Number of births	Timing of first postnatal check among births occurring outside a health facility						Total	Number of births outside a health facility
	No	Yes	Missing		Within 2 days	3-7 days	8-27 days	4 or more weeks	Don't know/ Missing	No care received		
Mother's age at birth												
< 20	73.4	26.2	0.4	406	6.8	7.0	17.9	23.3	0.7	44.3	100.0	208
20-34	71.0	28.4	0.6	2,209	3.7	6.1	21.4	18.5	1.5	48.7	100.0	1,243
35+	75.0	24.3	0.7	579	4.8	6.4	15.7	17.5	1.2	54.4	100.0	356
Birth order												
1	68.8	30.4	0.8	749	5.7	7.6	24.2	18.8	1.4	42.3	100.0	325
2-3	70.2	29.3	0.4	1,122	3.5	6.1	22.2	17.9	1.5	48.7	100.0	625
4-5	74.8	24.3	0.9	683	2.7	5.4	17.4	20.2	1.5	52.7	100.0	420
6+	75.9	23.5	0.5	641	6.0	6.2	15.7	19.0	0.9	52.2	100.0	437
Residence												
Urban	68.0	31.1	0.9	774	6.1	4.9	23.2	18.6	5.0	42.3	100.0	188
Rural	73.3	26.2	0.5	2,421	4.1	6.4	19.5	18.9	1.0	50.2	100.0	1,620
Region												
Western	69.0	29.9	1.1	413	5.9	8.8	26.8	21.0	1.0	36.6	100.0	234
Central	64.5	34.5	1.0	379	5.8	5.3	14.2	20.0	1.1	53.7	100.0	235
Greater Accra	68.4	30.5	1.1	329	8.1	4.1	9.5	17.6	9.4	51.4	100.0	87
Volta	87.9	11.4	0.7	338	3.4	8.1	15.9	11.4	1.1	60.2	100.0	218
Eastern	82.3	17.5	0.2	430	2.1	7.8	20.4	13.0	0.0	56.6	100.0	227
Ashanti	82.3	17.7	0.0	514	2.5	4.6	30.2	20.1	0.0	42.6	100.0	222
Brong Ahafo	77.2	21.9	0.9	260	2.7	7.2	19.8	23.4	1.8	45.1	100.0	128
Northern	67.7	32.0	0.3	232	6.6	3.2	10.7	17.3	1.6	60.6	100.0	211
Upper West	58.3	40.7	1.0	100	4.0	4.4	12.9	16.5	3.6	58.7	100.0	78
Upper East	28.3	71.5	0.3	199	3.1	6.5	29.0	30.9	0.6	29.9	100.0	169
Mother's education												
No education	71.2	28.6	0.2	1,228	4.0	4.6	16.2	19.9	0.9	54.4	100.0	929
Primary	75.9	23.7	0.4	649	3.7	7.1	20.7	19.0	2.1	47.3	100.0	398
Middle/JSS	71.8	27.1	1.1	1,128	5.6	8.1	26.1	17.1	1.5	41.5	100.0	453
Secondary+	65.3	33.5	1.2	189	(0.0)	(15.2)	(30.3)	(13.3)	(4.4)	(36.8)	100.0	27
Total	72.0	27.4	0.6	3,194	4.3	6.2	19.9	18.9	1.4	49.3	100.0	1,808

Note: Figures in parentheses are based on 25-49 (unweighted) children.

The most important providers of postnatal care for births that occurred outside of a health facility are trained nurses/midwives (Table 8.9). Trained nurses/midwives provided postnatal care to 39 percent of births in the last five years, trained traditional birth attendants to 5 percent of births, and doctors to 4 percent of births.

Table 8.9 Postnatal care providers

Percent distribution of live births occurring outside of a health facility in the five years preceding the survey, by type of provider, according to selected background characteristics, Ghana 1998

Background characteristic	Postnatal care provider[1]								
	Doctor	Nurse/ Midwife	Trained tradi-tional birth attendant	Untrained tradi-tional birth attendant	Other	Don't know/ Missing	No post-natal care	Total	Number of births
Mother's age at birth									
< 20	7.0	39.7	7.4	0.5	0.3	0.7	44.3	100.0	208
20-34	4.2	40.2	5.0	0.3	0.7	0.9	48.7	100.0	1,243
35+	2.5	36.3	5.0	0.8	0.7	0.5	54.4	100.0	356
Birth order									
1	5.7	41.7	7.6	0.4	0.9	1.4	42.3	100.0	325
2-3	4.9	40.4	4.7	0.5	0.4	0.4	48.7	100.0	625
4-5	3.0	38.1	4.0	0.3	0.6	1.3	52.7	100.0	420
6+	3.0	37.4	5.5	0.6	0.8	0.5	52.2	100.0	437
Residence									
Urban	7.3	45.4	1.7	0.0	0.8	2.5	42.3	100.0	188
Rural	3.8	38.6	5.7	0.5	0.6	0.6	50.2	100.0	1,620
Region									
Western	2.4	53.7	4.9	0.5	1.0	1.0	36.6	100.0	234
Central	1.6	36.8	6.8	0.0	0.0	1.1	53.7	100.0	235
Greater Accra	12.1	33.8	0.0	0.0	0.0	2.7	51.4	100.0	87
Volta	3.3	30.5	1.1	0.5	3.4	1.1	60.2	100.0	218
Eastern	5.3	28.2	9.4	0.0	0.5	0.0	56.6	100.0	227
Ashanti	3.6	50.3	2.5	0.5	0.0	0.5	42.6	100.0	222
Brong Ahafo	0.0	53.1	0.0	0.0	0.0	1.8	45.1	100.0	128
Northern	2.2	28.9	5.7	1.9	0.3	0.3	60.6	100.0	211
Upper West	2.6	34.2	3.1	0.0	0.0	1.3	58.7	100.0	78
Upper East	12.7	42.9	14.2	0.3	0.0	0.0	29.9	100.0	169
Mother's education									
No education	4.6	34.4	5.2	0.7	0.5	0.3	54.4	100.0	929
Primary	4.5	42.7	4.3	0.0	0.6	0.6	47.3	100.0	398
Middle/JSS	2.9	45.9	6.6	0.3	1.1	1.8	41.5	100.0	453
Secondary+	(6.3)	(50.6)	(1.9)	(0.0)	(0.0)	(4.4)	(36.8)	100.0	27
Total	4.2	39.4	5.3	0.4	0.6	0.8	49.3	100.0	1,808

Note: Figures in parentheses are based on 25-49 (unweighted) children.
[1] If the respondent mentioned more than one provider, only the most qualified provider is considered.

To monitor the quality of postnatal care, respondents in the 1998 GDHS were asked if they had received advice on a number of care indicators: new-born care, breastfeeding, complementary feeding, vitamins, immunisations, delivery complications, and family planning; during their first postnatal check-up. In general, the quality of postnatal care for births delivered in a health facility is much better than for non-institutional deliveries. For example, advice on new-born care was given to mothers of two in three births in a health facility (data not shown), as opposed to two in five births in a non-health setting (Table 8.10). Advice on the various types of care following delivery ranges from 59-68 percent of births for mothers who delivered in a health facility compared to 33-43 percent of births to mothers who delivered outside of a health facility. In addition, mothers of 32 percent of births in a health facility received Vitamin A within six weeks of delivery, compared with 24 percent in a non-health facility.

Table 8.10 Postnatal care content

Percent distribution of births delivered outside of a health facility in the five years preceding the survey, by content of postnatal care received, according to selected background characteristics, Ghana 1998

Background characteristic	Percentage of women given advice on: Newborn care	Breast-feeding	Compli-cations on breast-feeding	Vitamins	Immuni-sations	Delivery compli-cations	Family planning	Per-centage given vitamin A within 6 weeks	Per-centage not checked in first 6 weeks	Number of women
Mother's age at birth										
<20	44.3	46.8	37.1	36.9	43.5	33.0	36.6	20.6	44.3	208
20-34	41.3	44.1	40.2	37.8	44.3	33.7	38.2	24.5	48.7	1,243
35+	35.7	37.8	34.5	33.8	38.9	29.1	33.6	24.7	54.4	356
Birth order										
1	46.5	48.2	41.4	41.2	46.9	35.4	40.0	25.4	42.3	325
2-3	42.1	45.0	38.7	36.8	43.7	33.5	38.0	24.4	48.7	625
4-5	36.6	39.8	37.8	35.0	40.9	31.2	36.5	24.5	52.7	420
6+	37.7	40.1	37.5	35.7	41.5	30.9	34.3	22.1	52.2	437
Residence										
Urban	46.2	49.9	45.7	41.8	49.9	39.6	40.3	18.8	42.3	188
Rural	39.9	42.4	37.9	36.3	42.3	31.9	36.7	24.7	50.2	1,620
Region										
Western	53.2	54.6	49.8	45.9	52.7	42.4	46.8	23.4	36.6	234
Central	34.7	38.4	34.7	31.6	36.8	28.9	30.5	24.7	53.7	235
Greater Accra	35.1	37.8	35.1	29.7	37.8	29.7	28.4	27.1	51.4	87
Volta	30.4	31.6	22.8	23.5	31.6	18.5	31.1	5.4	60.2	218
Eastern	33.6	37.2	35.0	32.1	38.2	31.5	30.8	11.3	56.6	227
Ashanti	53.8	54.9	51.8	51.4	54.4	49.2	48.6	12.7	42.6	222
Brong Ahafo	50.4	52.2	48.6	50.4	53.1	46.8	49.5	13.5	45.1	128
Northern	30.2	32.4	21.3	21.6	27.6	15.0	23.2	31.6	60.6	211
Upper West	28.9	29.8	31.1	26.6	33.8	22.6	27.1	36.4	58.7	78
Upper East	49.7	57.1	56.8	53.7	63.9	40.4	50.9	71.6	29.9	169
Mother's education										
No education	35.2	38.1	34.0	30.8	38.0	27.0	32.3	28.6	54.4	929
Primary	41.1	43.8	37.9	37.2	44.0	34.3	36.3	18.7	47.3	398
Middle/JSS	50.4	52.4	48.3	48.3	52.2	42.2	46.7	19.1	41.5	453
Secondary+	(52.6)	(52.6)	(50.1)	(48.2)	(54.5)	(46.3)	(54.5)	(28.3)	(36.8)	27
Total	40.5	43.2	38.7	36.9	43.1	32.7	37.1	24.1	49.3	1,808

Note: Figures in parentheses are based on 25-49 (unweighted) children.

8.4 Vaccination of Children

The 1998 GDHS collected information on vaccination coverage for all children born in the five years preceding the survey. The data presented here are for children age 12-23 months, the youngest cohort of children who have reached the age by which they should be fully vaccinated, and are restricted to children who were alive at the time of the survey. In order to be considered fully vaccinated, a child should receive the following vaccinations: one dose of BCG, three doses each of DPT and polio, and one dose of the measles vaccine. BCG, which should be given at birth or first clinical contact, protects against tuberculosis. DPT protects against diphtheria, pertussis, and tetanus. DPT and polio require three vaccinations at approximately six, ten and 14 weeks of age (since this regime is not always followed, emphasis is given on getting all three doses by the time the child reaches the age of 12 months). Measles should be given at or soon after reaching nine months. The World Health Organisation (WHO) recommends that children receive the complete schedule of vaccinations before twelve months of age. In addition to the six vaccine preventable diseases, information was also collected on vaccination against yellow fever.

Information on vaccination coverage was collected in two ways: from children's health cards seen by the interviewer and from mothers' verbal reports. If a mother was able to present a health card to the interviewer, this was used as the source of information, with the interviewer recording vaccination dates directly from the card. In addition to collecting vaccination information from cards, there were two ways of collecting the information from the mother herself. If a vaccination card had been presented, but a vaccine had not been recorded on the card as being given, the mother was asked to recall whether or not that particular vaccine had been given. If the mother was not able to provide a card for the child at all, she was asked to recall whether or not the child had received BCG, polio and DPT (including the number of doses for each), measles, and yellow fever vaccinations. Cards were presented for 76 percent of children age 12-23 months.

Information on vaccination coverage is presented in Table 8.11, according to the source of information used to determine coverage, i.e., the child health card or mothers' report. One in two Ghanaian children age 12-23 months was fully immunised by 12 months of age while 9 percent received no vaccinations before his/her first birthday (Figure 8.2). An impressive nine in ten children have received the BCG and first dose of DPT and polio vaccines before age one. While the coverage for the first dose of DPT and polio is high, the dropout rate is also high, with only two in three children receiving the third dose of either of these two vaccines. Sixty-one percent of children received the measles vaccine before age one and 39 percent have been vaccinated against yellow fever. The proportion of children fully vaccinated before age one has increased over the last five years, from 43 percent in 1993 (GSS and MI, 1994) to 51 percent in 1998.

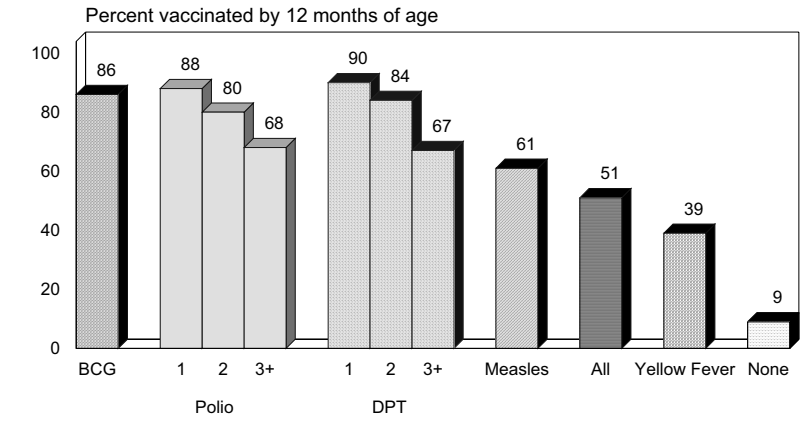
Table 8.11 Vaccinations by source of information

Percentage of children 12-23 months who have received specific vaccines at any time before the survey, by source of information, and the percentage vaccinated by 12 months of age, Ghana 1998

Source of information	Percentage of children who received:												Number of children
		DPT			Polio								
	BCG	DPT1	DPT2	DPT3	Polio0	Polio1	Polio2	Polio3	Measles	All[1]	Yellow fever	None	
Vaccinated at any time before the survey													
Vaccination card	72.0	75.1	70.6	64.6	36.1	75.5	71.4	63.9	61.3	56.5	50.7	0.0	489
Mother's report	15.9	14.3	12.0	7.6	5.3	16.2	14.4	7.7	11.4	5.5	8.9	7.1	154
Either source	87.8	89.4	82.7	72.2	41.5	91.7	85.8	71.6	72.6	62.0	59.6	7.1	644
Vaccinated by 12 months of age[2]	85.9	87.7	80.3	67.6	41.5	89.8	83.5	67.1	60.9	50.5	38.9	8.8	644

[1] Children who are fully vaccinated (i.e., those who have received BCG, measles and three doses of DPT and polio (excluding polio 0)).
[2] For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written record of vaccination.

Figure 8.2
Vaccination Coverage Among Children Age 12-23 Months



Note: Based on health card information and mothers' report

GDHS 1998

Table 8.12 presents vaccination coverage (according to information from health cards and mothers' reports) among children age 12-23 months by selected background characteristics. There is little male-female difference in coverage. Coverage and birth order is inversely related. For example, two in three children of birth order 1 and 2 are fully immunised compared to one in two children of birth order six and over. As expected, urban coverage is much higher than rural coverage (72 percent versus 58 percent), with coverage ranging from a high of 74 percent in the Greater Accra Region to a low of 47 percent in the Northern Region. Three in four children of mothers with middle/JSS level of schooling are fully covered as opposed to less than one in two children of mothers with no education.

In addition to vaccination coverage, mothers were also asked about Vitamin A intake. Table 8.12 shows that one in four children in Ghana received Vitamin A within the six months prior to the survey.

Trend in Vaccination Coverage

As mentioned earlier, it is recommended that children receive all their required vaccinations during the first year of life. Table 8.13 shows the percentage of children who have received vaccinations during the first year of life according to their current age. A general idea of the trend can be obtained by comparing the coverage by age one among children in the four age cohorts. In general, coverage at age one has improved in the most recent year. This is especially obvious in the percentage fully immunized by age one, which is about eight percentage points higher among the youngest cohort than among the three older cohorts.

Table 8.12 Vaccinations by background characteristics

Percentage of children 12-23 months who had received specific vaccines by the time of the survey (according to the vaccination card or the mother's report), and the percentage with a vaccination card, according to background characteristics, Ghana 1998

Background characteristic	Percentage of children who received:												Percentage with a vaccination card	Percentage who received vitamin A in the last 6 months	Number of children
		DPT			Polio										
	BCG	DPT1	DPT2	DPT3	Polio0	Polio1	Polio2	Polio3	Measles	All[1]	Yellow fever	None			
Child's sex															
Male	87.2	89.6	81.9	72.0	41.0	91.6	85.3	71.4	72.7	62.4	59.6	7.2	74.3	27.0	322
Female	88.5	89.1	83.5	72.4	42.0	91.9	86.3	71.7	72.6	61.7	59.6	7.0	77.7	23.4	322
Birth order															
1	89.9	90.5	85.3	78.4	44.3	92.1	86.7	78.1	76.7	68.8	65.1	6.2	78.9	23.8	165
2-3	90.9	93.2	88.2	79.2	43.0	95.7	91.2	76.4	76.4	66.6	63.2	4.3	79.3	26.9	228
4-5	87.1	88.8	80.5	67.3	40.0	89.9	82.9	66.6	70.0	57.0	55.6	8.3	69.8	23.1	126
6+	80.3	81.5	71.5	56.2	36.3	85.8	77.6	59.1	63.1	49.8	49.7	12.3	72.5	26.0	125
Residence															
Urban	93.4	93.9	89.5	83.7	60.3	96.3	91.6	81.8	81.5	72.3	70.4	3.7	78.5	19.8	180
Rural	85.7	87.6	80.0	67.7	34.1	89.9	83.5	67.6	69.2	58.0	55.4	8.4	75.1	27.3	463
Residence															
Western	89.1	85.9	83.7	77.2	35.9	91.3	89.1	75.0	75.0	67.4	63.0	8.7	75.0	31.5	105
Central	84.7	88.1	79.7	61.0	28.8	88.1	83.0	57.6	69.5	49.1	62.7	10.2	67.8	33.9	73
Greater Accra	91.8	96.7	95.1	88.5	73.7	98.3	93.4	85.2	83.6	73.7	65.6	1.7	80.3	14.8	71
Volta	78.3	76.4	70.6	65.2	30.1	81.9	74.3	63.4	69.2	59.8	52.2	18.1	68.8	7.2	65
Eastern	89.2	91.8	80.5	60.5	36.4	90.4	83.4	63.4	63.4	52.1	47.8	6.7	75.4	11.8	84
Ashanti	89.5	91.5	85.2	79.7	47.7	91.6	85.3	78.7	73.4	67.8	62.8	6.3	79.6	13.9	107
Brong Ahafo	(84.6)	(97.4)	(87.0)	(79.4)	(43.9)	(94.8)	(92.2)	(79.4)	(82.0)	(66.6)	(66.6)	(2.6)	(84.6)	(20.8)	45
Northern	87.7	80.8	66.8	54.4	22.6	96.5	79.0	63.1	59.7	47.4	56.1	3.5	65.0	47.3	38
Upper West	88.0	90.0	88.0	79.9	58.0	96.0	92.0	78.0	77.9	68.0	59.9	4.0	86.0	51.9	17
Upper East	95.9	97.3	89.1	71.3	42.5	97.3	90.4	71.3	75.3	65.8	57.5	1.4	86.3	74.0	38
Mother's education															
No education	82.1	82.6	74.9	59.0	29.9	88.1	78.4	57.5	58.2	47.1	44.5	11.7	71.5	28.6	234
Primary	88.7	90.9	82.8	73.9	39.5	93.1	87.3	74.4	76.3	63.3	61.1	6.0	76.4	27.3	134
Middle/JSS	91.9	93.4	87.8	81.5	46.7	93.1	90.7	82.0	81.8	72.7	70.3	4.4	78.7	21.9	236
Secondary/Higher	(94.5)	(100.0)	(97.4)	(88.5)	(85.1)	(100.0)	(94.5)	(82.4)	(91.1)	(82.4)	(79.7)	(0.0)	(85.5)	(17.1)	39
Total	87.8	89.4	82.7	72.2	41.5	91.7	85.8	71.6	72.6	62.0	59.6	7.1	76.0	25.2	644

Note: Figures in parentheses are based on 25-49 (unweighted) children.
[1] Children who are fully vaccinated (i.e., those who have received BCG, measles and three doses of DPT and polio (excluding polio 0)).

Table 8.13 Vaccinations in first year of life by current age

Among children age one to four years, the percentage with a vaccination card and the percentage who have received each vaccine before their first birthday, according to current age of the child, Ghana 1998

Vaccine	Current age of child in months				All children 12-59 months
	12-23	24-35	36-47	48-59	
Vaccination card seen by interviewer	76.0	70.4	57.9	55.3	65.2
Percentage vaccinated at 0-11 months[1]					
BCG	85.9	84.4	83.5	84.1	84.5
DPT 1	87.7	82.4	80.9	82.1	83.4
DPT 2	80.3	73.9	72.1	71.2	74.6
DPT 3	67.6	59.3	57.4	58.8	61.0
Polio 0	41.5	42.7	38.3	36.1	39.7
Polio 1	89.8	85.2	84.7	85.8	86.5
Polio 2	83.5	76.1	74.4	73.2	77.0
Polio 3	67.1	58.3	56.3	55.6	59.6
Yellow fever	38.9	39.5	19.8	32.8	32.9
Measles	60.9	57.5	55.2	56.5	57.6
All vaccinations[2]	50.5	42.9	41.4	42.5	44.5
Number of children	644	549	577	569	2,339

[1] Information was obtained either from a vaccination card or from the mother if there was no written record. For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as that for children with a written vaccination record.
[2] Children who have received BCG, measles, and three doses each of DPT and polio vaccines, excluding polio 0, which is given at birth

8.5 Acute Respiratory Infection

Pneumonia is a leading cause of childhood mortality. Early diagnosis and treatment with antibiotics can prevent a large proportion of deaths due to pneumonia. There is, therefore, emphasis placed on the recognition of signs of impending severity, both by mothers and primary health care workers so that help can be sought.

The prevalence of ARI was estimated by asking mothers if their children under age five had been ill with a cough accompanied by short rapid breathing in the two weeks preceding the survey. These symptoms are compatible with pneumonia. It should be borne in mind that morbidity data collected in surveys are subjective that is, based on a mother's perception of illness and not validated by medical personnel, and that prevalence of ARI is subject to seasonality.

Table 8.14 shows that 14 percent of children under five years of age showed symptoms of ARI at some time in the two weeks preceding the survey. The prevalence of ARI varies by age of the child, and is especially high among children age 6-11 months (21 percent). Rural children have a higher occurrence of symptoms of ARI than urban children, as are children of mothers with little or no education. Children living in the Upper East and Volta Regions are also more likely to show symptoms of ARI.

Table 8.14 Prevalence and treatment of acute respiratory infection

Percentage of children under five years who were ill with a cough accompanied by fast breathing, and treatment for symptoms of acute respiratory infection (ARI), during the two weeks preceding the survey, Ghana 1998

Background characteristic	Percentage of children with cough and rapid breathing	Number of children	Among children with symptoms of ARI, percentage taken to a health facility[1]	Percentage of children with symptoms of ARI who received advice or treatment from:					Number of ill children
				Government facility	Private medical facility	Community health worker	Pharmacy/ Drugstore/ Chemist	Others	
Child's age									
< 6 months	12.4	295	(39.1)	(35.8)	(0.0)	(3.3)	(10.8)	(12.9)	37
6-11 months	20.6	314	33.2	26.7	6.6	0.8	21.7	3.6	65
12-23 months	16.9	644	31.9	23.1	7.5	2.2	20.7	4.0	109
24-35 months	15.0	549	19.5	13.7	5.8	0.0	12.8	5.1	83
36-47 months	11.1	577	20.3	18.3	1.8	2.7	23.3	7.2	64
48-59 months	8.6	569	13.4	13.4	0.0	1.1	16.4	13.3	49
Child's sex									
Male	13.4	1,450	27.8	22.5	4.1	1.9	20.2	7.9	194
Female	14.1	1,499	24.7	19.6	4.9	1.2	16.5	5.4	211
Birth order									
1	14.5	676	23.9	18.8	5.6	0.5	20.8	5.9	98
2-3	13.8	1,044	30.6	22.4	7.3	1.3	17.1	5.9	144
4-5	14.7	633	24.9	21.8	2.6	2.2	13.4	6.9	93
6+	11.9	596	21.8	19.9	0.0	2.6	23.6	8.6	71
Residence									
Urban	11.1	733	36.6	26.0	9.4	1.3	19.5	5.5	81
Rural	14.6	2,215	23.6	19.7	3.3	1.6	17.9	6.9	324
Region									
Western	12.6	381	(28.6)	(23.8)	(4.8)	(0.0)	(35.7)	(9.5)	48
Central	14.4	335	(25.7)	(15.4)	(10.3)	(0.0)	(25.6)	(5.1)	48
Greater Accra	10.0	315	(33.3)	(25.9)	(7.4)	(0.0)	(18.6)	(11.1)	32
Volta	17.5	325	(6.7)	(4.2)	(2.5)	(0.0)	(10.4)	(4.2)	57
Eastern	13.2	403	(21.2)	(13.3)	(6.1)	(1.9)	(13.3)	(15.2)	53
Ashanti	13.0	485	29.5	25.7	3.7	0.0	18.1	3.7	63
Brong Ahafo	10.9	233	*	*	*	*	*	*	25
Northern	16.4	203	29.8	21.8	3.9	4.0	11.9	6.0	33
Upper West	15.0	90	(30.8)	(28.3)	(0.0)	(2.6)	(7.7)	(2.6)	13
Upper East	18.1	179	53.2	51.6	1.6	11.3	17.7	3.2	32
Mother's education									
No education	15.3	1,113	27.7	23.3	3.4	2.8	12.7	5.4	170
Primary	13.6	597	19.5	15.9	2.3	1.9	22.3	7.2	81
Middle/JSS	12.9	1,055	24.1	18.9	5.2	0.0	23.8	8.6	136
Secondary+	10.0	184	*	*	*	*	*	*	18
Total	13.8	2,948	26.2	21.0	4.5	1.6	18.3	6.6	405

Note: Figures in parentheses are based on 25-49 (unweighted) children. An asterisk indicates that a figure is based on fewer than 25 (unweighted) children and has been suppressed.

[1] Excludes pharmacy/drugstore/chemist, traditional practitioner, drug peddler and other nonspecified persons.

Use of a health facility for the treatment of ARI symptoms is low in Ghana; one in four children reported to be suffering from symptoms of ARI was taken to a health facility. Use of a health facility for ARI is lowest among children age 48-59 months and highest among children under one year. Male children are slightly more likely to be taken to a health facility, as are children of birth order 2 and 3, and urban children. Children with symptoms of ARI residing in the Volta Region are least likely to be taken to a health facility. There is no clear evidence to suggest that education influences the decision to take children to a health facility.

Advice or treatment for symptoms of ARI is most commonly sought from government health facilities. Nevertheless, a sizeable number of children also received help from pharmacies/drugstores/ chemists.

8.6 Fever

A major manifestation of malaria and other acute infections in children is fever. Malaria and fever contribute to high levels of malnutrition and mortality. Although fever can occur all year round, malaria is more prevalent during the rainy season, and as such temporal factors must be taken into account when interpreting the occurrence of fever as an indicator of malaria prevalence. In the GDHS, mothers were asked whether their children under age five had a fever in the two weeks preceding the survey. Table 8.15 shows that 27 percent of children under five years of age were reported to have had fever in the two weeks prior to the survey. Prevalence of fever peaks at 33 percent among children age 12-23 months. Differentials by sex, and urban-rural residence are negligible, but there is some variation in the prevalence of fever by birth order, and region, with higher order births (4+), and children residing in the Volta and Northern Regions, more likely to suffer from fever. There is no clear pattern in the incidence of fever by mother's education.

As in the case of symptoms of ARI treatment, government facilities and pharmacies/drugstores/ chemists play a major role in providing advice and treatment for fever.

Given the fact that malaria is a common occurrence in Ghana, antimalarial treatment is the most commonly prescribed treatment for fever, with three in five children receiving it (Table 8.15). Government facilities most commonly prescribe antimalarial treatment. Seventy-four percent of children with fever receive antimalarial treatment from a government facility (data not shown). Pharmacies/drugstores/chemists are also important sources of antimalarial treatment. It is surprising to note that 51 percent of children receive antimalarial treatment at home without having been to a provider (data not shown). There is little variation in treatment with antimalarials by background characteristics.

8.7 Diarrhoea

In the 1998 GDHS, mothers of children under age five were asked if their children had suffered from diarrhoea in the two-week period before the survey. If a child had diarrhoea, the mother was asked what she did to treat the diarrhoea. Since the prevalence of diarrhoea varies seasonally, the results, which only pertain to the period of fieldwork from November to February, should be interpreted with caution.

Table 8.16 presents data on the prevalence of diarrhoea among children less than five years of age and the treatment provider (including non-medical providers). Eighteen percent of children had experienced diarrhoea at some time in the two weeks preceding the survey; 4 percent of children had experienced bloody diarrhoea probably indicating dysentery. Diarrhoeal prevalence increases with age to peak at age 12-23 months (27 percent) then falls again at older ages (Figure 8.3).

Diarrhoea and bloody diarrhoea varies little by sex and urban-rural residence. Prevalence is higher among children of birth order 6+, and those residing in the Northern Region. The relationship between maternal education and diarrhoeal prevalence in children is pronounced. The children of women with at least some secondary education are less likely to experience diarrhoea and bloody diarrhoea (8 percent and less than one percent, respectively) than children of women with little or no education (21 percent and 6 percent, respectively).

Government facilities provided treatment or advice on diarrhoea to 21 percent of children, while private facilities accounted for only 4 percent. Pharmacies/drugstores/chemists, as a single category, are the most common providers of treatment or advice (23 percent).

Table 8.15 Prevalence and treatment of fever

Percentage of children under five years who were ill with fever during the two weeks preceding the survey, by selected background characteristics, Ghana 1998

Background characteristic	Percentage of children with fever	Number of children	Among children with fever, percentage taken to a health facility[1]	Percentage of children with symptoms of ARI who received advice or treatment from:					Percentage of children with fever treated with anti-malarials	Number of ill children
				Government facility	Private medical facility	Community health worker	Pharmacy/ Drug-store/ Chemist	Others		
Child's age										
< 6 months	11.2	295	(47.6)	(26.6)	(21.0)	(1.6)	(13.0)	(1.9)	(77.5)	33
6-11 months	31.2	314	41.6	35.7	4.7	1.7	9.1	5.2	62.2	98
12-23 months	33.3	644	44.3	32.7	8.7	4.0	19.8	5.5	57.4	214
24-35 months	31.5	549	33.8	25.6	6.5	2.1	15.1	5.6	57.8	173
36-47 months	26.3	577	37.8	33.5	4.0	0.3	19.1	3.4	62.5	151
48-59 months	21.3	569	39.3	34.4	4.5	1.0	14.9	4.9	62.7	121
Child's sex										
Male	26.8	1,450	41.1	32.8	7.1	1.8	15.2	4.5	60.7	388
Female	26.9	1,499	38.5	30.6	6.3	2.3	17.3	5.1	60.7	403
Birth order										
1	25.1	676	48.5	40.1	7.3	1.1	16.8	3.2	64.3	170
2-3	25.3	1,044	40.5	32.0	6.6	1.9	16.5	5.6	61.8	264
4-5	28.1	633	37.0	29.7	6.5	1.4	16.2	3.9	60.7	178
6+	30.1	596	33.4	25.1	6.5	3.8	15.6	6.2	55.7	179
Residence										
Urban	26.0	733	50.8	36.0	13.6	1.2	12.3	3.6	60.1	191
Rural	27.1	2,215	36.3	30.3	4.5	2.3	17.5	5.2	60.9	600
Region										
Western	23.7	381	48.1	34.2	11.4	3.8	22.8	5.1	58.2	90
Central	24.0	335	44.6	32.3	12.3	0.0	29.2	7.7	44.6	80
Greater Accra	28.9	315	48.7	33.3	12.8	2.6	9.0	2.6	55.1	91
Volta	36.8	325	23.2	21.0	1.2	1.0	9.9	2.0	79.8	119
Eastern	23.0	403	34.2	28.1	6.1	0.0	18.7	4.8	57.4	93
Ashanti	20.6	485	44.0	36.0	6.9	1.1	19.5	9.0	60.9	100
Brong Ahafo	22.7	233	(26.2)	(19.7)	(6.6)	(0.0)	(6.5)	(0.0)	(69.4)	53
Northern	37.9	203	36.0	30.0	3.4	5.2	15.5	7.7	50.8	77
Upper West	30.3	90	41.7	34.2	3.7	3.8	5.0	6.3	34.1	27
Upper East	33.6	179	58.2	55.6	0.0	5.2	18.3	2.6	78.3	60
Mother's education										
No education	28.1	1,113	33.4	26.3	4.3	3.8	18.3	7.0	54.6	312
Primary	25.8	597	41.8	33.3	7.4	2.2	17.0	4.5	63.8	154
Middle/JSS	25.4	1,055	42.4	35.5	6.5	0.4	15.1	3.1	65.3	268
Secondary+	30.9	184	57.4	38.7	18.7	0.0	8.4	2.1	64.2	57
Total	26.8	2,948	39.8	31.7	6.7	2.1	16.3	4.8	60.7	791

Note: Figures in parentheses are based on 25 to 49 (unweighted) children.
[1] Excludes pharmacy/drugstore/chemist, traditional practitioner, drug peddler and other nonspecified persons.

Table 8.16 Prevalence and treatment of diarrhoea

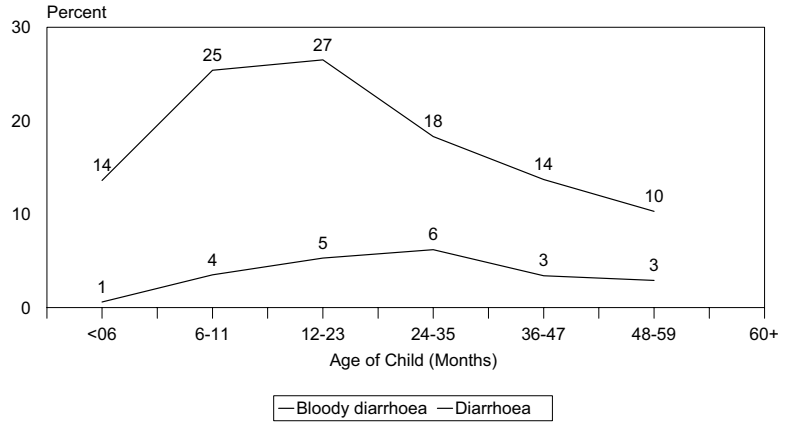
Percentage of children under five years with diarrhoea during the two weeks preceding the survey, by source of advice or treatment, according to selected background characteristics, Ghana 1998

Background characteristic	Percentage of children with diarrhoea	Percentage of children with bloody diarrhoea	Number of children	Percentage of children with symptoms of diarrhoea who received advice or treatment from: Government facility	Private medical facility	Community health worker	Pharmacy/ Drugstore/ Chemist	Others	Number of ill children
Child's age									
< 6 months	13.6	0.6	295	(22.1)	(0.0)	(1.3)	(17.9)	(5.8)	40
6-11 months	25.4	3.5	314	23.0	8.7	0.7	16.7	8.0	80
12-23 months	26.5	5.3	644	27.0	6.2	2.8	24.7	8.7	171
24-35 months	18.3	6.2	549	12.4	3.9	1.8	29.0	5.8	101
36-47 months	13.7	3.4	577	17.9	0.0	0.0	23.8	10.6	79
48-59 months	10.3	2.9	569	22.1	2.0	1.8	19.8	8.6	58
Child's sex									
Male	18.8	3.9	1,450	24.3	3.3	1.9	24.1	8.4	273
Female	17.1	4.0	1,499	18.2	5.4	1.4	22.0	7.8	256
Birth order									
1	17.9	3.5	676	18.2	5.9	2.1	31.4	5.5	121
2-3	14.9	2.6	1,044	24.4	4.3	0.8	23.7	7.5	156
4-5	19.1	4.8	633	23.3	4.9	2.7	18.0	12.8	121
6+	22.1	6.0	596	18.8	2.3	1.3	19.4	7.0	131
Residence									
Urban	16.7	1.8	733	19.8	5.7	1.0	24.4	3.9	123
Rural	18.3	4.7	2,215	21.8	3.9	1.9	22.7	9.4	406
Region									
Western	18.0	4.5	381	21.7	10.0	1.7	28.3	8.3	69
Central	16.6	5.5	335	(17.8)	(6.7)	(4.4)	(26.7)	(11.1)	56
Greater Accra	14.1	1.9	315	(21.0)	(5.3)	(2.6)	(23.8)	(5.2)	44
Volta	14.5	3.0	325	(22.6)	(0.0)	(0.0)	(23.6)	(5.0)	47
Eastern	12.4	1.1	403	(11.7)	(0.0)	(0.0)	(19.0)	(12.1)	50
Ashanti	20.2	2.8	485	16.6	5.9	0.0	30.7	5.8	98
Brong Ahafo	20.8	1.5	233	(11.9)	(4.8)	(0.0)	(9.6)	(7.2)	49
Northern	31.4	2.1	203	24.0	2.0	2.1	17.6	11.6	64
Upper West	19.2	6.1	90	32.1	1.9	0.0	2.0	12.0	17
Upper East	19.8	7.9	179	54.4	0.0	7.3	29.4	4.4	35
Mother's education									
No education	21.3	5.9	1,113	22.6	3.6	1.7	20.6	11.2	237
Primary	20.7	3.7	597	15.4	3.8	2.9	26.0	5.6	124
Middle/JSS	14.5	2.7	1,055	22.1	5.3	0.8	24.6	6.2	153
Secondary+	8.2	0.6	184	*	*	*	*	*	15
Total	17.9	4.0	2,948	21.3	4.3	1.6	23.1	8.1	529

Note: Figures in parentheses are based on 25-49 (unweighted) children. An asterisk indicates that a figure is based on fewer than 25 (unweighted) children and has been suppressed.

Figure 8.3

Prevalence of Diarrhoea and Bloody Diarrhoea in the Two Weeks Preceding the Survey, by Age of Child



Note: Prevalence in the two weeks preceding the survey

GDHS 1998

Dehydration caused by severe diarrhoea is a major cause of morbidity and mortality among young children. A simple and effective response to a child's dehydration is a prompt increase in fluid intake, that is, oral rehydration therapy (ORT). Rehydration therapy may include the use of solution prepared from packets of oral rehydration salts (ORS) or recommended home fluids (RHF) such as sugar-salt-water solution. In addition, it is recommended that food intake should not be decreased for children suffering from diarrhoea.

Table 8.17 shows that the general knowledge of ORS is high among mothers (82 percent), as is the percentage of women who have ever prepared ORS (70 percent). However, when asked about specific eating and drinking regimes for sick children, the findings are less encouraging. Among women with a birth in the five years preceding the survey, 10 percent reported that a child should get less to drink and 15 percent said they should get less to eat when the child is sick with diarrhoea. Nevertheless, 25 percent of women correctly said that the child should receive more to drink; and 82 percent said that the child should get the same amount or more to eat.

It is more common for younger mothers than older mothers to believe that a child with diarrhoea should receive less to drink and eat. Mothers in the Eastern Region are most likely to report that children with diarrhoea should receive less to drink and mothers residing in the Greater Accra Region are most likely to believe that children should receive less to eat. Perhaps unexpectedly, maternal education does not lead to a consistent pattern of better knowledge regarding food and fluid intake during diarrhoeal episodes. In fact, highly educated mothers are more likely to state that children with diarrhoea should have less to eat than are less educated mothers.

Table 8.17 Knowledge of diarrhoea care

Percentage of mothers with births in the five years before the survey who know about Oral Rehydration Salt (ORS) packets and have ever prepared ORS, and their knowledge of feeding practices during diarrhoea, Ghana 1998

Background characteristic	Know about ORS for treatment of diarrhoea	Ever prepared ORS packet	Compared with usual feeding practices, appropriate feeding during diarrhoea: Liquids: Less	Liquids: Same	Liquids: More	Liquids: Don't know/ Missing	Solid foods: Less	Solid foods: Same	Solid foods: More	Solid foods: Don't know/ Missing	Number of women
Age											
15-19	75.2	50.3	15.5	38.5	38.0	8.0	15.3	28.6	49.6	6.5	107
20-24	82.4	62.8	11.8	51.0	30.5	6.7	13.4	23.3	58.0	5.3	517
25-29	85.4	71.6	9.6	61.1	24.6	4.8	17.0	26.2	54.4	2.4	604
30-34	81.1	72.4	9.4	64.8	22.5	3.3	15.7	24.7	57.2	2.3	427
35-39	83.2	77.1	7.9	68.5	20.2	3.4	14.2	29.1	55.5	1.2	442
40+	77.8	72.1	8.5	65.2	22.4	3.9	12.6	26.5	59.0	2.0	214
Residence											
Urban	95.4	79.7	8.9	60.5	24.3	6.3	19.0	21.8	55.4	3.7	602
Rural	77.7	66.4	10.2	60.2	25.4	4.2	13.5	27.4	56.4	2.7	1,708
Region											
Western	83.0	63.2	6.3	66.4	23.7	3.6	10.3	30.4	56.1	3.2	289
Central	89.9	67.9	13.9	48.3	34.0	3.8	15.3	14.8	67.5	2.4	258
Greater Accra	93.5	78.9	12.9	50.9	28.0	8.2	23.4	17.0	53.7	6.0	255
Volta	68.6	63.2	8.9	58.3	22.0	10.8	15.2	20.9	61.2	2.8	258
Eastern	87.9	71.8	16.1	48.4	31.1	4.3	18.0	19.8	59.4	2.9	317
Ashanti	92.1	76.1	4.0	80.0	13.0	3.1	11.6	33.2	53.6	1.6	372
Brong Ahafo	80.0	80.6	9.1	60.5	28.0	2.4	9.2	42.1	45.7	3.1	190
Northern	48.9	50.3	13.4	55.3	27.0	4.4	15.1	24.2	56.8	4.0	150
Upper West	65.2	51.6	6.6	54.2	36.8	2.5	9.5	27.5	62.4	0.5	68
Upper East	81.0	77.0	7.1	71.9	19.7	1.4	20.0	35.9	41.7	2.4	154
Mother's education											
No education	66.4	60.3	9.6	56.0	30.1	4.2	14.5	23.4	59.0	3.1	844
Primary	83.2	67.7	14.9	55.9	24.7	4.5	16.3	21.3	60.9	1.5	469
Middle/JSS	94.6	78.0	7.5	65.7	21.8	5.0	12.9	30.6	53.3	3.1	849
Secondary+	100.0	84.5	9.4	67.1	16.5	7.0	24.8	28.3	41.2	5.8	149
Total	82.3	69.9	9.9	60.3	25.1	4.7	14.9	26.0	56.1	3.0	2,311

ORS = Oral rehydration salts

Table 8.18 shows mothers' actual feeding practices when their children under five suffered from diarrhoea. It is disconcerting to note that 18 percent of mothers decreased their children's fluid intake and 58 percent reduced their food intake.

Table 8.19 shows data concerning types of treatment of recent episodes of diarrhoea among children less than five years, as reported by the mother. The GDHS indicates that only one in four children with diarrhoea in the two weeks preceding the survey was taken to a health facility for treatment. Children age 24-47 months, female children, and children of birth order 6+, were least likely to be taken to a health facility for treatment. There is no clear advantage of education on the percentage of children taken to a health facility for treatment.

Oral rehydration therapy (ORT) was administered to a sizeable percentage of children. Twenty-nine percent of children received an ORS solution, eight percent received recommended home fluids (RHF),

Table 8.18 Feeding practices during diarrhoea

Percent distribution of children under five years who had diarrhoea in the two weeks preceding the survey, by amount of fluids and solid foods given compared with normal practice, Ghana 1998

Feeding practice	Total
Amount of fluids given	
Same	22.3
Increased	57.8
Decreased	18.2
Don't know/missing	1.7
Amount of solid foods given	
Same	23.5
Increased	16.3
Decreased	58.4
Don't know/missing	1.8
Total	100
Number	529

35 percent received either ORS or RHF, 58 percent received increased fluids, 69 percent received either ORS, RHF, or increased fluids, and 25 percent got ORS, RHF, or increased fluids, and the same/more amount of food. Nearly one in two children received a pill or syrup, 3 percent an injection, and 18 percent other home remedies. Eight percent of children with diarrhoea did not receive any kind of treatment.

Generally, therapeutic intervention increases with increasing age of the child. There is little difference in the use of oral rehydration by sex of the child. A higher percentage of urban than rural children receive oral rehydration, as do children who reside in the Upper East Region. The impact of education on the treatment of diarrhoea is less clear.

Table 8.19 Diarrhoea treatment

Among children under five years who had diarrhoea in the two weeks preceding the survey, the percentage taken for treatment to a health facility or provider, the percentage who received oral rehydration therapy (ORT) (either solution prepared from ORS packets, recommended home fluid (RHF), or increased fluids), the percentage who received no ORT and the percentage given other treatments, according to selected background characteristics, Ghana 1998

Background characteristic	Percentage taken to a health facility or provider[1]	Oral rehydration therapy				ORS, RHF or increased fluids	ORS, RHF, or increased fluids, and same or more food	Other treatments				Number of children
		ORS packet	RHF at home	Either ORS or RHF	Increased fluids			Injection	Pill or syrup	Home remedy/ Other	No treatment	
Child's age												
< 6 months	(23.4)	(21.6)	(4.7)	(26.3)	(33.5)	(48.0)	(28.1)	(1.3)	(48.4)	(5.8)	(31.5)	40
6-11 months	32.3	29.8	6.6	34.9	55.1	62.6	10.8	4.4	50.4	14.7	6.6	80
12-23 months	34.0	36.5	8.8	40.6	59.9	73.9	25.4	2.3	44.7	14.5	7.0	171
24-35 months	17.5	25.7	5.2	29.8	59.6	68.3	30.1	2.9	49.7	26.2	1.9	101
36-47 months	17.9	22.5	8.8	29.8	60.8	68.1	23.5	3.0	43.9	19.6	9.3	79
48-59 months	25.0	27.8	15.9	39.3	65.1	80.3	34.4	2.9	45.8	20.8	2.6	58
Child's sex												
Male	28.7	30.3	8.3	35.6	57.8	68.3	25.4	3.6	49.8	15.2	9.0	273
Female	23.9	28.1	8.2	34.0	57.9	69.6	24.5	2.0	43.6	20.0	6.3	256
Birth order												
1	24.7	27.6	5.6	31.3	58.1	66.1	18.8	4.8	54.8	18.1	7.8	121
2-3	29.4	31.1	9.5	38.0	55.1	70.5	27.1	3.0	44.9	16.0	9.0	156
4-5	29.5	32.0	9.9	36.5	63.3	71.8	29.2	2.3	41.8	20.7	7.3	121
6+	21.5	25.9	7.7	32.8	55.7	67.2	24.4	1.3	46.2	16.0	6.4	131
Residence												
Urban	26.4	34.1	6.0	40.1	53.6	68.6	32.7	2.8	46.9	11.3	11.4	123
Rural	26.4	27.8	8.9	33.2	59.1	69.1	22.7	2.9	46.8	19.4	6.6	406
Region												
Western	30.0	31.7	21.7	45.0	65.0	73.3	18.3	3.3	46.7	13.3	5.0	69
Central	(26.7)	(35.6)	(4.4)	(37.8)	(40.0)	(60.0)	(11.1)	(0.0)	(42.2)	(20.0)	(6.7)	56
Greater Accra	(28.9)	(31.6)	(5.3)	(36.9)	(36.9)	(57.9)	(15.8)	(0.0)	(36.9)	(7.9)	(15.7)	44
Volta	(22.6)	(23.1)	(5.0)	(25.6)	(58.3)	(63.8)	(18.1)	(5.0)	(41.2)	(27.6)	(8.0)	47
Eastern	(11.7)	(23.5)	(4.1)	(27.5)	(47.8)	(59.1)	(30.0)	(2.0)	(53.8)	(23.9)	(7.3)	50
Ashanti	22.6	33.4	2.4	35.8	71.6	77.6	32.2	5.8	59.9	19.8	8.3	98
Brong Ahafo	(16.7)	(16.8)	(4.7)	(19.1)	(71.4)	(73.8)	(35.9)	(0.0)	(40.6)	(21.4)	(9.4)	49
Northern	27.1	21.7	6.3	27.0	49.8	62.3	27.2	3.2	53.4	13.4	7.3	64
Upper West	34.0	26.0	12.0	38.0	63.9	79.9	18.0	0.0	27.8	17.9	10.0	17
Upper East	60.3	48.5	25.0	61.8	66.2	85.3	38.2	4.4	33.8	7.3	0.0	35
Mother's education												
No education	27.4	29.6	6.5	33.9	52.1	64.0	21.3	1.9	46.2	15.7	8.7	237
Primary	21.2	22.5	9.4	29.5	56.9	67.2	25.6	4.1	50.3	20.9	5.6	124
Middle/JSS	26.6	34.5	9.7	41.2	66.4	77.3	30.4	2.7	44.3	18.7	7.9	153
Secondary+	*	*	*	*	*	*	*	*	*	*	*	15
Total	26.4	29.2	8.3	34.8	57.8	69.0	25.0	2.8	46.8	17.5	7.7	529

Note: Figures in parentheses are based on 25 to 49 (unweighted) children who had diarrhoea. An asterisk indicates that a figure is based on fewer than 25 (unweighted) children and has been suppressed.
ORS = Oral rehydration salts
[1] Excludes pharmacy/drugstore/chemist, traditional practitioner, drug peddler and other nonspecified persons.

CHAPTER 9

MATERNAL AND CHILD NUTRITION

For all births occurring during the five years before the survey, the 1998 Ghana Demographic and Health Survey (GDHS) asked mothers about the duration and intensity of breastfeeding, the types of complementary food given, and whether or not a bottle with a nipple was used while breastfeeding, Furthermore, the height and weight of these children as well as their mother's height, weight and arm circumference were measured.

Infant feeding practices affect the health of both the mother and her child. They are important determinants of children's nutritional status and many studies have shown that breastfeeding has beneficial effects on the nutritional status, morbidity, and mortality of young children. Breastfeeding is also associated with longer periods of postpartum amenorrhoea, which in turn leads to longer birth intervals and lower fertility levels. A longer birth interval allows mothers to recover fully before the next pregnancy and averts maternal depletion, which may follow births that are too closely spaced.

Maternal nutritional status has important implications for the health of the mother as well as that of her children. A woman who is in poor nutritional health has a greater risk of having an adverse pregnancy outcome and is more likely to give birth to underweight babies.

9.1 Breastfeeding and Supplementation

Prevalence of Breastfeeding

Table 9.1 shows the percentage of children who were ever breastfed and the timing of initial breastfeeding for all children born in the three years before the survey by selected background characteristics.[1] Breastfeeding is nearly universal in Ghana, with 97 percent of children being breastfed at some time during their infancy. The 1993 GDHS showed a similar proportion breastfed (GSS and MI, 1994). There is little difference in the percent of all children ever breastfed by background characteristics.

Early initiation of breastfeeding is beneficial to both mothers and their children. Early suckling benefits mothers because it stimulates the release of a hormone that helps the uterus to contract. The first breast milk is important for babies because it contains colostrum which is rich in antibodies that protect the newborn from diseases. In Ghana, one in four babies is breastfed within one hour of birth and one in two is breastfed within 24 hours of birth. It is important to point out that since 1993 the proportion of children breastfed within one hour and one day has markedly increased. The 1993 GDHS, which collected information on all children born in the three years before the survey, found that 16 percent of children were breastfed within one hour of birth, and 44 percent were breastfed within one day. (GSS and MI, 1994).

There is little difference in the timing of initial breastfeeding by sex. Urban babies, children of mothers with at least secondary education, children of mothers assisted at delivery by medically trained health professionals (doctors and nurse/midwives), and children delivered in a health facility, are more likely

[1] Even though information on breastfeeding was collected for all children born in the five years preceding the survey, the tables on breastfeeding is restricted to children born in the three years before the survey, as most children are weaned by age three.

to be breastfed immediately after birth or within one day of birth. It is interesting to note that since 1993 the percent of all children who were breastfed within one hour or within one day of birth has declined significantly in the Upper East Region. In fact, according to data collected in 1998, these children are least likely to be breastfed immediately after birth or within one day of birth, compared with children living in the other regions.

Table 9.1 Initial breastfeeding

Percentage of children born in the three years preceding the survey who were ever breastfed, and the percentage who started breastfeeding within one hour of birth and within one day of birth, by selected background characteristics, Ghana 1998

Background characteristic	Percentage ever breastfed	Percentage who started breastfeeding: Within one hour of birth	Percentage who started breastfeeding: Within one day of birth[1]	Number of children
Child's sex				
Male	97.4	24.7	53.5	1,573
Female	97.5	25.9	53.8	1,621
Residence				
Urban	97.1	37.5	69.4	774
Rural	97.5	21.4	48.7	2,421
Region				
Western	98.9	25.5	42.0	413
Central	95.8	25.9	60.9	379
Greater Accra	96.5	41.2	69.5	329
Volta	98.2	21.9	58.0	338
Eastern	95.7	22.5	56.8	430
Ashanti	98.2	31.6	60.6	514
Brong Ahafo	97.8	12.9	45.1	260
Northern	97.2	30.1	53.7	232
Upper West	98.6	19.1	31.5	100
Upper East	99.0	6.9	29.4	199
Mother's education				
No education	98.0	23.9	46.9	1,228
Primary	96.9	23.5	52.6	649
Middle/JSS	97.1	25.4	59.5	1,128
Secondary+	97.7	39.3	66.3	189
Assistance at delivery				
Medically trained personnel[2]	97.2	33.1	64.1	1,415
Trained TBA	97.0	19.4	48.0	773
Other or none	98.0	18.8	43.5	1,006
Place of delivery				
Health facility	97.2	32.9	63.8	1,387
At home	97.7	19.5	46.1	1,778
Total	97.4	25.3	53.7	3,194

Note: Percentages are based on all children born in the three years preceding the survey, whether living or dead at the time of interview. Total includes 15 children delivered outside a health facility or home, and 14 children with missing information on place of delivery.
TBA = Traditional birth attendant
[1] Includes children who started breastfeeding within one hour of birth
[2] Doctors and nurse/midwives

Breastfeeding Status by Child's Age

In the 1998 GDHS, children who received only breast milk in the 24 hours before the survey are defined as being *exclusively breastfed*, and children who are *fully breastfed* received plain water in addition to breast milk. Exclusive breastfeeding is recommended for the first 4-6 months of a child's life because breast milk is uncontaminated and contains all the nutrients needed by children in the first few months of life. In addition, it provides some immunity to diseases through the mother's antibodies. Early supplementation, especially under unhygienic conditions, can result in infection and lower immunity to disease.

The 1998 GDHS asked mothers about the current breastfeeding status of all children under five years of age and, if the child was being breastfed, whether other liquid or complementary solid foods were given to the child during the 24 hours prior to the survey. Table 9.2 shows the distribution of living children in the three years before the survey by breastfeeding status. Only two in five children less than two months of age are exclusively breastfed, 36 percent are fully breastfed, 8 percent receive breast milk and other water based liquids like juice, and another 12 percent receive breast milk and complementary foods. Only one in five children continues to be exclusively breastfed by the time they are 4 -5 months old. Full breastfeeding increases to 24 percent for children age 4-5 months and 38 percent of these children receive complementary foods. The proportion of children exclusively breastfed declines sharply for children 6 months and older when solid and mushy food become an important part of their diet. By 6-7 months of age, 70 percent of children are given breast milk and complementary foods other than plain water. This rises to a high of 89 percent by 12-15 months of age.

Table 9.2 Breastfeeding status by child's age

Percent distribution of living children by breastfeeding status, according to child's age in months, Ghana 1998

Age in months	Not breast-feeding	Exclusively breastfed	Breastfeeding and: Plain water only	Water-based liquids	Complementary foods	Total	Using a bottle with a nipple	Number of living children
< 2	1.5	42.7	35.6	8.1	12.1	100.0	17.4	76
2-3	1.2	31.1	39.2	11.1	17.4	100.0	24.3	122
4-5	1.6	21.8	24.4	14.0	38.1	100.0	26.4	97
6-7	3.6	6.4	9.5	10.7	69.8	100.0	20.2	131
8-9	4.8	2.6	14.1	9.3	69.3	100.0	26.0	109
10-11	3.8	0.0	5.8	17.2	73.2	100.0	14.8	75
12-13	3.6	0.0	4.6	2.5	89.4	100.0	16.7	117
14-15	2.4	0.0	6.2	2.8	88.7	100.0	12.8	101
16-17	13.4	1.1	2.6	0.3	82.6	100.0	13.2	107
18-19	26.3	0.0	0.4	2.2	71.1	100.0	17.7	122
20-21	34.9	0.0	0.4	0.7	64.0	100.0	8.4	98
22-23	51.7	0.0	0.0	1.1	47.2	100.0	13.8	99
24-25	79.0	0.0	0.0	0.0	21.0	100.0	13.6	92
26-27	86.0	0.0	0.0	0.0	14.0	100.0	11.2	99
28-29	92.6	0.0	0.0	0.5	6.9	100.0	10.3	102
30-31	85.9	0.0	0.0	0.0	14.1	100.0	5.8	88
32-33	89.1	0.0	0.0	0.0	10.9	100.0	6.5	82
34-35	91.1	0.0	0.0	0.0	8.9	100.0	5.5	86
0-3 months	1.3	35.6	37.8	9.9	15.4	100.0	21.6	199
4-6 months	3.1	17.0	19.0	14.5	46.4	100.0	22.1	163
7-9 months	3.7	2.7	11.9	8.1	73.6	100.0	25.5	174
Total	36.6	5.6	7.9	4.4	45.5	100.0	15.1	1,843

Note: Breastfeeding status refers to 24 hours preceding the survey. Children classified as *breastfeeding and plain water only* receive no other complementary foods or liquids.

The extent to which Ghanaian children are bottle-fed is also shown in Table 9.2. Bottle-feeding is discouraged among very young children because of its potential negative effects on a child's health. It is often associated with increased risk of illness, especially diarrhoeal disease, because of the difficulty in sterilising the nipples properly. The use of a bottle with a nipple can also reduce the period when the mother is not at risk of conception since bottle feeding is associated with a lessening of the intensity of breastfeeding and a consequent shortening of the period of postpartum amenorrhoea. The use of bottles with nipples is relatively common in Ghana, with 15 percent of children under 36 months using it. Bottle use rises from 17 percent among children age 0-1 month to 26 percent among children age 4-5 months.

Duration and Frequency of Breastfeeding

Table 9.3 presents the duration of breastfeeding by selected background characteristics. The estimates of mean and median duration of breastfeeding are based on current status data, that is, the proportion of children under three years of age who were being breastfed at the time of the survey, as opposed to retrospective data on the length of breastfeeding of older children who are no longer breastfed. The prevalence-incidence mean, which is provided here for possible comparison with other data sources, is obtained by dividing the number of children whose mothers are amenorrhoeic by the average number of births per month.

The median and mean duration of breastfeeding is the same at 22 months. This is almost identical to the median and mean obtained in the 1993 GDHS (GSS and MI, 1994).

There is no sex difference in the duration of breastfeeding. However, rural children are breastfed longer than urban children, as are children born in the Upper West Region, when compared to all other regions. Mothers with some education breastfeed their children for shorter durations than mothers with little or no education and duration of breastfeeding declines with an increase in mother's level of education. Children delivered by medically trained personnel are breastfed for shorter durations than births attended by traditional birth attendants or births delivered outside a health facility.

Both the length of time spent breastfeeding and the frequency of breastfeeding affect the duration of postpartum amenorrhoea. A large majority of children, that is, 97 percent of children below the age of six months were breastfed 6 or more times in the 24 hours preceding the survey. Breastfeeding is more frequent at night than in the daytime, with the mean number of feeds in the daytime being 4.8 compared with 7.2 at night.

Types of Supplemental Foods

Table 9.4 presents the percentage of children less than 36 months of age by the type of food received in the 24 hours before the interview, according to whether or not the child is still being breastfed. As seen earlier, exclusive breastfeeding is not commonly practised. Even among the youngest children (0-1 month), 57 percent receive other liquids, 8 percent receive infant formula, 5 percent receive other milk, and 3 percent are fed with some form of solid or mushy food. Infant formula is not commonly used, and its use peaks at 18 percent among children 6-7 months old, after which its use drops off sharply. Other liquids, like juices and sugar water, are introduced very early, and this rises rapidly to over three-quarters of children by age 4-5 months. About two out of three infants are fed some type of solid or mushy food by the time they are 6 months of age. However, supplementary feeding with solid/mushy food plateaus at about 6 months of age and does not really rise again till after 12 months. It is discouraging to note that more than one in four children age 10-11 months are not receiving any type of solid or mushy food.

Table 9.3 Median duration and frequency of breastfeeding by background variables

Median duration of any breastfeeding, exclusive breastfeeding, and full breastfeeding among children under three years of age, and the percentage of children under six months of age who were breastfed six or more times in the 24 hours preceding the interview, according to background characteristics, Ghana 1998

Background characteristic	Among children under 3 years of age, median breastfeeding duration in months:			Number of children	Children under six months			Number of children
	Any breast-feeding	Exclusive breast-feeding	Full breast-feeding[1]		Breastfed 6 or more times in preceding 24 hours	Mean number of day feeds	Mean number of night feeds	
Child's sex								
Male	21.5	0.6	3.7	974	96.9	5.3	7.4	142
Female	21.5	0.7	3.6	1,005	97.1	4.4	7.1	153
Residence								
Urban	19.0	2.1	4.3	489	97.7	5.4	7.6	76
Rural	22.1	0.6	3.5	1,490	96.8	4.6	7.1	220
Region								
Western	22.5	0.5	3.0	242	(96.2)	(6.2)	(6.6)	30
Central	20.2	0.6	2.2	235	*	*	*	30
Greater Accra	16.7	0.6	3.1	214	(100.0)	(6.4)	(7.3)	33
Volta	21.9	1.9	4.4	206	(100.0)	(5.2)	(8.2)	35
Eastern	20.9	1.1	2.7	274	(96.5)	(4.1)	(7.4)	35
Ashanti	21.9	0.7	3.2	342	(93.8)	(4.1)	(7.2)	56
Brong Ahafo	23.9	0.6	5.5	158	(100.0)	(4.4)	(7.7)	30
Northern	24.5	1.8	5.1	137	*	*	*	15
Upper West	30.1	0.6	4.7	60	(93.9)	(4.1)	(5.5)	11
Upper East	29.0	0.6	5.6	110	(95.0)	(4.8)	(6.1)	21
Mother's education								
No education	23.4	0.6	4.4	733	97.0	4.8	6.9	116
Primary	21.3	0.6	2.6	418	97.1	5.1	7.1	61
Middle/JSS	20.0	0.7	3.7	708	96.4	4.5	7.6	100
Secondary+	18.7	0.7	4.7	121	*	*	*	18
Assistance at delivery								
Medically trained personnel[2]	20.4	1.4	4.0	888	96.7	5.0	7.8	136
Traditional midwife	21.6	0.5	2.9	476	98.5	4.7	6.4	74
Other or none	23.2	0.6	4.0	616	96.2	4.7	7.1	85
Total	21.5	0.7	3.7	1,979	97.0	4.8	7.2	295
Mean	21.5	2.6	5.2	97.4	NA	NA	NA	NA
Prevalence/Incidence mean	21.0	1.9	4.5	NA	NA	NA	NA	NA

Note: Medians and means are based on current status. Percentages in parentheses are based on 25-49 unweighted cases. An asterisk indicates that the data has been suppressed because it is based on less than 25 unweighted cases.
NA = Not applicable
[1] Either exclusively breastfed or received only plain water
[2] Doctor and nurse/midwife

Table 9.4 Types of food received by children in preceding 24 hours

Percentage of children under three years of age who received specific types of food in the 24 hours before the interview, and the percentage using a bottle with a nipple, by breastfeeding status and child's age in months, Ghana 1998

Age (in months)	Liquids			Solid/mushy food					Number of children
	Infant formula	Other milk	Other liquids	Any solid/ mushy food	Grain/ tuber	Eggs/ fish/ poultry	Meat	Other semi-solid	
BREASTFEEDING CHILDREN									
<2	7.7	4.6	56.6	3.2	3.2	0.0	0.0	1.6	75
2-3	6.4	3.8	66.6	13.3	12.3	0.0	1.0	4.2	121
4-5	8.6	6.9	75.2	30.5	25.5	3.0	2.5	9.3	95
6-7	18.4	14.0	92.5	64.0	52.9	18.3	4.7	28.2	126
8-9	12.5	6.6	96.1	66.6	59.5	33.5	10.3	42.0	104
10-11	8.3	11.8	96.8	72.9	62.3	37.5	11.2	42.1	72
12-13	9.7	9.8	96.7	91.6	80.4	61.6	30.4	61.5	113
14-15	9.3	8.9	100.0	90.8	73.3	51.5	28.7	64.4	99
16-17	10.9	10.3	96.2	95.0	83.8	62.4	28.8	71.0	92
18-23	6.9	9.1	98.2	96.1	84.4	64.8	28.9	72.6	201
24-29	1.6	5.3	94.9	98.7	86.7	47.4	36.1	68.8	41
30-35	(3.9)	(5.4)	(100.0)	(100.0)	(89.3)	(62.7)	(30.9)	(78.9)	30
0-3 months	6.9	4.2	62.8	9.4	8.8	0.0	0.6	3.2	196
4-6 months	8.8	9.3	80.9	41.5	33.2	7.1	3.0	16.4	158
7-9 months	18.3	9.8	95.8	67.7	59.9	29.6	8.6	37.2	168
0-5 months	7.4	5.1	66.9	16.3	14.3	1.0	1.2	5.2	291
6-8 months	16.5	12.4	93.1	64.8	55.3	22.1	5.1	30.9	180
6-11 months	14.0	10.9	94.7	67.0	57.4	28.1	8.2	36.3	302
Total	9.4	8.5	89.3	68.0	58.8	37.2	17.1	44.6	1,169
NON-BREASTFEEDING CHILDREN									
18-23 months	14.1	26.0	98.1	97.5	81.6	79.3	40.1	75.7	117
24-29 months	9.6	12.4	97.2	98.2	90.1	75.4	43.2	77.2	252
30-35 months	6.6	8.7	95.7	96.4	91.4	76.1	41.8	72.5	266
Total	9.4	13.1	96.5	96.1	87.6	75.3	40.8	74.1	674[a]

Note: Figures in parentheses are based on 25-49 unweighted cases.
[a] Includes 37 children under 18 months of age

Eggs, fish, poultry and meat are high in protein and other nutrients essential for the physical and mental development of the child. The percentage of children receiving eggs, fish, and poultry rises from 3 percent at age 4-5 months to 65 percent at age 18-23 months. The intake of meat is not as common, probably because of its high costs. Its intake increases from 1 percent at age 2-3 months to 36 percent at age 24-29 months.

Starchy food, which includes rice, corn, cassava, and plantain, are also introduced at very early ages. Its intake rises sharply from 3 percent at age 0-1 month to 53 percent at age 6-7 months and 87 percent at age 24-29 months.

9.2 Nutritional Status of Children

Anthropometric measurements provide one of the most important indicators of children's nutritional status. A measuring board (Shorr Board) was used to measure the height of children; children under two years were measured lying down (supine) while those over two years were measured standing up. The weight

of children was obtained using an electronic scale. Combining the height, weight and age data, three indices of physical growth describing children's nutritional status were constructed: height-for-age, weight-for-age, and weight-for-height.

The three indices provide indications of children's susceptibility to diseases and their chances of survival and are expressed as standardised (z-score) deviation units from the median of a reference population recommended by the World Health Organisation (WHO). The use of a reference population is based on the finding that well-nourished children in all population groups for which data exist follow similar growth patterns before puberty and, thus, exhibit similar distributions with respect to height and weight at given ages (Martorell and Habicht, 1986). One of the most commonly used reference populations is the international reference population defined by the United States National Center for Health Statistics (NCHS) and accepted by WHO and the United States Centers for Disease Control. The reference population serves as a point of comparison, facilitating the examination of differences in the anthropometric status of sub-groups in a population and changes in nutritional status over time. Children who fall below two standard deviations from the reference median are regarded as malnourished, whereas children who fall three standard deviations below the reference median are regarded as severely malnourished. Each of the three indices measures somewhat different aspects of nutritional status.

The height-for-age index provides an indicator of linear growth retardation. Children whose height-for-age is below minus two standard deviations (-2 SD) from the median of the reference population are considered short for their age, or *stunted*. Children who are below minus three standard deviations (-3 SD) from the reference population median are *severely stunted*. Stunting of a child's growth may be the result of a failure to receive adequate nutrition over a long period of time or of the effects of recurrent or chronic illness. Height-for-age, therefore, represents a measure of the outcome of undernutrition in a population over a long period, and does not vary appreciably with the season of data collection.

The weight-for-height index measures body mass in relation to body length. Children whose weight-for height measures are below minus two standard deviations (-2 SD) from the median of the reference population are too thin for their height, or *wasted,* while those whose measures are below minus three standard deviations (-3 SD) from the reference population median are *severely wasted*. Wasting represents the failure to receive adequate nutrition during the period immediately before the survey. It may be the result of recent episodes of illness or acute food shortage.

Weight-for-age is a composite index of height-for-age and weight-for-height. Children whose weight-for-age measures are below minus two standard deviations (-2 SD) from the median of the reference population are *underweight* for their age while those whose measures are below minus three standard deviations (-3 SD) from the reference population are *severely underweight*. Being underweight for one's age, therefore, could mean that a child is stunted, or wasted, or both stunted and wasted.

Anthropometric Data Collection

All children born in the five years before the survey to women interviewed in the 1998 GDHS were weighed and measured. Height and weight measurements were obtained for 94 percent of the 2,948 children in this group (who were age 0-59 months at the time of the survey). However, three percent of the children weighed and measured were considered to have implausibly high or low values for the height or weight measures, and four percent had incomplete age information. The following analysis focuses on the 2,570 children under age five for whom complete and plausible anthropometric data were collected.

Levels of Child Malnutrition

Table 9.5 shows the proportions of children classified as malnourished according to each of the three measures of nutritional status by selected demographic and socio-economic characteristics.

Table 9.5 Nutritional status of children by demographic and background characteristics

Percentage of children under five years of age who are classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by selected background and demographic characteristics, Ghana 1998

Background characteristic	Height-for-age		Weight-for-height		Weight-for-age		Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage below -3 SD	Percentage below - 2 SD[1]	
Child's age							
< 6 months	0.5	2.9	0.9	3.3	0.1	0.5	259
6-11 months	2.4	8.8	2.4	16.1	4.9	18.7	300
12-23 months	7.5	27.0	2.9	20.1	8.2	38.0	591
24-35 months	8.9	27.5	0.7	7.4	6.1	25.7	488
36-47 months	16.8	37.3	0.7	3.2	4.3	23.2	484
48-59 months	13.8	35.1	0.5	4.0	4.5	26.6	448
Child's sex							
Male	9.5	28.1	1.5	10.4	5.1	25.4	1,262
Female	9.2	23.8	1.3	8.7	5.3	24.3	1,308
Birth order							
1	9.0	23.7	1.4	9.9	5.6	23.2	593
2-3	8.3	24.0	1.3	9.0	4.5	23.0	909
4-5	9.7	27.0	1.5	9.1	3.8	25.2	549
6+	11.1	30.5	1.4	10.5	7.7	29.6	519
Previous birth interval							
First birth	9.1	23.8	1.4	9.7	5.5	22.9	602
< 24 months	14.0	33.3	0.9	9.9	7.0	30.5	246
24-47 months	10.2	29.4	1.6	9.0	5.2	27.3	1,115
48+ months	6.0	18.5	1.2	10.1	4.3	20.0	607
Residence							
Urban	4.8	14.3	0.7	6.5	2.6	15.6	638
Rural	10.8	29.7	1.6	10.5	6.1	27.9	1,932
Region							
Western	8.9	29.4	1.4	9.2	4.4	25.6	335
Central	12.1	26.8	0.4	10.3	6.7	26.3	277
Greater Accra	2.9	11.3	1.3	5.5	1.7	12.2	278
Volta	9.5	25.1	1.2	15.2	4.9	24.7	293
Eastern	6.0	23.6	1.0	8.7	2.4	22.3	360
Ashanti	9.8	27.6	1.9	9.2	5.6	24.7	420
Brong Ahafo	3.4	17.8	1.7	8.1	5.2	24.1	201
Northern	19.0	39.6	2.0	12.7	12.7	38.1	168
Upper West	16.8	34.6	1.5	7.1	9.1	28.4	68
Upper East	16.1	35.9	2.1	8.2	7.0	34.0	171
Mother's education							
No education	13.1	32.1	1.9	11.1	8.1	30.4	958
Primary	8.7	27.5	1.3	9.5	5.2	26.7	513
Middle/JSS	6.7	20.9	1.2	8.4	2.9	20.5	928
Secondary+	4.0	13.0	0.0	6.8	1.7	11.9	171
Total	9.3	25.9	1.4	9.5	5.2	24.9	2,570

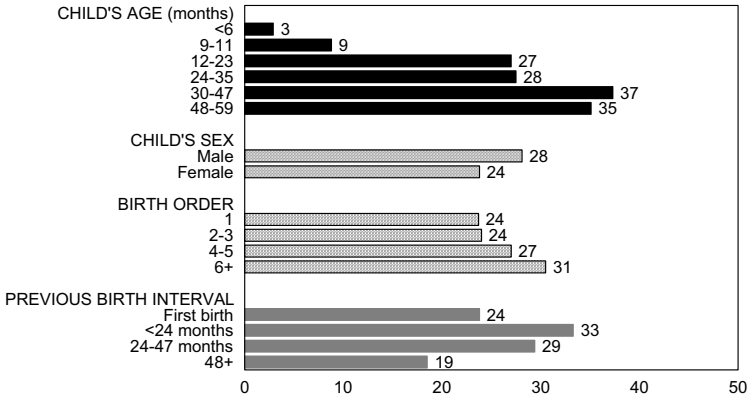
Note: Figures are for children born in the period 0-59 months preceding the survey. Each index is expressed in terms of the number of standard deviation (SD) units from the median of the NCHS/CDC/WHO international reference population. Children are classified as malnourished if their z-scores are below minus two or minus three standard deviations (-2 SD or -3 SD) from the median of the reference population.

[1] Includes children who are below -3 SD

An examination of Table 9.5 on height-for-age suggests that there is considerable chronic malnutrition among Ghanaian children. Overall, 26 percent of children under age five are stunted and nine percent are severely stunted. A child's age is positively associated with the likelihood of stunting (Figure 9.1). Stunting increases sharply from 3 percent among children below 6 months of age to 37 percent among children age 36-47 months. Male children are more likely to be stunted (28 percent) or severely stunted (10 percent) than female children (24 percent and 9 percent, respectively). Stunting is more prevalent among children of higher birth order and children with a short birth interval.

Figure 9.1

Level of Stunting among Children under Age 3 by Demographic Characteristics



Note: Stunting reflects chronic malnutrition, height-for-age z-score below -2SD based on the reference population.

GDHS 1998

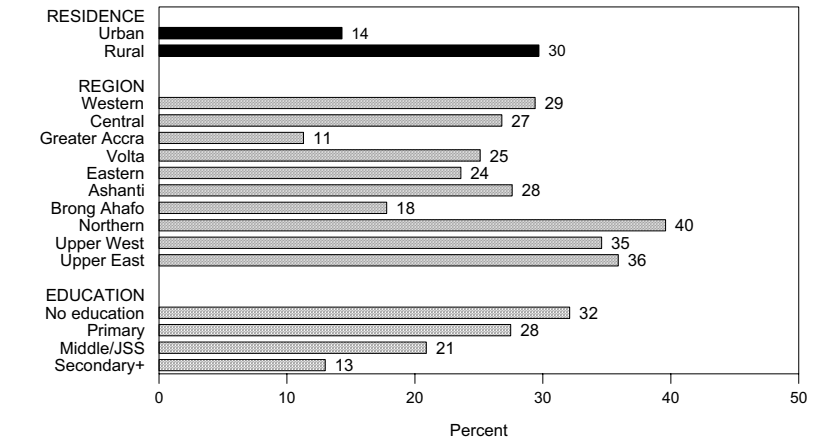
Children in rural areas are twice as likely to be stunted (30 percent) than children in urban areas (14 percent), and children in the Northern, Upper West and Upper East Regions are more likely to be stunted (35-40 percent) than children in the other regions (Figure 9.2). The Greater Accra Region has the lowest level of stunting (11 percent). As expected, stunting decreases directly with mother's level of education and children of mothers with no education are more than two and a half times as likely to be stunted than children of mothers with some secondary education.

The weight-for-height index provides a measure of wasting or acute malnutrition. Overall, 10 percent of children below the age of 5 are wasted and one percent are severely wasted. The level of wasting increases from 3 percent among children less than 6 months of age to 20 percent among children 12-23 months of age. Again male children are slightly more likely than female children to be wasted, as are children of birth order 6 and above. There is little difference in the proportion of children wasted by birth interval.

As Table 9.5 shows, urban children, those living in the Greater Accra and Upper West Regions are less likely to be wasted than other children. It is unclear why children in the Upper West Region are much more likely to be stunted but much less likely to be wasted than other children. Since wasting is much more of a short term acute problem than stunting, seasonality could play a part in explaining this difference in the Upper West Region. The fieldwork was conducted between November and February, when crops are less affected by droughts. The proportion of children wasted varies inversely with mother's education.

Figure 9.2

Level of Stunting among Children under Age 3 by Background Characteristics



Note: Stunting reflects chronic malnutrition; height-for-age z-score below -2SD based on the reference population.

GDHS 1998

Weight-for-age takes into account both chronic and acute undernutrition and is often used to monitor nutritional status on a longitudinal basis. One in four Ghanaian children under five years are underweight and five percent are severely underweight (Table 9.5). Low weight-for-age is more common among children more than six months old, higher order births (6+), and children born after a short birth interval (less than 24 months), but is not strongly associated with child's sex. Differentials in the percentage of children underweight by socio-economic characteristics are somewhat similar to those observed for stunting.

Trends in Child Nutrition

The trend in child nutritional status can be observed by comparing data collected in the 1998 GDHS with data from the 1993 GDHS. There has been some improvement in the nutritional status of Ghanaian children in the last five years. There is no increase in the proportion of children stunted in the last five years. The proportion of children wasted has declined over the last five years from 11 percent in 1993 (GSS and MI, 1994) to 10 percent in 1998. This is an improvement over the five-year period of 1988 (GSS and IRD, 1989) and 1993 when the proportion of children wasted increased from 8 percent to 11 percent. A similar trend is observed in the weight-for age index which rose from 24 percent in 1988 to 27 percent in 1993 and fell to 25 percent in 1998.

9.3 Nutritional Status of Mothers

Mothers of children born during the five-year period before the survey were weighed and measured in the 1998 GDHS. These data can be used to assess the nutritional status of Ghanaian women. However, it is important to note that the analysis is based only on women who had a live birth during the five-year period before the survey and is not representative of the entire sample of women age 15-49 interviewed in the 1998 GDHS. As such, both younger women (who may not yet have given birth) and older women (who would have stopped childbearing more than five years ago) are underrepresented in the group for which information on maternal nutritional status is available.

The basic measures used to assess maternal nutritional status in this report are height and weight of women and body mass index (BMI), which is an indicator that combines height and weight data, and mid-upper arm circumference. Table 9.6 shows the distribution of mothers who had a live birth in the five years preceding the survey, by height, body mass index (BMI), and mid-upper arm circumference, according to selected background characteristics. Anthropometric data were not obtained for a small group of women (2 percent) most of whom were not present at the time the measurer visited. In addition, pregnant women and women who had given birth within three months of the survey interview were excluded from the calculation of weight and body mass measures.

Maternal height is an outcome of nutrition during childhood and adolescence. It is useful in predicting the risks associated with difficult deliveries, since small stature is often associated with small pelvis size. Short women also face increased risk of having low birth weight babies. The height below which a woman is considered to be at nutritional risk is in the range of 140-150 centimetres. The mean height of mothers measured in the 1998 GDHS is 159 centimetres. It is encouraging to note that less than one percent of Ghanaian women are below 145 centimetres.

Table 9.6 Maternal nutritional status by background characteristics

Among women who had a birth in the five years preceding the survey, mean height and percentage of women shorter than 145 centimetres, mean body mass index (BMI) and percentage of women whose BMI is less than 18.5 (kg/m^2), and mean arm circumference and the percentage of women whose arm circumference is less than 23 centimetres, according to selected background characteristics, Ghana 1998

	Height			BMI (kg/m^2)			Arm circumference		
Background characteristic	Mean	Percentage <145 cm	Number of women	Mean	Percentage <18.5	Number of women	Mean	Percentage <23.0	Number of women
Age									
15-19	157.2	2.7	105	20.7	15.8	99	25.5	10.8	105
20-24	158.2	0.9	502	21.6	13.8	419	26.5	4.3	500
25-29	158.6	0.8	587	22.2	8.8	504	27.3	2.3	593
30-34	159.0	0.5	418	22.3	11.5	359	28.0	2.9	416
35-49	159.2	0.3	644	22.4	10.7	565	28.2	2.8	642
Residence									
Urban	159.1	1.0	586	23.8	5.4	521	28.8	1.3	584
Rural	158.6	0.7	1,671	21.5	13.4	1,425	27.0	4.1	1,673
Region									
Western	157.6	1.2	282	21.5	15.8	246	27.2	3.2	284
Central	157.5	0.5	252	22.1	10.0	222	27.6	3.0	248
Greater Accra	159.7	0.5	248	24.6	6.0	214	29.1	1.4	246
Volta	159.5	0.5	254	21.7	9.2	219	27.1	2.8	253
Eastern	158.6	0.0	314	22.2	12.8	261	27.7	2.3	315
Ashanti	157.7	2.2	360	22.3	9.5	321	27.4	5.9	362
Brong Ahafo	159.4	0.0	184	21.8	13.0	150	27.4	3.1	186
Northern	159.0	0.5	147	21.0	12.5	121	26.6	5.0	148
Upper West	160.5	0.5	64	20.9	12.0	58	26.8	1.6	64
Upper East	160.5	0.4	151	20.9	14.8	133	26.3	4.1	151
Mother's education									
No education	158.7	0.7	826	21.3	12.7	714	26.9	3.2	827
Primary	157.9	1.4	460	22.1	11.2	404	27.5	3.6	459
Middle/JSS	158.8	0.6	825	22.5	10.8	697	27.7	3.5	828
Secondary+	160.2	0.0	146	24.4	5.8	130	29.1	3.4	142
Total	158.7	0.7	2,257	22.1	11.3	1,945	27.4	3.4	2,257

Note: The BMI index excludes pregnant women and those who are less than three months postpartum.

Low pre-pregnancy weight is often associated with unfavourable pregnancy outcomes, although maternal height must also be taken into account. The mean weight of mothers, excluding those who were pregnant or who had a birth within three months of the interview, is 56 kilograms (data not shown).

The BMI, which utilises both height and weight and provides a better measure of thinness than weight alone, is defined as weight in kilograms divided by the square of the height in metres. For the BMI, a cut-off of 18.5 has been recommended for indicating chronic energy deficiency among nonpregnant women. The mean BMI for women in Ghana is 22.1 (Table 9.6). One in nine women in Ghana falls below the cut-off, indicating that the level of chronic energy deficiency in Ghana is relatively high.

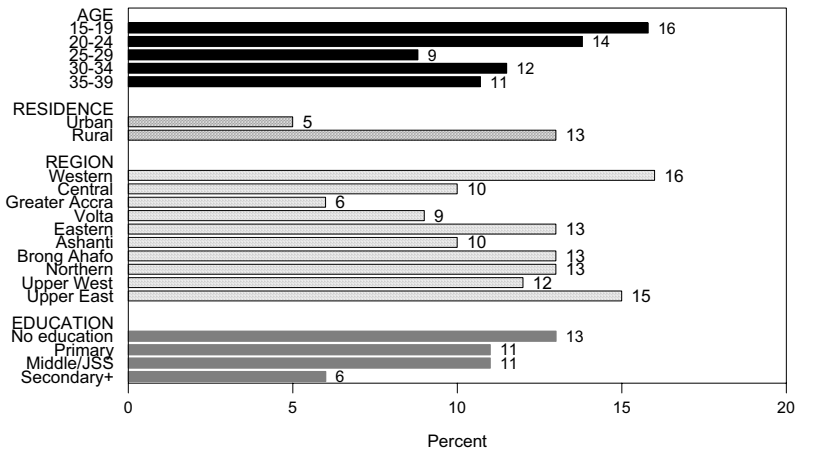
Maternal upper arm circumference is highly correlated with maternal weight-for height. It is used as an index of nutritional status. The mean upper arm circumference for a Ghanaian woman is 27.4 centimetres, and three percent of women had a mid-upper arm circumference of less than 23 centimetres, the recommended cut-off point, suggesting a very low prevalence of chronic malnutrition among the women surveyed.

There are significant differentials in the percentage of mothers malnourished. Women age 15-24 are more likely to fall below the 18.5 BMI measure (Figure 9.3). Rural women are more than twice as likely to fall below the 18.5 cut-off point. Women residing in the Western and Upper East Regions are more likely to be malnourished than women living in the other regions. Education varies inversely with chronic energy deficiency, with mothers having no education more than twice as likely to be malnourished than mothers with secondary education or higher.

There is very little variation by background characteristics in maternal height and mid-upper arm circumference among Ghanaian women. The percentage of women with height below 145 centimetres is highest among women age 15-19, and women living in the Ashanti Region. Women age 15-19, rural women and women residing in the Ashanti Region are more likely to fall below the 23 centimetre cut-off point for arm circumference measurement. There has been virtually no difference in maternal nutritional status in the last five years between the 1993 GDHS and the 1998 GDHS.

Figure 9.3

Percentage of Mothers with a Low Body Mass Index (BMI) by Background Characteristics



Note: Low BMI is defined as <18.5 (kg/m^2).

GDHS 1998

CHAPTER 10

KNOWLEDGE OF AIDS AND OTHER SEXUALLY TRANSMITTED DISEASES

Acquired Immune Deficiency Syndrome (AIDS) was first recognised internationally in 1981. Today it is a serious problem in much of the world, with countries in sub-Saharan Africa, and especially those located in the east, central, and southern parts of the continent, most affected. The growing AIDS epidemic threatens to halt social and economic gains in many countries, especially in Africa. It is estimated that two in every three persons in the world living with AIDS or HIV, the human immunodeficiency virus that causes AIDS, are in sub-Saharan Africa (Family Health International et al., 1997). In Ghana, as in the rest of Africa, sexual (especially heterosexual) contact and mother-to-child transmission are the two most common ways HIV/AIDS infections are spread (Family Health International et al., 1997).

HIV was first identified in Ghana in March 1986. Since then the epidemic has spread slowly but steadily. According to the sentinel surveillance system, monitored by the Ministry of Health, currently about 5 percent of the population in the 15-49 age group is estimated to be infected with HIV/AIDS (Ministry of Health, 1999). The Ministry of Health through its National AIDS/STD Control Program has spearheaded various strategies to contain and limit the spread of HIV infection. These strategies include maintaining a safe blood supply, ensuring safe use of needles, and disseminating information through public campaigns to change social attitudes and behaviour. Questions in the 1998 GDHS provide a unique opportunity to determine the level of individual awareness. Specifically, both male and female respondents were asked a series of questions to determine the level of awareness of HIV infection and its source, perceived risk, knowledge of preventive measures, and general attitudes toward those with HIV/AIDS. Information was also obtained on condom use because of its relevance to planning of health education programmes and the crucial role condoms play in HIV/AIDS and Sexually Transmitted Disease (STD) prevention.

10.1 AIDS Awareness

Respondents in the 1998 GDHS were asked if they had ever heard about AIDS. Tables 10.1 and 10.2 show the percentage of female and male respondents who have heard of AIDS, according to the source of information. Most women (97 percent) and men (99 percent) have heard of AIDS. In general, there is little difference, by background characteristics, in the awareness of AIDS. However, residents of the three northern regions are less likely to have heard of AIDS than residents of the other regions.

The radio is the most important source of information on AIDS among both women and men, 76 percent and 84 percent respectively. About one in two women and men have heard about AIDS at their workplace, while 45 percent of women and 53 percent of men mentioned the television as a source. Twenty-four percent of women and 18 percent of men also stated that the church or mosque is an important source of information on AIDS. Newspapers are a more important source for men (21 percent) than for women (8 percent). Friends and relatives, and community meetings are of lesser importance.

Older respondents are more likely to cite friends and relatives and religious establishments, as sources of information on AIDS, than are younger respondents. Married (whether currently or formerly) respondents more often cite religious establishments, and friends and relatives, as their source of information on AIDS, in contrast to respondents who have never been married who are more likely to cite community meetings. Urban women and men are about twice as likely to have heard of AIDS on television than rural women. On the other hand, the workplace and religious establishments are much more important sources

Table 10.1 Knowledge of AIDS and sources of AIDS information: women

Percentage of women who have ever heard of AIDS, percentage who received information about AIDS from specific sources, by background characteristics, Ghana 1998

Background characteristic	Ever heard of AIDS	Source of AIDS information among those who have heard of AIDS											Number of women
		Radio	TV	News-paper	Pamph-let	Health worker	Church/ mosque	School	Com-munity meeting	Friend/ rela-tive	Work place	Other source	
Age													
15-19	96.5	66.2	49.2	8.0	4.7	2.3	12.0	8.3	25.6	7.3	51.5	0.2	910
20-24	97.5	78.8	50.2	9.0	5.1	3.8	23.1	8.0	6.4	9.2	53.3	0.1	900
25-29	96.9	78.3	45.9	6.7	3.2	3.0	25.0	7.2	2.4	8.5	53.6	0.9	867
30-39	96.8	78.6	43.7	7.1	3.4	2.5	29.3	8.2	1.4	10.9	53.7	0.7	1,278
40-49	95.8	76.4	34.9	7.8	4.2	3.5	26.0	8.0	1.2	14.7	53.2	0.5	888
Marital status													
Currently married	96.3	77.2	41.0	6.2	3.2	3.0	27.6	7.6	2.1	11.2	54.0	0.6	3,131
Formerly married	98.4	80.7	45.7	8.1	4.2	2.6	24.2	9.8	2.7	13.0	56.9	0.6	565
Never married	96.8	69.8	54.5	11.7	6.4	3.1	12.1	7.8	22.4	5.9	48.7	0.2	1,147
Residence													
Urban	99.3	85.2	69.9	15.0	7.2	2.4	18.3	8.3	9.4	5.5	43.2	0.3	1,739
Rural	95.2	70.5	30.1	3.4	2.3	3.3	26.6	7.8	5.6	12.9	58.9	0.6	3,104
Region													
Western	99.6	75.0	37.5	4.4	1.2	2.9	25.9	10.1	7.7	13.2	63.8	0.6	593
Central	97.8	71.6	40.3	3.9	3.9	2.3	24.7	12.1	4.8	7.3	62.7	0.0	552
Greater Accra	99.3	87.0	79.4	20.9	9.0	2.3	12.7	4.4	9.6	1.9	33.7	0.4	808
Volta	96.7	62.5	24.2	5.9	3.6	2.2	26.5	3.9	11.7	12.1	65.8	1.1	535
Eastern	99.6	82.3	50.7	6.6	3.7	0.5	24.6	6.5	5.3	9.5	44.1	0.5	628
Ashanti	99.4	87.7	48.7	4.9	4.7	2.4	30.6	16.1	6.6	14.8	51.6	0.2	728
Brong Ahafo	99.7	76.7	37.3	3.3	1.0	1.6	31.2	3.2	2.9	21.9	44.8	0.0	358
Northern	73.5	56.7	19.3	4.1	2.2	0.0	11.5	0.4	1.9	10.4	52.8	1.6	234
Upper West	84.8	34.5	17.7	2.3	2.6	4.4	27.9	12.5	3.4	6.8	61.1	0.7	120
Upper East	88.3	57.8	16.3	6.6	1.9	18.6	16.4	3.9	8.4	4.5	78.5	1.0	288
Mother's education													
No education	89.8	59.6	20.8	0.4	0.3	4.2	19.1	5.4	0.7	12.6	63.0	0.8	1,410
Primary	99.3	74.3	38.6	1.1	1.2	2.1	22.6	5.4	2.8	11.1	60.5	0.5	874
Middle/JSS	99.5	82.7	53.0	7.0	4.0	2.2	26.9	9.4	9.4	9.4	48.2	0.3	2,056
Secondary+	100.0	91.6	81.9	40.3	18.9	4.0	22.6	12.7	20.5	5.6	35.3	0.3	502
Total	96.7	75.9	44.8	7.7	4.1	2.9	23.5	8.0	7.0	10.2	53.1	0.5	4,843

Table 10.2 Knowledge of AIDS and sources of AIDS information: men

Percentage of men who have ever heard of AIDS, percentage who received information about AIDS from specific sources, by background characteristics, Ghana 1998

Background characteristic	Ever heard of AIDS	Source of AIDS information among those who have heard of AIDS											Number of men
		Radio	TV	News-paper	Pamph-let	Health worker	Church/ mosque	School	Com-munity meeting	Friend/ rela-tive	Work place	Other source	
Age													
15-19	97.2	68.3	46.3	12.5	5.9	2.6	10.7	5.5	29.3	5.1	50.4	0.0	330
20-24	99.7	88.8	60.9	16.2	7.5	4.0	16.0	6.4	16.8	5.6	48.7	0.0	245
25-29	99.8	92.9	68.1	25.5	10.3	4.2	16.3	10.5	5.6	5.9	45.6	0.5	217
30-39	98.9	87.1	52.8	21.3	8.5	3.2	23.0	9.6	2.0	14.6	49.4	0.0	368
40-49	99.5	87.6	45.8	27.3	6.8	3.3	22.9	6.7	1.3	17.4	51.7	0.7	224
50-64	100.0	79.3	44.9	25.7	11.7	3.0	17.5	8.7	4.3	17.9	51.9	0.7	164
Marital status													
Currently married	99.4	87.9	52.0	23.0	8.7	3.7	20.9	8.6	2.8	14.1	51.1	0.3	816
Formerly married	100.0	79.0	50.7	23.6	8.2	3.5	24.9	13.9	2.2	12.0	61.0	1.2	97
Never married	98.2	78.4	54.7	17.0	7.4	2.8	12.5	5.9	22.4	6.0	45.8	0.0	633
Residence													
Urban	100.0	89.3	75.3	33.9	13.5	2.7	11.2	8.5	13.5	8.0	39.7	0.2	547
Rural	98.4	80.3	40.7	13.1	5.2	3.7	21.4	7.4	9.2	12.2	55.1	0.3	999
Region													
Western	100.0	84.8	48.7	16.3	4.5	6.1	29.5	9.1	9.6	12.7	68.5	0.5	222
Central	99.1	75.4	54.2	14.6	8.2	4.6	26.5	8.2	13.5	9.4	59.6	0.0	137
Greater Accra	100.0	89.7	83.4	43.5	16.2	2.2	8.1	6.3	12.6	3.6	30.9	0.4	270
Volta	99.4	73.6	33.1	20.6	7.2	0.6	18.3	3.1	20.6	12.2	52.3	0.0	190
Eastern	99.4	93.9	60.5	19.0	8.5	1.7	12.7	11.6	7.4	8.5	41.4	0.0	195
Ashanti	99.5	92.6	63.0	16.7	9.0	1.7	24.6	15.9	9.2	16.4	45.3	0.5	205
Brong Ahafo	99.0	88.5	48.1	9.6	1.0	1.0	14.4	3.8	2.9	21.1	34.6	0.0	122
Northern	95.2	70.1	25.6	6.3	4.0	1.6	5.8	0.8	3.3	9.9	51.4	0.0	80
Upper West	95.5	48.8	15.4	13.4	9.0	0.9	28.5	7.5	6.5	8.3	65.3	0.9	39
Upper East	95.2	69.2	16.4	12.6	4.4	17.6	8.2	3.1	12.6	5.0	79.9	0.0	87
Mother's education													
No education	95.0	65.7	14.9	1.0	1.6	5.1	11.7	4.8	0.3	18.4	63.3	0.5	254
Primary	98.7	75.5	40.7	1.3	2.4	1.8	13.3	6.8	6.1	10.3	58.3	0.0	190
Middle/JSS	99.9	87.3	57.2	18.2	6.9	3.4	20.8	8.7	10.0	9.3	49.1	0.2	793
Secondary+	100.0	92.5	79.6	53.6	20.0	2.8	17.4	8.5	23.7	8.5	34.8	0.4	309
Total	99.0	83.5	53.0	20.6	8.1	3.3	17.8	7.8	10.7	10.7	49.6	0.2	1,546

of information for rural than urban women and men. Newspapers are an important source of information on AIDS for residents of the Greater Accra Region, while health workers are an important source for residents of the Upper East Region. Friends and relatives, and the workplace are important sources of information on AIDS among respondents with little or no education. In contrast, mass media (radio, television, and print media) is much more important in informing highly educated respondents about AIDS.

10.2 Knowledge of HIV/AIDS Prevention

To ascertain the depth of knowledge about AIDS, respondents who have ever heard of AIDS were asked if there is anything a person can do to avoid getting AIDS and if so, what. Tables 10.3 and 10.4 show the percentage of women and men who know of specific ways to avoid contracting AIDS. Fourteen percent of women and 9 percent of men stated that they did not know if AIDS is avoidable. Five percent of women and 3 percent of men report that there is no way to avoid getting AIDS. Respondents living in the Northern Region are more likely to cite this reason than their counter parts in the other regions. Two in three respondents stated that having sex with only one partner is a way of avoiding the disease. Nearly one-third of respondents mentioned that AIDS can be prevented by avoiding injections (that is infected needles). Twice as many men as women mentioned the use of condoms to prevent AIDS (40 percent versus 22 percent). One in five women and one in nine men did not know of any way to avoid contracting AIDS.

Women in the youngest age group (15-19), those who have never married, urban women, women residing in the Western Region, and women with secondary and higher education are more likely to identify abstinence as an option than are other women. A somewhat similar pattern is observed among male respondents. In contrast to female respondents, however, men who are not currently married (including those formerly married), and men residing in the Ashanti Region cite abstinence as a way to avoid AIDS. Generally, respondents who are not currently married, urban residents, those living in the Greater Accra Region, and those with high levels of education mention the use of condoms to keep away AIDS. Respondents in the youngest age group, those who have never married and those with little or no education are somewhat less likely than other respondents to state that having only one sexual partner is a way of avoiding AIDS. Residents in the Upper East Region are more likely to cite avoiding sex with prostitutes as a means to avoid contracting AIDS. Urban residents, those living in the Upper East Region, and highly educated men and women are more likely than others to state that avoiding injections, that is, infected needles, is an important way to avoid AIDS.

10.3 Perception of HIV/AIDS Transmission

Respondents in the 1998 GDHS who have heard of AIDS were also asked a number of questions on their perception of AIDS transmission (Table 10.5 and 10.6). Three-quarters of women and four-fifths of men believe that a healthy person can have the AIDS virus. A very high percentage of women and men (more than 80 percent) also rightly believe that a woman with the AIDS virus can give birth to a child with the AIDS virus, and that the AIDS virus can be passed to the child through breastfeeding. The knowledge of AIDS-related issues is lower among respondents who live in rural areas, those residing in the northern regions, and those who have no education.

Respondents were also asked whether they thought their chances of getting HIV/AIDS were small, moderate, great, or that they have no risk at all. Tables 10.5 and 10.6 show that 54 percent of women and 58 percent of men say that they have no chance of getting HIV/AIDS. There is little difference in respondents' perception by background characteristics. One in five respondents believes that they have a small chance of contracting the disease, and around five percent believe that they have a moderate or great

Table 10.3 Knowledge of ways to avoid HIV/AIDS: women

Percentage of women who have heard about AIDS by knowledge of ways to avoid HIV/AIDS, according to selected background characteristics, Ghana 1998

Background characteristic	Can AIDS be avoided? Ways to avoid AIDS: Don't know	No way to avoid AIDS	Abstain from sex	Use condoms	Have only one sex partner	Avoid sex with prosti-tutes	Avoid sex with homo-sexuals	Avoid trans-fusions	Avoid injec-tions	Avoid kissing	Avoid mosquito bite	Other[1]	Don't know specific ways	Number of women
Age														
15-19	17.6	5.3	14.9	23.1	48.8	7.7	0.9	3.3	31.1	0.6	0.5	4.6	24.1	878
20-24	11.8	5.9	7.3	27.6	62.6	13.8	1.1	3.6	28.7	0.6	0.3	4.4	17.7	877
25-29	11.8	4.8	4.1	23.1	67.3	14.0	1.3	3.0	30.8	1.1	0.2	2.4	16.8	840
30-39	12.7	5.6	4.2	21.1	68.7	13.5	1.1	3.7	31.1	0.5	0.6	2.6	18.7	1,237
40-49	14.9	5.4	4.7	15.9	67.4	12.2	1.6	3.4	30.5	0.0	0.3	3.6	20.7	851
Marital status														
Currently married	13.3	5.6	3.8	19.2	68.6	13.8	1.4	3.4	29.5	0.3	0.4	3.0	19.2	3,017
Formerly married	13.5	4.6	8.7	27.0	62.3	11.8	0.7	2.8	31.7	0.7	0.4	3.3	18.8	555
Never married	14.8	5.2	14.3	27.6	49.6	8.5	0.8	4.1	32.6	1.1	0.4	4.6	20.8	1,111
Residence														
Urban	8.2	4.3	7.8	27.8	67.9	8.5	1.2	5.1	36.3	0.9	0.3	3.0	13.1	1,727
Rural	16.9	6.1	6.3	18.8	60.7	14.6	1.2	2.5	27.1	0.4	0.4	3.6	23.3	2,956
Region														
Western	14.5	5.4	11.6	21.3	64.8	6.0	1.0	3.1	44.5	0.6	0.8	4.8	20.1	591
Central	11.2	6.4	5.9	16.9	60.9	7.8	1.8	4.6	35.7	0.2	0.7	3.2	19.2	540
Greater Accra	6.4	4.9	5.4	31.1	68.0	6.1	1.6	4.5	33.6	1.0	0.3	2.5	11.8	802
Volta	29.0	6.6	4.0	17.6	47.8	7.6	0.5	2.3	17.2	0.7	0.2	5.8	35.8	517
Eastern	10.6	7.3	6.2	25.8	60.9	22.9	1.1	2.4	24.3	0.2	0.2	5.4	18.2	625
Ashanti	5.8	1.9	9.8	20.0	74.1	18.1	1.1	5.2	37.7	0.8	0.6	1.9	7.8	723
Brong Ahafo	12.9	2.0	8.5	26.7	71.5	12.9	1.0	1.3	19.5	0.0	0.0	2.9	14.9	356
Northern	27.3	18.4	4.1	7.1	44.1	7.8	0.4	1.9	4.6	0.4	0.0	1.9	46.1	172
Upper West	42.9	9.8	3.7	7.3	34.6	9.1	0.3	2.0	19.1	0.0	0.0	1.7	53.0	102
Upper East	19.2	2.3	2.5	22.4	70.5	26.8	2.3	3.5	36.3	0.8	0.2	1.0	22.1	254
Mother's education														
No education	25.6	9.9	3.2	10.1	56.3	13.1	0.8	1.1	18.0	0.4	0.3	1.3	35.9	1,266
Primary	14.6	6.2	5.8	16.4	62.9	12.7	1.1	2.8	26.5	0.1	0.3	3.4	21.0	868
Middle/JSS	8.7	3.3	8.5	25.5	65.7	12.4	1.1	3.7	35.0	0.6	0.5	4.1	12.6	2,047
Secondary+	2.6	1.3	11.4	48.7	72.4	9.3	2.9	9.5	50.4	1.8	0.2	6.4	4.0	502
Total	13.7	5.4	6.9	22.1	63.3	12.3	1.2	3.5	30.5	0.6	0.4	3.4	19.5	4,683

[1] Includes 2 women who mentioned seeking protection from a traditional healer.

Table 10.4 Knowledge of ways to avoid HIV/AIDS: men

Percentage of men who have heard about AIDS by knowledge of ways to avoid HIV/AIDS, according to selected background characteristics, Ghana 1998

Background characteristic	Can AIDS be avoided? Ways to avoid AIDS: Don't know	No way to avoid AIDS	Abstain from sex	Use condoms	Have only one sex partner	Avoid sex with prosti-tutes	Avoid sex with homo-sexuals	Avoid trans-fusions	Avoid injec-tions	Avoid kissing	Avoid mosquito bite	Other[1]	Don't know specific ways	Number of men
Age														
15-19	14.3	6.8	13.0	36.7	43.2	14.0	0.5	3.2	26.6	1.1	0.8	2.6	21.0	321
20-24	8.5	1.7	9.0	49.2	57.2	14.5	0.5	5.4	32.0	3.4	0.5	4.0	10.3	244
25-29	4.9	2.0	11.8	49.8	68.0	11.7	1.1	7.0	33.6	0.0	0.5	3.3	6.9	216
30-39	6.0	2.4	6.5	41.2	68.6	18.3	1.5	5.3	28.0	1.2	0.2	2.9	8.4	363
40-49	7.7	2.5	6.4	34.4	70.3	19.5	1.4	4.8	29.0	0.0	1.0	5.6	10.2	222
50-64	10.3	2.1	5.2	26.4	74.4	18.4	1.4	5.6	32.6	1.4	0.0	4.4	12.3	164
Marital status														
Currently married	6.8	1.8	4.9	37.9	71.6	18.6	1.4	5.5	30.5	1.1	0.6	4.1	8.6	812
Formerly married	13.0	1.8	13.2	46.7	64.5	12.0	0.5	3.5	25.8	0.0	0.0	3.6	14.8	97
Never married	10.5	5.0	13.4	42.1	49.7	13.3	0.7	4.7	29.4	1.5	0.4	3.0	15.5	622
Residence														
Urban	5.1	2.6	12.6	45.3	64.2	9.6	0.3	5.2	32.9	1.3	0.0	2.8	7.6	547
Rural	10.7	3.4	6.8	37.3	61.1	19.6	1.5	5.0	28.0	1.1	0.8	4.1	14.1	983
Region														
Western	10.7	4.1	10.7	36.6	64.0	12.7	0.0	7.6	45.7	0.0	0.0	5.1	14.7	222
Central	8.4	4.6	5.6	33.8	64.3	17.4	1.8	4.5	30.4	0.0	1.8	1.8	12.9	136
Greater Accra	4.0	1.8	11.2	51.1	71.3	8.1	0.9	1.8	30.5	4.0	0.4	2.7	5.8	270
Volta	10.9	5.6	3.4	40.8	54.0	10.0	0.0	3.1	19.7	1.2	0.0	8.7	16.5	189
Eastern	8.6	2.4	11.0	40.8	59.5	22.8	1.9	5.0	20.7	0.6	0.0	4.8	11.0	194
Ashanti	4.0	0.6	11.4	38.9	64.8	19.7	2.2	10.2	38.5	1.6	1.6	1.1	4.6	204
Brong Ahafo	6.7	1.9	9.6	45.2	62.5	13.5	1.0	1.9	15.4	0.0	0.0	1.9	8.7	120
Northern	17.6	7.4	8.1	22.8	46.2	21.1	0.0	3.3	9.8	0.8	0.8	1.6	25.0	77
Upper West	26.1	4.7	9.0	20.2	45.4	22.4	0.9	4.5	25.7	0.0	0.0	5.3	30.8	37
Upper East	12.6	1.9	2.5	42.8	65.4	34.0	1.9	8.2	47.8	0.0	0.0	1.3	14.5	82
Mother's education														
No education	19.4	4.6	3.7	21.8	61.3	21.7	0.6	4.4	18.5	0.3	0.3	1.8	24.0	241
Primary	18.3	4.5	6.0	35.3	50.3	13.0	0.6	1.9	21.5	0.6	0.6	2.2	22.8	188
Middle/JSS	6.2	3.1	8.4	42.6	62.7	16.6	1.2	4.1	29.5	1.0	0.6	3.3	9.4	792
Secondary+	0.8	1.1	15.7	51.2	69.0	12.0	1.3	10.1	44.3	2.7	0.4	6.9	1.9	309
Total	8.7	3.1	8.9	40.2	62.2	16.0	1.1	5.1	29.8	1.2	0.5	3.7	11.8	1,530

[1] Includes 2 men who mentioned seeking protection from a traditional healer.

Table 10.5 Knowledge of AIDS-related issues: women

Percentage of women who know about AIDS, by responses to questions on various AIDS-related issues, according to selected background characteristics, Ghana 1998

Background characteristic	A healthy-looking person can have the AIDS virus			HIV/AIDS can be transmitted from mother to child			HIV/AIDS can be transmitted through breastfeeding			Woman's chance of getting AIDS					Number of women
	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	No risk at all	Small	Moderate	Great	Don't know	
Age															
15-19	67.1	15.7	17.3	77.1	9.9	13.0	73.4	10.0	16.6	60.2	18.3	2.5	3.5	15.5	878
20-24	79.4	8.4	12.1	85.1	6.0	8.8	81.5	7.8	10.4	51.1	23.6	4.3	7.0	13.9	877
25-29	74.7	9.2	16.1	85.6	4.4	10.0	84.3	4.1	11.5	49.3	25.8	5.2	6.2	13.5	840
30-39	79.4	6.8	13.9	86.2	3.4	10.3	85.0	4.5	10.5	52.0	22.9	5.3	4.4	15.4	1,237
40-49	72.5	6.7	20.8	81.9	4.4	13.7	80.8	5.0	14.2	55.9	20.7	4.3	5.8	13.1	851
Marital status															
Currently married	75.7	8.5	15.8	84.2	4.6	11.2	82.9	5.6	11.4	51.7	23.0	5.2	5.6	14.4	3,017
Formerly married	76.3	6.6	17.1	85.3	4.1	10.6	85.7	3.2	11.1	52.7	23.4	4.1	4.3	15.6	555
Never married	72.4	12.2	15.3	80.4	8.6	11.0	74.7	9.2	16.0	59.1	19.7	2.5	4.9	13.6	1,111
Residence															
Urban	83.9	6.3	9.8	90.0	4.2	5.8	83.2	6.7	10.1	52.8	29.1	4.7	4.8	8.6	1,727
Rural	69.8	10.8	19.4	79.6	6.2	14.2	80.2	5.9	13.9	54.0	18.3	4.3	5.6	17.8	2,956
Region															
Western	72.9	8.5	18.6	79.3	7.0	13.7	78.5	6.8	14.7	60.9	16.4	2.5	1.5	18.6	591
Central	75.3	10.1	14.6	78.5	10.1	11.4	79.4	8.9	11.4	66.4	14.6	3.4	6.6	8.9	540
Greater Accra	84.4	7.0	8.6	91.3	3.6	5.1	81.4	7.1	11.5	51.4	32.9	2.6	4.1	9.0	802
Volta	65.5	11.4	23.1	85.6	4.0	10.4	86.3	4.4	9.3	56.8	12.5	7.3	6.5	16.9	517
Eastern	72.8	13.1	14.1	86.9	6.4	6.8	87.7	6.3	6.0	53.7	28.5	3.6	4.8	9.2	625
Ashanti	88.0	3.8	8.1	88.8	3.4	7.8	86.6	4.2	9.1	52.1	27.6	6.8	4.8	8.6	723
Brong Ahafo	78.7	7.1	14.2	83.5	4.2	12.3	84.8	4.5	10.7	51.9	20.2	4.3	1.3	22.4	356
Northern	40.4	21.9	37.3	61.9	9.6	28.1	67.4	9.2	23.4	47.6	15.1	0.4	15.3	21.6	172
Upper West	47.4	19.2	33.4	72.7	6.7	20.6	66.3	9.4	23.9	43.5	19.1	4.7	9.0	23.7	102
Upper East	66.0	7.0	27.0	68.9	3.3	27.6	61.1	3.5	35.0	24.4	16.8	8.6	12.9	37.1	254
Mother's education															
No education	58.2	12.1	29.6	70.2	7.9	21.8	71.8	7.1	21.1	50.2	17.5	3.9	5.4	23.0	1,266
Primary	73.9	8.6	17.5	80.4	6.4	13.2	81.6	5.8	12.5	52.4	21.8	3.2	6.2	16.4	868
Middle/JSS	81.4	8.8	9.8	89.8	4.2	6.0	87.0	5.4	7.6	57.7	23.2	4.8	4.2	10.2	2,047
Secondary+	93.2	4.1	2.7	95.9	2.8	1.3	81.6	7.7	10.7	47.8	31.3	6.2	8.3	6.4	502
Total	75.0	9.2	15.8	83.4	5.5	11.1	81.3	6.2	12.5	53.6	22.3	4.4	5.3	14.4	4,683

Note: Total includes 8 women with missing information on various AIDS-related questions, and 2 women with missing information on their chances of getting AIDS.

Table 10.6 Knowledge of AIDS-related issues: men

Percentage of men who know about AIDS, by responses to questions on various AIDS-related issues, according to selected background characteristics, Ghana 1998

Background characteristic	A healthy-looking person can have the AIDS virus			HIV/AIDS can be transmitted from mother to child			HIV/AIDS can be transmitted through breastfeeding			Man's chance of getting AIDS					Number of men
	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	No risk at all	Small	Moderate	Great	Don't know	
Age															
15-19	73.1	13.1	13.8	73.0	9.3	17.7	72.2	10.7	17.2	66.4	15.8	2.2	2.6	12.7	321
20-24	84.9	8.3	6.8	90.0	4.7	5.3	83.0	8.9	8.1	56.0	21.5	6.4	6.3	9.8	244
25-29	86.0	5.3	8.7	88.5	1.3	10.2	78.3	7.0	14.7	54.0	28.5	4.0	5.4	8.1	216
30-39	85.9	5.5	8.6	89.2	3.7	7.1	81.9	5.2	12.9	55.7	23.9	5.0	7.0	8.1	363
40-49	82.6	5.0	12.4	87.6	3.5	8.9	84.0	6.1	9.8	56.0	25.7	4.5	4.5	9.3	222
50-64	79.5	6.5	13.9	84.5	3.1	12.4	76.0	8.7	15.4	55.5	23.0	2.9	6.1	12.5	164
Marital status															
Currently married	83.3	5.9	10.8	87.4	3.2	9.4	80.9	5.8	13.4	54.4	26.3	3.8	6.4	9.0	812
Formerly married	86.1	6.4	7.5	89.9	3.5	6.5	88.1	4.0	7.9	50.1	26.9	7.7	3.0	12.2	97
Never married	79.6	9.9	10.6	81.3	6.6	12.1	75.6	10.8	13.6	63.4	17.2	4.2	4.2	10.9	622
Residence															
Urban	86.5	6.0	7.4	90.2	3.2	6.6	78.8	10.2	10.9	53.9	28.1	4.0	5.2	8.7	547
Rural	79.4	8.4	12.2	82.3	5.4	12.4	79.4	6.3	14.3	60.0	19.6	4.3	5.3	10.7	983
Region															
Western	86.3	3.6	10.2	87.3	2.0	10.7	83.2	3.0	13.7	69.6	15.2	2.5	1.5	11.2	222
Central	83.4	6.4	10.3	80.6	7.2	12.2	78.8	5.6	15.6	66.2	17.0	5.7	3.7	7.5	136
Greater Accra	86.1	7.6	6.3	91.5	4.9	3.6	82.1	12.1	5.8	54.3	32.3	0.9	4.9	7.6	270
Volta	77.1	8.4	14.5	82.9	4.4	12.8	78.2	9.8	12.0	65.1	13.4	4.5	8.7	8.3	189
Eastern	85.1	9.7	5.2	87.6	5.5	6.9	81.5	10.1	8.4	52.9	30.4	4.0	4.2	8.1	194
Ashanti	89.8	1.6	8.6	89.4	2.2	8.5	82.3	3.3	14.4	56.3	26.1	9.0	5.8	2.7	204
Brong Ahafo	80.8	8.7	10.6	87.5	3.8	8.6	83.6	8.7	7.7	59.6	22.1	1.0	0.0	17.3	120
Northern	55.0	22.4	22.6	67.4	9.2	23.4	68.4	9.0	22.6	47.6	13.4	4.0	17.4	16.7	77
Upper West	46.9	20.4	32.7	62.8	11.0	26.2	56.2	10.3	33.5	45.7	23.9	6.4	1.8	22.3	37
Upper East	81.1	6.3	12.6	77.4	4.4	18.2	62.9	5.7	31.5	34.6	23.3	8.8	10.7	22.6	82
Mother's education															
No education	61.2	13.5	25.4	64.7	9.1	26.2	65.4	7.9	26.7	52.0	14.2	3.3	7.7	22.9	241
Primary	66.5	11.0	22.6	76.7	6.0	17.3	78.6	6.4	15.1	52.1	21.6	3.8	6.3	15.9	188
Middle/JSS	87.4	6.5	6.1	89.1	4.1	6.8	84.6	6.0	9.4	61.0	23.6	4.2	3.9	7.1	792
Secondary+	93.5	3.6	2.9	95.9	1.6	2.5	76.6	12.6	10.8	57.4	27.4	5.2	6.4	3.7	309
Total	81.9	7.5	10.5	85.1	4.6	10.3	79.2	7.7	13.1	57.8	22.6	4.2	5.3	10.0	1,530

Note: Total includes 2 men with missing information on their chances of getting AIDS.

chance. Very young respondents, those who have never married, those living in rural areas, and those with at least middle/JSS level of education, are more likely than other respondents to state that they have no risk of getting HIV/AIDS.

Data from the 1998 GDHS on the perceived chances of getting HIV/AIDS from the individual female and male interviews were linked for married couples living in the same household, to see if couples shared a similar perception. Table 10.7 shows that 37 percent of couples shared the view that they had no risk at all, and 13 percent believed that they had a small risk. Nevertheless, there were also seven percent of women who believed they had a small risk, but whose husbands believed that they had no risk at all. On the other hand, 10 percent of men, whose wives believed that they had no risk, believed that they had a small risk.

Table 10.7 Perception of the risk of getting AIDS among couples

Percent distribution of couples who know about AIDS by husband's and wife's perceptions of the risk of getting AIDS, Ghana 1998

Perception of risk of AIDS	Chances of getting AIDS: husband					Percentage of couples with both husband and wife knowing about AIDS	Number of couples
	No risk at all	Small	Moderate	Great	Don't know		
Chances of getting AIDS: wife							
No risk at all	37.0	9.6	1.8	2.0	3.5	54.0	296
Small	7.3	12.7	0.8	1.3	1.1	23.3	128
Moderate	1.5	0.3	0.6	0.1	0.5	3.0	17
Great	1.3	0.7	0.7	2.5	0.4	5.5	30
Don't know	5.0	2.6	0.7	1.2	4.6	14.2	78
Total	52.2	25.9	4.5	7.1	10.1	100.0	-
Number of couple	286.0	142.0	25.0	39.0	55.0	-	548

Note: Total includes 1 couple with missing data.

10.4 HIV/AIDS Prevention Behaviour

To assess if the high level of awareness of HIV/AIDS has been accompanied by a change in behaviour appropriate to reducing the transmission of HIV, respondents with knowledge of AIDS, were asked if they had changed their sexual behaviour. Tables 10.8 and 10.9 show the percentages of women and men by behaviour change according to selected background characteristics. More than one in two respondents stated that they have restricted sex to one partner and 8 percent of women and 14 percent of men stated that they have kept their virginity. More than twice as many men (14 percent) as women (6 percent) stated that they have started using condoms. Twenty-one percent of women and 14 percent of men say that they have not changed their behaviour.

As expected, respondents who believe that they have no risk or have a small risk of contracting HIV/AIDS, are less likely to change their behaviour than those who believe that they have a moderate or great risk of getting HIV/AIDS, or who already have AIDS. In general, older respondents, currently married female respondents and formerly married male respondents, respondents living in urban areas, respondents from the Upper West Region, and those with no education, are more likely not to have changed their sexual behaviour in response to the perceived risk of AIDS than other respondents.

Table 10.8 AIDS prevention behaviour: women

Percentage of women who have heard of AIDS by specific changes in behaviour in order to avoid AIDS, according to background characteristics, Ghana 1998

Chances of getting AIDS and background characteristic	No change in sexual behaviour	Change in sexual behaviour to avoid AIDS						Number of women
		Kept virginity	Stopped sex	Began using condoms	Restricted to one partner	Fewer partners	Other sexual behaviour[1]	
Chances of getting AIDS								
No/small risk	21.0	9.2	4.9	6.7	58.2	2.8	5.3	3,553
Moderate/great/has AIDS	19.1	3.9	2.7	11.0	66.5	7.1	3.7	455
Don't know/missing	24.2	7.7	2.5	2.1	42.1	4.1	1.6	675
Age								
15-19	15.0	37.8	4.5	6.1	29.7	2.8	4.3	878
20-24	18.7	5.3	3.6	10.0	61.7	4.4	4.2	877
25-29	21.4	1.4	4.8	7.3	65.8	3.6	4.5	840
30-39	23.3	0.2	3.3	4.9	65.5	3.2	4.9	1,237
40-49	27.6	0.3	6.0	4.5	57.6	2.9	5.1	851
Marital status								
Currently married	23.6	0.1	0.4	5.9	68.6	3.0	5.1	3,017
Formerly married	19.0	0.4	21.2	8.7	46.7	8.1	3.4	555
Never married	16.4	35.2	6.7	6.7	29.3	2.1	4.0	1,111
Residence								
Urban	23.4	10.5	5.7	7.0	52.9	1.8	4.1	1,727
Rural	20.1	7.2	3.5	6.1	58.9	4.3	4.9	2,956
Region								
Western	31.5	7.2	5.4	9.9	46.2	2.5	3.1	591
Central	13.5	5.0	2.7	14.2	60.4	3.4	7.8	540
Greater Accra	28.4	12.7	4.9	5.7	49.5	0.3	1.9	802
Volta	27.6	11.3	3.6	2.6	50.3	0.2	1.1	517
Eastern	15.3	6.4	1.9	5.8	67.1	6.9	7.1	625
Ashanti	19.8	7.6	6.1	3.3	61.0	3.2	2.4	723
Brong Ahafo	5.2	11.7	9.5	3.2	68.1	1.3	7.8	356
Northern	21.1	6.0	1.5	1.5	54.4	1.9	2.7	172
Upper West	36.4	6.7	2.3	1.0	39.0	2.4	3.3	102
Upper East	14.8	4.7	0.8	12.3	63.7	17.6	14.7	254
Mother's education								
No education	26.2	2.5	3.2	4.2	55.9	4.9	4.3	1,266
Primary	22.6	5.9	4.4	5.5	58.0	3.7	4.3	868
Middle/JSS	17.5	12.0	4.9	6.9	58.0	2.6	5.0	2,047
Secondary+	22.2	13.3	4.7	11.6	51.2	2.1	4.4	502
Total	21.3	8.4	4.3	6.4	56.7	3.4	4.6	4,683

[1] Includes 16 women who stated that they had stopped homosexual contact.

Table 10.9 AIDS prevention behaviour: men

Percentage of men who have heard of AIDS by specific changes in behaviour in order to avoid AIDS, according to background characteristics, Ghana 1998

Chances of getting AIDS and background characteristic	No change in sexual behaviour	Change in sexual behaviour to avoid AIDS: Kept virginity	Stopped sex	Began using condoms	Restricted to one partner	Fewer partners	Avoid sex with prostitute	Other sexual behaviour[1]	Number of men
Chances of getting AIDS									
No/small risk	13.0	14.9	5.5	13.8	55.2	6.4	4.1	2.8	1,231
Moderate/great/ has AIDS	13.1	5.9	4.6	16.1	59.9	17.9	1.6	1.5	145
Don't know/missing	17.9	17.5	3.7	8.7	38.7	6.6	3.6	0.6	154
Age									
15-19	12.1	50.0	4.2	12.3	19.8	2.5	2.2	2.2	321
20-24	13.5	19.0	9.3	21.4	47.8	5.4	2.1	2.6	244
25-29	12.9	4.5	11.2	15.6	54.7	10.7	1.6	3.8	216
30-39	12.9	0.3	3.1	12.7	70.4	8.5	4.7	3.5	363
40-49	13.6	0.5	2.1	11.6	71.9	11.7	6.7	0.8	222
50-59	18.5	0.0	2.4	6.0	68.6	7.9	6.4	0.7	164
Marital status									
Currently married	12.4	0.1	0.9	12.7	75.5	9.6	5.3	2.5	812
Formerly married	16.4	1.2	16.5	14.8	41.4	14.9	3.3	1.2	97
Never married	14.6	34.9	9.2	14.5	27.9	3.6	1.9	2.6	622
Residence									
Urban	14.6	14.6	6.8	13.6	50.8	6.5	1.8	2.3	547
Rural	13.0	14.1	4.4	13.5	55.8	8.0	4.9	2.5	983
Region									
Western	14.7	13.2	8.6	20.8	53.3	5.1	4.1	1.0	222
Central	15.5	10.8	5.7	20.2	50.4	6.6	4.6	1.9	136
Greater Accra	17.0	14.8	4.0	15.2	52.9	3.6	2.2	2.2	270
Volta	16.5	26.4	2.7	6.1	47.7	4.5	0.6	0.0	189
Eastern	9.7	11.8	4.7	10.5	56.3	16.2	5.3	6.6	194
Ashanti	14.1	9.1	6.2	11.5	56.8	6.8	0.0	2.2	204
Brong Ahafo	2.9	15.4	9.6	10.6	60.5	5.8	1.9	5.8	120
Northern	11.6	16.4	3.2	6.7	48.1	5.7	5.9	0.8	77
Upper West	26.1	12.1	5.3	6.5	43.4	4.6	5.6	1.8	37
Upper East	8.2	10.1	0.0	20.8	67.9	21.4	20.1	1.3	82
Mother's education									
No education	17.4	7.8	4.7	8.0	56.4	10.2	8.5	0.8	241
Primary	13.6	15.8	3.8	13.4	45.9	10.3	2.1	1.2	188
Middle/JSS	11.8	17.0	5.3	13.9	54.7	6.6	3.0	2.5	792
Secondary+	15.0	11.6	6.6	17.0	55.3	5.9	3.2	4.2	309
Total	13.5	14.3	5.3	13.5	54.0	7.5	3.8	2.4	1,530

[1] Includes 6 men who stated that they had stopped homosexual contact.

10.5 Treatment of AIDS

Respondents in the 1998 GDHS who knew of HIV/AIDS were also asked for the most important thing they thought the government should do for people who have AIDS. The results are shown in Table 10.10. Forty percent of women and 37 percent of men suggested that the government should provide free medical treatment for persons with the disease. Another 34 percent of women and 40 percent of men believe that the government should quarantine or isolate persons having AIDS. Only 8 percent of women and 6 percent of men thought that the government should help relatives provide care.

Table 10.10 Treatment of AIDS

Women's and men's responses to two questions concerning care for AIDS patients, Ghana 1998

Question/ Response	Percentage	
	Women	Men
What do you suggest is the most important thing the government should do for people who have AIDS?		
Free medical treatment	40.3	36.5
Help relatives provide care	7.5	5.7
Isolate/quarantine	33.8	40.0
Should not be involved	2.5	2.7
Other	9.2	11.2
Don't know	6.8	4.0
Total	100.0	100.0
If your relative is suffering from AIDS, who would you prefer to care for him/her?		
Relatives	51.1	49.6
Friends	0.4	0.4
Government organization	38.8	42.0
Religious organization	0.5	0.3
Nobody/abandon	6.5	5.4
Other	1.5	1.4
Don't know	1.2	1.0
Total	100.0	100.0

In response to the question on who they believed should care for a relative suffering from AIDS, one in two women and men believed that other relatives should care for a person suffering from AIDS. About two in five respondents also believed that government organisations should care for a relative suffering from AIDS. Only a minority of women (7 percent) and men (5 percent) thought that a relative suffering from AIDS should be abandoned.

10.6 Knowledge and Use of Condoms

Since condoms play an important role in preventing the transmission of HIV/AIDS, respondents who knew of the condom were asked where they could be obtained. Tables 10.11 and 10.12 show that a very high percentage (more than 90 percent) of women and men know about the condom. Among respondents who have heard of the condom, 29 percent of women and 19 percent of men did not know of a place where they could get condoms. Older, ever-married, rural, and uneducated respondents were less likely to know a source for condoms, as were residents of the three northern regions. Private sources were much more commonly cited than public sources, by both female and male respondents.

Men (15 percent) are more than twice as likely to have used condom at last sex than women (6 percent). Condom use rises with increasing education among both women and men; urban dwellers are more likely than their rural counterparts to have ever used a condom; and younger respondents (age 15-24) are more likely to have used a condom during last sex. Condom use was also much higher in the Greater Accra Region.

Twice as many men (7 percent) as women (3 percent) used the condom for the prevention of HIV/AIDS transmission than as a method of family planning. Again these respondents tend to be young never married, urban and more educated.

Table 10.11 Knowledge and use of condoms: women

Percentage of women who know about condoms, the percentage who know a source for condoms, and the percentage who have used condoms during last sex, by background characteristics, Ghana 1998

Background characteristic	Know about condoms	Know source for condoms: Public sector	Know source for condoms: Private medical sector	Know source for condoms: Other source	Know source for condoms: Don't know/ missing	Don't know a source	Condom used during last sex	Condom used but not for family planning	Number of women
Age									
15-19	93.4	24.9	67.5	2.6	0.0	28.4	13.5	7.1	341
20-24	92.0	26.1	70.3	1.3	0.0	24.5	8.7	4.6	802
25-29	92.6	29.9	67.1	1.1	0.1	25.0	6.9	3.3	825
30-34	90.8	31.5	65.7	0.7	0.0	26.3	2.6	1.0	632
35-39	92.3	31.0	64.7	1.0	0.0	28.4	4.4	2.2	604
40-44	85.9	26.6	56.2	0.6	0.2	36.6	2.9	1.7	454
45-49	83.2	24.9	47.0	0.9	0.0	44.4	1.8	1.5	397
Marital status									
Currently married	89.3	28.3	62.2	0.8	0.0	30.4	4.0	1.7	3,014
Formerly married	92.7	32.2	65.7	1.0	0.2	28.3	3.9	3.6	555
Never married	95.8	24.0	73.2	3.4	0.0	21.9	19.5	10.4	486
Residence									
Urban	94.9	26.5	78.1	1.1	0.1	17.2	8.8	4.6	1,430
Rural	88.2	29.3	56.3	1.2	0.0	35.5	4.2	2.1	2,626
Region									
Western	94.0	24.7	54.3	2.2	0.0	42.1	5.3	3.3	513
Central	96.6	30.0	67.6	0.8	0.0	27.2	6.0	3.4	473
Greater Accra	96.7	22.3	79.9	1.1	0.0	14.1	8.9	4.2	645
Volta	90.4	31.1	67.2	1.7	0.0	22.8	5.1	2.2	451
Eastern	93.1	31.1	65.0	1.1	0.4	28.9	6.0	1.9	555
Ashanti	92.1	26.7	71.6	0.5	0.0	24.9	5.5	3.1	639
Brong Ahafo	91.8	25.9	65.9	0.7	0.0	27.7	5.3	4.1	308
Northern	63.7	19.7	28.9	0.9	0.0	58.4	1.7	0.9	156
Upper West	61.3	35.1	12.8	2.3	0.0	58.9	3.0	2.3	90
Upper East	70.4	48.8	44.4	0.2	0.0	40.7	4.4	2.5	227
Mother's education									
No education	76.2	22.5	38.8	1.2	0.0	51.9	2.4	1.4	1,210
Primary	92.2	25.2	62.0	1.2	0.0	30.7	3.7	1.9	774
Middle/JSS	97.9	30.7	77.2	1.0	0.1	17.7	7.2	3.6	1,662
Secondary+	99.8	41.4	88.6	1.2	0.0	4.8	14.2	7.3	410
Total	90.5	28.3	64.0	1.1	0.1	29.1	5.8	3.0	4,056

Table 10.12 Knowledge and use of condoms: men

Percentage of men who know about condoms, the percentage who know a source for condoms, and the percentage who have used condoms during last sex, by background characteristics, Ghana 1998

Background characteristic	Know about condoms	Know source for condoms: Public sector	Know source for condoms: Private medical sector	Know source for condoms: Other source	Know source for condoms: Don't know a source	Condom used during last sex	Condom used but not for family planning	Number of men
Age								
15-19	97.1	15.0	85.1	1.9	12.2	26.2	7.0	64
20-24	99.5	25.5	81.3	0.7	11.7	30.6	13.4	165
25-29	97.6	22.3	83.6	0.6	14.7	18.4	12.9	199
30-34	96.6	25.6	79.3	0.6	15.8	12.5	5.2	207
35-39	93.1	32.3	75.4	0.7	19.3	16.2	5.0	153
40-44	96.1	24.3	72.6	2.9	22.6	9.0	5.5	123
45-49	96.3	27.7	66.8	3.1	24.9	10.3	5.5	99
50-54	87.5	24.9	61.5	0.0	30.5	2.7	0.0	87
55-59	85.3	23.8	53.5	3.1	39.7	2.8	1.3	76
Marital status								
Currently married	94.6	27.0	72.8	1.1	21.7	10.0	4.0	811
Formerly married	93.9	27.0	68.7	1.2	22.5	12.4	10.6	97
Never married	97.7	19.0	85.4	1.8	11.5	32.7	15.4	266
Residence								
Urban	98.3	21.5	89.0	2.0	9.2	22.1	12.9	413
Rural	93.6	27.2	67.9	0.9	25.0	11.7	4.0	760
Region								
Western	97.4	22.7	75.3	0.0	21.5	13.6	5.2	173
Central	100.0	38.2	82.1	0.0	14.0	15.7	8.3	98
Greater Accra	97.0	16.7	86.9	4.2	9.5	25.0	14.3	203
Volta	96.3	32.2	79.8	0.0	11.9	18.4	4.8	128
Eastern	96.1	22.8	74.1	1.6	20.4	13.2	5.9	155
Ashanti	98.7	18.0	81.8	1.3	16.2	10.5	6.3	169
Brong Ahafo	97.6	22.9	79.5	1.2	16.9	9.6	4.8	96
Northern	79.8	25.5	36.9	0.0	52.3	11.6	2.3	54
Upper West	78.5	38.7	25.6	2.5	47.9	8.5	6.1	28
Upper East	81.2	45.9	54.2	0.0	37.6	15.8	6.0	69
Mother's education								
No education	79.6	25.8	39.2	0.9	51.6	7.0	3.9	212
Primary	95.0	25.7	64.5	3.5	26.2	12.7	1.4	135
Middle/JSS	99.0	23.9	84.3	0.4	12.3	15.1	7.8	587
Secondary+	100.0	27.4	91.3	2.5	4.9	24.7	11.6	240
Total	95.3	25.2	75.3	1.3	19.4	15.4	7.1	1,173

10.7 Knowledge of other STDs

Respondents in the 1998 GDHS were also asked if they had heard of any other sexually transmitted diseases (STDs) besides AIDS. Gonorrhea is most commonly known with 61 percent of women and 73 percent of men having heard of it (Tables 10.13 and 10.14). Thirteen percent of women and 21 percent of men had heard of syphilis, and a minute percentage of women and men have heard of herpes, hepatitis, or other STDs.

Nearly all women and men who have heard of other STDs can name a source of treatment (data not shown). Most respondents cite the public sector as an important source for treatment, with public hospitals and clinics the most common sources. About one-third of female respondents who have heard of other STDs also mention the private sector as a source of treatment, with hospitals, clinics and pharmacies as important sources within the private sector. Male respondents are slightly more likely to cite a private source than female respondents.

Table 10.13 Knowledge of sexually transmitted diseases: women

Percentage of women by knowledge of various sexually transmitted diseases (STDs), by background characteristics, Ghana 1998

Background characteristic	Heard of: Gonor-rhoea	Syphilis	Herpes	Hepatitis	Other	Number of women
Age						
15-19	40.5	10.6	0.1	0.2	1.3	910
20-24	64.3	12.4	0.5	0.3	1.0	900
25-29	66.8	11.4	0.8	0.3	1.2	867
30-34	67.0	14.2	1.2	0.2	0.9	653
35-39	69.7	14.2	0.8	0.3	1.3	625
40-44	64.4	13.0	0.7	0.8	2.4	473
45-49	62.4	15.6	0.6	0.6	1.9	415
Marital status						
Currently married	64.7	12.0	0.6	0.2	1.2	3,131
Formerly married	67.8	14.1	1.5	0.8	1.4	565
Never married	48.5	13.8	0.4	0.4	1.5	1,147
Residence						
Urban	70.9	16.3	0.7	0.5	2.1	1,739
Rural	55.8	10.7	0.6	0.3	0.9	3,104
Region						
Western	68.2	9.2	2.1	0.4	1.9	593
Central	64.7	11.9	1.6	0.4	1.6	552
Greater Accra	73.1	16.9	0.6	0.4	2.0	808
Volta	50.7	6.6	0.4	0.0	0.7	535
Eastern	62.7	18.6	0.2	0.5	0.4	628
Ashanti	69.8	17.9	0.0	0.2	0.3	728
Brong Ahafo	66.3	14.6	0.0	0.0	0.0	358
Northern	18.7	1.1	0.3	0.0	2.5	234
Upper West	34.2	0.8	0.3	0.3	6.8	120
Upper East	40.7	7.3	0.7	1.3	1.6	288
Mother's education						
No education	41.2	4.8	0.2	0.0	1.2	1,410
Primary	57.6	10.0	0.1	0.4	1.5	874
Middle/JSS	69.0	11.9	0.8	0.1	1.2	2,056
Secondary+	91.4	42.8	2.4	2.1	2.0	502
Total	61.2	12.7	0.7	0.3	1.3	4,843

Table 10.14 Knowledge of sexuallty transmitted diseases: men

Percentage of men by knowledge of various sexually transmitted diseases (STDs), by background characteristics, Ghana 1998

Background characteristic	Heard of: Gonor-rhoea	Syphilis	Herpes	Hepatitis	Other	Number of men
Age						
15-19	45.7	12.4	1.0	0.9	1.7	330
20-24	74.2	19.8	2.8	0.0	0.5	245
25-29	84.9	24.5	2.7	0.0	1.6	217
30-34	80.9	20.1	2.2	0.0	1.6	212
35-39	79.3	24.0	3.1	0.8	1.3	155
40-44	82.0	24.4	1.3	0.0	2.3	124
45-49	80.1	20.6	1.1	0.0	4.6	99
50-54	75.6	31.7	0.0	0.0	1.4	87
55-59	82.6	33.7	3.1	1.6	1.7	76
Marital status						
Currently married	81.4	23.4	2.2	0.4	1.5	816
Formerly married	81.2	25.7	2.4	0.0	1.8	97
Never married	59.9	17.4	1.6	0.3	1.8	633
Residence						
Urban	78.7	27.0	1.7	0.4	1.9	547
Rural	69.2	17.9	2.1	0.3	1.5	999
Region						
Western	79.7	19.3	6.6	0.5	1.5	222
Central	73.7	17.9	1.8	1.8	0.9	137
Greater Accra	81.6	31.0	3.1	0.4	2.2	270
Volta	63.5	14.8	0.6	0.0	0.0	190
Eastern	76.5	29.8	0.0	0.0	0.0	195
Ashanti	75.8	23.4	0.5	0.0	2.2	205
Brong Ahafo	79.0	18.1	1.0	0.0	0.0	122
Northern	36.7	3.8	0.0	0.0	7.9	80
Upper West	49.2	10.4	0.0	0.0	8.7	39
Upper East	62.3	14.4	1.8	0.6	0.6	87
Mother's education						
No education	55.2	4.6	0.9	0.0	3.1	254
Primary	56.9	12.2	1.2	0.0	1.3	190
Middle/JSS	74.6	16.9	2.0	0.3	1.4	793
Secondary+	91.3	51.0	3.2	1.0	1.2	309
Total	72.6	21.1	2.0	0.3	1.6	1,546

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APPENDIX A

SAMPLE DESIGN

A.1 Introduction

The major focus of the 1998 Ghana Demographic and Health Survey (GDHS) was to provide updated estimates of important population and health indicators including fertility and mortality rates for the country as a whole and for urban and rural areas, separately. In addition, the sample was designed to provide estimates of key variables for the ten regions in the country (Western, Central, Greater Accra, Volta, Eastern, Ashanti, Brong Ahafo, Northern, Upper West, and Upper East). The 1998 GDHS interviewed all women age 15-49 in a selected household and all men age 15-59 in every third selected household. The survey, which covered the entire country, sampled most of the population of Ghana, excluding only those persons in non-residential institutions, such as hotels, hospitals, prisons, and similar establishments.

An initial sample size of 4,500 completed female interviews and 1,500 completed male interviews was chosen, taking into consideration budgetary constraints and the needs of data users. This sample size was based on the need to provide estimates of several health indicators including contraceptive rates for the 10 regions. The sample also had to take into consideration a 10 percent overall non-response rate. Furthermore, it was necessary to oversample the sparsely populated Northern, Upper West and Upper East Regions, in order to obtain adequate numbers of households to provide reliable estimates of key demographic and health variables. Based on these considerations, a final targeted sample size of 6,375 households was deemed to yield adequate numbers of completed interviews with eligible women and men. Of these, 6,055 households were occupied at the time of the interview. Interviews were successfully completed for 6,003 households, 4,843 eligible women and 1,546 eligible men.

A.2 Sampling Frame and Selection

The last population census in Ghana was carried out in 1984. In preparation for the proposed Population and Housing Census to be conducted in the year 2000, the Ghana Statistical Service began updating its listing of censal Enumeration Areas (EAs) in 1995. Unfortunately, this list was not completed in time for its use in the 1998 GDHS. As such the list of EAs with population and household information from the 1984 Population Census was used as the sampling frame for the 1998 GDHS. The sample thus reflects the regional and urban-rural composition in 1984, and does not take into account any migration that may have occurred since then. The sample is weighted to adjust for over sampling in the three northern regions (Northern, Upper East, and Upper West), in relation to the other regions.

The 1998 GDHS is based on a two-stage stratified, nationally representative sample of households. At the first stage of sampling, 400 EAs were selected using systematic sampling with probability proportional to size (PPS Method). In each region, the probability of selecting an EA can be summarised as follows:

$$P_{1i} = (a * S_i) / S$$

where P_{1i} is the probability of sampling an EA in the first stage;
a is the allocated number of EAs to be selected in the region;
S_i is the 1984 total number of households in the ith EA;

S is the total number of households in the region, according to the 1984 Population Census.

These EAs were selected from a subsample of 1,000 EAs used in the 1995 Ghana Labour Force Survey. These EAs were made up of 138 urban EAs and 262 rural EAs. A detailed urban-rural breakdown by region is shown in Table A.1.1.

Table A.1.1 Sample allocation

Sample allocation and number of clusters selected by urban-rural, and regional domains, Ghana 1998

Region	Number of EAs		
	Urban	Rural	Total
Western	10	31	41
Central	11	27	38
Greater Accra	47	7	54
Eastern	18	36	54
Volta	6	30	36
Ashanti	22	44	66
Brong Ahafo	10	26	36
Northern	8	19	27
Upper West	3	18	21
Upper East	3	24	27
Total	138	262	400

A complete household listing operation was then carried out in those EAs having less than 500 households. EAs with 500 or more households were segmented into two or three equal parts with a minimum of 200 households, and one segment was selected randomly. The list of households provided a sampling frame for the second stage selection. At the second stage of sampling, a systematic sample of 15 households per EA was selected in all regions, except in the Northern, Upper West and Upper East Regions, where the number per EA was increased to 20. The probability of selecting a household can be summarised as follows:

$P_{2ij} = 20/L_i$ for EAs in the Northern, Upper West and Upper East Regions, and
$P_{2ij} = 15/L_i$ for EAs in all other regions,

where

P_{2ij} is the probability of sampling a household in the second stage; and
L_i is the total number of households in the ith EA.

The final overall household probability is given by the product of the first and second stage probabilities, expressed as:

$f_i = P_{1i} P_{2ij}$

A.3 Response Rates by Region

Tables A.1.2 and A.1.3 provide detailed information on the results of the household and individual interviews, according to region and urban-rural residence. Overall, the household response rates are high by region and urban-rural residence. The Greater Accra Region, which is predominantly urban, experienced the lowest household response rates for both women (98 percent) and men (97 percent).

Response rates are relatively lower at the individual level, with rates being slightly lower for individual men than women. The lowest rates for the individual interviews were observed in the Upper West Region. This is mostly attributed to the extended absence of eligible women and men. The survey was conducted between November and February, a time of the year when farm activity is at a low and seasonal migration in search of temporary employment is common in this region. Individual response rates in the Greater Accra Region and in urban areas are also relatively lower. This could be attributed to the longer hours urbanites spend away from home.

Table A.1.2 Sample implementation: women

Percent distribution of households and eligible women in the 1998 GDHS sample by results of the individual and household interviews, and response rates, according to region and urban-rural residence, Ghana 1998

	Region										Residence		
Result	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong-Ahafo	North-ern	Upper West	Upper East	Urban	Rural	Total
Selected households													
Completed ©	97.4	95.3	94.4	95.0	94.0	95.1	90.0	88.0	94.5	96.9	92.6	95.0	94.2
Household present but no competent respondent at home (HP)	1.5	0.4	1.2	0.6	1.2	0.6	0.4	0.0	0.5	0.0	1.0	0.5	0.7
Refused (R)	0.2	0.0	0.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.1
Dwelling not found (DNF)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Household absent (HA)	1.0	2.3	2.0	3.0	2.1	2.8	4.8	8.5	3.3	2.6	3.2	3.0	3.1
Dwelling vacant/address not a dwelling (DV)	0.0	2.1	1.6	1.3	2.6	1.3	4.1	3.5	1.7	0.6	2.7	1.4	1.8
Dwelling destroyed (DD)	0.0	0.0	0.1	0.2	0.1	0.1	0.6	0.0	0.0	0.0	0.2	0.1	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	615	570	810	540	810	990	540	540	420	540	2,140	4,235	6,375
Household response rate (HRR)[1]	98.4	99.6	98.1	99.4	98.7	99.3	99.4	100.0	99.5	100.0	98.6	99.4	99.1
Eligible women													
Completed (EWC)	98.7	97.2	96.8	98.2	97.9	97.5	98.4	97.0	92.8	99.1	96.9	97.7	97.4
Not at home (EWNH)	1.1	2.0	2.7	1.1	1.2	1.7	1.0	2.7	5.6	0.4	2.3	1.7	1.9
Refused (EWR)	0.0	0.2	0.1	0.0	0.4	0.2	0.0	0.0	0.3	0.0	0.2	0.1	0.1
Partly completed (EWPC))	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.8	0.2	0.2	0.1	0.1
Incapacitated (EWI)	0.2	0.7	0.4	0.7	0.5	0.2	0.3	0.3	0.5	0.4	0.3	0.4	0.4
Other	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	526	460	715	447	562	645	314	366	377	558	1,635	3,335	4,970
Eligible woman response rate (EWRR)[2]	98.7	97.2	96.8	98.2	97.9	97.5	98.4	97.0	92.8	99.1	96.9	97.7	97.4
Overall response rate (ORR)[3]	97.0	96.8	94.9	97.6	96.6	96.8	97.8	97.0	92.4	99.1	95.5	97.1	96.6

Note: The household response rate is calculated for completed households as a proportion of completed, no competent respondent, postponed, refused, and dwelling not found. The eligible woman response rate is calculated for completed interviews as a proportion of completed, not at home, postponed, refused, partially completed, incapacitated and "other." The overall response rate is the product of the household and woman response rates.

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{C}{C + HP + P + R + DNF}$$

[2] Using the number of eligible women falling into specific response categories, the eligible woman response rate (EWRR) is calculated as:

$$\frac{EWC}{EWC + EWNH + EWP + EWR + EWPC + EWI + EWO}$$

[3] The overall response rate (ORR) is calculated as:

$$ORR = HRR * EWRR$$

Table A.1.3 Sample implementation: men

Percent distribution of households and eligible men in the 1998 GDHS sample by results of the individual and household interviews, and response rates, according to region and urban-rural residence, Ghana 1998

	Region										Residence		
Result	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong-Ahafo	North-ern	Upper West	Upper East	Urban	Rural	Total
Selected households													
Completed (EMC)	98.0	94.2	91.8	93.3	94.4	95.4	90.4	86.8	95.9	95.3	91.9	94.5	93.7
Household present but no competent respondent at home (HP)	1.0	0.5	1.5	1.1	1.5	0.6	1.1	0.0	0.7	0.0	1.3	0.6	0.8
Refused (EMR)	0.5	0.0	1.5	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.8	0.0	0.3
Dwelling not found (DNF)	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.1	0.0
Absent	0.5	2.1	4.1	3.3	2.6	3.0	4.5	10.0	2.8	4.2	3.9	3.5	3.6
Dwelling vacant (DV)	0.0	3.2	1.1	1.7	1.5	0.3	2.8	3.2	0.7	0.5	1.8	1.2	1.4
Dwelling destroyed (DD)	0.0	0.0	0.0	0.6	0.0	0.3	0.6	0.0	0.0	0.0	0.3	0.1	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	203	190	268	180	268	329	178	190	145	191	717	1,425	2,142
Household response rate (HRR)[1]	98.5	99.4	96.9	98.8	98.4	99.1	98.2	100.0	99.3	100.0	97.8	99.3	98.8
Eligible men													
Completed (EMC)	99.0	95.7	92.9	98.1	97.1	97.3	99.1	100.0	91.9	98.8	95.2	97.7	96.9
Not at home (EMNH)	1.0	4.3	5.0	1.3	0.6	2.2	0.9	0.0	7.3	0.6	3.3	1.9	2.3
Refused (EMR)	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1
Partly completed (EMPC)	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Incapacitated (EMI)	0.0	0.0	1.3	0.6	0.6	0.5	0.0	0.0	0.8	0.6	1.0	0.3	0.5
Other	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	199	115	240	159	175	183	106	127	123	169	517	1,079	1,596
Eligible man response rate (EMRR)[2]	99.0	95.7	92.9	98.1	97.1	97.3	99.1	100.0	91.9	98.8	95.2	97.7	96.9
Overall response rate (ORR)[3]	97.5	95.1	90.0	97.0	95.6	96.3	97.2	100.0	91.2	98.8	93.0	97.0	95.7

Note: The household response rate is calculated for completed households as a proportion of completed, no competent respondent, postponed, refused, and dwelling not found. The eligible man response rate is calculated for completed interviews as a proportion of completed, not at home, postponed, refused, partially completed, incapacitated and "other." The overall response rate is the product of the household and man response rates.

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{C}{C + HP + P + R + DNF}$$

[2] Using the number of eligible men falling into specific response categories, the eligible woman response rate (EMRR) is calculated as:

$$\frac{EMC}{EMC + EMNH + EMP + EMR + EMPC + EMI + EMO}$$

[3] The overall response rate (ORR) is calculated as:

$$ORR = HRR * EMRR$$

APPENDIX B

ESTIMATES OF SAMPLING ERRORS

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of shortfalls made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the 1998 GDHS to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 1998 GDHS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 1998 GDHS sample is the result of a two-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the 1998 GDHS is the ISSA Sampling Error Module. This module uses the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below with the standard error being the square root of the variance:

$$v(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_h^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_h = y_h - r \cdot x_h \quad , \quad \text{and} \quad z_h = y_h - r \cdot x_h$$

where h represents the stratum which varies from 1 to H,
m_h is the total number of enumeration areas (EAs) selected in the h^{th} stratum,
y_{hi} is the weighted sum of the values of variable y in the i^{th} EA in the h^{th} stratum,
x_{hi} is the weighted sum of the number of cases in the i^{th} EA in the h^{th} stratum, and
f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* clusters in the calculation of the estimates. Pseudo-independent replications are thus created. In the GDHS, there were 400 non-empty clusters. Hence, 400 replications were created. The variance of a rate r is calculated as follows:

$$\mathrm{SE}^2(R) = \mathrm{var}(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_i - r)^2$$

in which

$$r_i = kr - (k-1) r_{(i)}$$

where r is the estimate computed from the full sample of 400 clusters,
$r_{(i)}$ is the estimate computed from the reduced sample of 399 clusters (i^{th} cluster excluded), and
k is the total number of clusters.

In addition to the standard error, ISSA computes the design effect (DEFT) for each estimate, which is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. ISSA also computes the relative error and confidence limits for the estimates.

Sampling errors for the 1998 GDHS are calculated for selected variables considered to be of primary interest. The results are presented in this appendix for the country as a whole, for urban and rural areas, and for each of the ten regions. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1. Tables B.2 to B.20 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits (R±2SE), for each variable. The DEFT is considered undefined when the standard error considering simple random sample is zero (when the estimate is close to 0 or 1). In the case of the total fertility rate, the number of unweighted cases is not relevant since there is no known unweighted value for woman-years of exposure to childbearing.

The confidence interval (e.g., as calculated for *children ever born to women age 15-49*) can be interpreted as follows: the overall average from the national sample is 2.634 and its standard error is .037. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e., 2.634±2×.037. There is a high probability (95 percent) that the *true* average number of children ever born to all women aged 15 to 49 is between 2.559 and 2.709.

Sampling errors are analysed for the national sample and for two separate groups of estimates: (1) means and proportions, and (2) complex demographic rates. The relative standard errors (SE/R) for the means and proportions range between 0 percent and 52.2 percent with an average of 5.9 percent; the highest relative standard errors are for estimates of very low values (e.g., *currently using Norplant* among currently married women is 52.2). If estimates of very low values (less than 20 percent) were removed, than the average drops to 4.9 percent. So in general, the relative standard error for most estimates for the country as a whole is small, except for estimates of very small proportions. The relative standard error for the total fertility rate is small, 2.5 percent. However, for the mortality rates, the average relative standard error is higher, 6.6 percent.

There are differentials in the relative standard error for the estimates of sub-populations. For example, for the variable *with no education*, the relative standard errors as a percent of the estimated mean for the whole country, for the urban areas and for the rural areas are 3.1 percent, 7.4 percent, and 3.4 percent, respectively.

For the total sample, the value of the design effect (DEFT) averaged over all variables is 1.14, which means that due to multi-stage clustering, the sampling error is increased by a factor of 1.14 over that in an equivalent simple random sample.

Table B.1 List of selected variables for sampling errors, Ghana 1998

Variable	Estimate	Base population
	WOMEN	
Urban	Proportion	All women 15-49
No education	Proportion	All women 15-49
With secondary education or higher	Proportion	All women 15-49
Never married	Proportion	All women 15-49
Currently married	Proportion	All women 15-49
Married before age 20	Proportion	All women 15-49
Sex before age 18	Proportion	All women 15-49
Children ever born	Proportion	All women 15-49
Children ever born to women over 40	Proportion	All women 40-49
Children surviving	Proportion	All women 15-49
Knowing any contraceptive method	Proportion	Currently married women 15-49
Knowing any modern contraceptive method	Proportion	Currently married women 15-49
Ever used any contraceptive method	Proportion	Currently married women 15-49
Currently using any method	Proportion	Currently married women 15-49
Currently using a modern method	Proportion	Currently married women 15-49
Currently using pill	Proportion	Currently married women 15-49
Currently using IUD	Proportion	Currently married women 15-49
Currently using injections	Proportion	Currently married women 15-49
Currently using Norplant	Proportion	Currently married women 15-49
Currently using condom	Proportion	Currently married women 15-49
Currently using female sterilisation	Proportion	Currently married women 15-49
Currently using periodic abstinence	Proportion	Currently married women 15-49
Currently using withdrawal	Proportion	Currently married women 15-49
Using public sector source	Proportion	Current users of modern method
Want no more children/sterilised	Proportion	Currently married women 15-49
Want to delay at least 2 years	Proportion	Currently married women 15-49
Ideal number of children	Proportion	All women 15-49
Mothers received tetanus injection	Proportion	Births in last 5 years
Mothers received medical care at birth	Proportion	Births in last 5 years
Had diarrhoea in the last 2 weeks	Proportion	Children under 5
Treated with ORS packets	Proportion	Children under 5 with diarrhoea in last 2 weeks
Sought medical treatment	Proportion	Children under 5 with diarrhoea in last 2 weeks
Having health card, seen	Proportion	Children 12-23 months
Received BCG vaccination	Proportion	Children 12-23 months
Received DPT vaccination (3 doses)	Proportion	Children 12-23 months
Received polio vaccination (3 doses)	Proportion	Children 12-23 months
Received measles vaccination	Proportion	Children 12-23 months
Fully immunised	Proportion	Children 12-23 months
Weight-for-height (below -2 SD)	Proportion	Children 0-47 months
Height-for-age (below -2 SD)	Proportion	Children 0-47 months
Weight-for-age (below -2 SD)	Proportion	Children 0-47 months
Total fertility rate (5 years)	Proportion	Women-years of exposure to child-bearing
Neonatal mortality rate(0-9 years)	Proportion	Number of births
Infant mortality rate (0-9 years)	Proportion	Number of births
Child mortality rate (0-9 years)	Proportion	Number of births
Under-five mortality rate (0-9 years)	Proportion	Number of births
Postneonatal mortality rate (0-9 years)	Proportion	Number of births
	MEN	
Urban	Proportion	All men 15 to 59 years old
No education	Proportion	All men 15 to 59 years old
With secondary education or higher	Proportion	All men 15 to 59 years old
Never married	Proportion	All men 15 to 59 years old
Currently married	Proportion	All men 15 to 59 years old
Knowing any contraceptive method	Proportion	Currently married men 15-59
Knowing any modern contraceptive method	Proportion	Currently married men 15-59
Ever used any contraceptive method	Proportion	Currently married men 15-59
Currently using any method	Proportion	Currently married men 15-59
Currently using a modern method	Proportion	Currently married men 15-59
Currently using pill	Proportion	Currently married men 15-59
Currently using IUD	Proportion	Currently married men 15-59
Currently using injections	Proportion	Currently married men 15-59
Currently using Norplant	Proportion	Currently married men 15-59
Currently using condom	Proportion	Currently married men 15-59
Currently using female sterilisation	Proportion	Currently married men 15-59
Currently using male sterilisation	Proportion	Currently married men 15-59
Currently using periodic abstinence	Proportion	Currently married men 15-59
Currently using withdrawal	Proportion	Currently married men 15-59
Want no more children/sterilised	Proportion	Currently married men 15-59
Want to delay at least 2 years	Proportion	Currently married men 15-59
Ideal number of children	Mean	All men 15-59

Table B.2 Sampling errors - National sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
WOMEN								
Urban	0.359	0.008	4843	4843	1.123	0.022	0.344	0.374
No education	0.291	0.009	4843	4843	1.393	0.031	0.273	0.309
With secondary education or higher	0.104	0.007	4843	4843	1.548	0.065	0.090	0.117
Never married	0.237	0.007	4843	4843	1.103	0.028	0.223	0.250
Currently married	0.647	0.008	4843	4843	1.108	0.012	0.631	0.662
Married before age 20	0.587	0.009	3954	3933	1.112	0.015	0.570	0.605
Sex before age 18	0.546	0.009	3954	3933	1.088	0.016	0.529	0.563
Children ever born	2.634	0.037	4843	4843	0.993	0.014	2.559	2.709
Children ever born to women over 40	5.658	0.093	922	888	1.088	0.016	5.472	5.845
Children surviving	2.285	0.033	4843	4843	1.009	0.014	2.219	2.351
Know any contraceptive method	0.936	0.006	3229	3131	1.433	0.007	0.923	0.948
Know any modern contraceptive method	0.931	0.007	3229	3131	1.457	0.007	0.918	0.944
Ever used any contraceptive method	0.508	0.010	3229	3131	1.183	0.021	0.487	0.528
Currently using any method	0.220	0.008	3229	3131	1.111	0.037	0.203	0.236
Currently using a modern method	0.133	0.007	3229	3131	1.109	0.050	0.120	0.146
Currently using pill	0.039	0.004	3229	3131	1.130	0.098	0.032	0.047
Currently using IUD	0.007	0.001	3229	3131	1.002	0.209	0.004	0.010
Currently using injections	0.031	0.003	3229	3131	1.137	0.112	0.024	0.038
Currently using Norplant	0.001	0.001	3229	3131	1.067	0.522	0.000	0.003
Currently using condom	0.027	0.003	3229	3131	1.099	0.117	0.020	0.033
Currently using female sterilisation	0.013	0.002	3229	3131	1.047	0.163	0.009	0.017
Currently using periodic abstinence	0.066	0.005	3229	3131	1.173	0.078	0.056	0.076
Currently using withdrawal	0.015	0.002	3229	3131	1.062	0.153	0.010	0.019
Using public sector source	0.473	0.025	490	516	1.115	0.053	0.423	0.524
Want no more children/sterilised	0.337	0.008	3229	3131	0.994	0.025	0.321	0.354
Want to delay at least 2 years	0.346	0.008	3229	3131	0.987	0.024	0.329	0.362
Ideal number of children	4.265	0.036	4470	4493	1.263	0.008	4.193	4.337
Mothers received tetanus injection	0.808	0.009	3298	3194	1.132	0.012	0.789	0.827
Mothers received medical care at birth	0.443	0.014	3298	3194	1.359	0.032	0.414	0.471
Had diarrhoea in the last 2 weeks	0.179	0.009	3026	2948	1.150	0.047	0.162	0.196
Treated with ORS packets	0.292	0.020	566	529	0.966	0.068	0.253	0.332
Sought medical treatment	0.264	0.023	566	529	1.143	0.086	0.219	0.309
Having health card, seen	0.760	0.017	651	644	1.016	0.023	0.726	0.795
Received BCG vaccination	0.878	0.015	651	644	1.176	0.017	0.848	0.909
Received DPT vaccination (3 doses)	0.722	0.021	651	644	1.179	0.029	0.680	0.764
Received polio vaccination (3 doses)	0.716	0.021	651	644	1.170	0.029	0.673	0.758
Received measles vaccination	0.726	0.021	651	644	1.190	0.029	0.684	0.769
Fully immunised	0.620	0.023	651	644	1.195	0.037	0.574	0.666
Weight-for-height (below -2 SD)	0.095	0.006	2627	2570	1.025	0.062	0.084	0.107
Height-for-age (below -2 SD)	0.259	0.010	2627	2570	1.113	0.038	0.239	0.279
Weight-for-age (below -2 SD)	0.249	0.010	2627	2570	1.125	0.040	0.228	0.269
Total fertility rate (5 years)	4.545	0.116	NA	21817	1.401	0.025	4.314	4.777
Neonatal mortality rate(0-9 years)	32.335	2.700	6635	6365	1.062	0.084	26.934	37.736
Infant mortality rate (0-9 years)	61.197	3.639	6644	6373	1.078	0.059	53.919	68.475
Child mortality rate (0-9 years)	52.382	3.213	6700	6422	1.035	0.061	45.956	58.808
Under-five mortality rate (0-9 years)	110.373	4.876	6709	6430	1.112	0.044	100.621	120.126
Postneonatal mortality rate (0-9 years)	28.862	2.360	6644	6373	1.063	0.082	24.141	33.583
MEN								
Urban	0.354	0.011	1546	1546	0.889	0.031	0.332	0.375
No education	0.164	0.010	1546	1546	1.105	0.063	0.143	0.185
With secondary education or higher	0.200	0.013	1546	1546	1.273	0.065	0.174	0.226
Never married	0.409	0.014	1546	1546	1.112	0.034	0.382	0.437
Currently married	0.528	0.014	1546	1546	1.067	0.026	0.501	0.555
Knowing any contraceptive method	0.963	0.006	838	816	0.990	0.007	0.950	0.976
Knowing any modern contraceptive method	0.960	0.007	838	816	0.997	0.007	0.947	0.974
Ever used any contraceptive method	0.603	0.019	838	816	1.134	0.032	0.564	0.641
Currently using any method	0.315	0.017	838	816	1.049	0.053	0.281	0.349
Currently using a modern method	0.200	0.016	838	816	1.138	0.079	0.168	0.231
Currently using pill	0.050	0.009	838	816	1.153	0.173	0.033	0.068
Currently using IUD	0.009	0.003	838	816	0.925	0.335	0.003	0.015
Currently using injections	0.037	0.007	838	816	1.093	0.192	0.023	0.052
Currently using Norplant	0.001	0.001	838	816	1.118	1.000	0.000	0.004
Currently using condom	0.082	0.010	838	816	1.059	0.123	0.062	0.102
Currently using female sterilisation	0.011	0.004	838	816	1.052	0.340	0.004	0.019
Currently using male sterilisation	0.001	0.001	838	816	1.113	0.997	0.000	0.004
Currently using periodic abstinence	0.084	0.010	838	816	1.084	0.124	0.063	0.105
Currently using withdrawal	0.025	0.006	838	816	1.094	0.237	0.013	0.037
Want no more children/sterilised	0.311	0.018	838	816	1.105	0.057	0.275	0.346
Want to delay at least 2 years	0.336	0.017	838	816	1.059	0.051	0.302	0.371
Ideal number of children	4.624	0.093	1435	1450	1.036	0.020	4.438	4.811

NA = Not applicable

Table B.3 Sampling errors - Urban sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
WOMEN								
Urban	1.000	0.000	1585	1739	NA	0.000	1.000	1.000
No education	0.165	0.012	1585	1739	1.313	0.074	0.141	0.190
With secondary education or higher	0.202	0.015	1585	1739	1.481	0.074	0.172	0.232
Never married	0.308	0.012	1585	1739	1.045	0.039	0.284	0.333
Currently married	0.563	0.013	1585	1739	1.041	0.023	0.537	0.589
Married before age 20	0.505	0.014	1277	1398	1.001	0.028	0.477	0.533
Sex before age 18	0.488	0.015	1277	1398	1.080	0.031	0.457	0.518
Children ever born	1.990	0.057	1585	1739	1.019	0.029	1.876	2.103
Children ever born to women over 40	4.631	0.161	271	288	1.124	0.035	4.309	4.952
Children surviving	1.776	0.049	1585	1739	0.996	0.028	1.678	1.873
Know any contraceptive method	0.974	0.006	907	978	1.202	0.007	0.962	0.987
Know any modern contraceptive method	0.974	0.006	907	978	1.202	0.007	0.962	0.987
Ever used any contraceptive method	0.635	0.017	907	978	1.053	0.027	0.601	0.669
Currently using any method	0.304	0.016	907	978	1.067	0.054	0.271	0.337
Currently using a modern method	0.174	0.013	907	978	1.040	0.075	0.148	0.200
Currently using pill	0.043	0.007	907	978	1.091	0.171	0.028	0.058
Currently using IUD	0.015	0.004	907	978	0.923	0.247	0.008	0.023
Currently using injections	0.038	0.006	907	978	0.995	0.166	0.025	0.051
Currently using Norplant	0.001	0.001	907	978	1.043	1.003	0.000	0.004
Currently using condom	0.037	0.007	907	978	1.093	0.185	0.023	0.051
Currently using female sterilisation	0.021	0.005	907	978	0.972	0.218	0.012	0.031
Currently using periodic abstinence	0.110	0.011	907	978	1.087	0.103	0.087	0.132
Currently using withdrawal	0.018	0.004	907	978	0.888	0.218	0.010	0.026
Using public sector source	0.434	0.036	206	221	1.041	0.083	0.362	0.506
Want no more children/sterilised	0.347	0.015	907	978	0.939	0.043	0.317	0.376
Want to delay at least 2 years	0.284	0.016	907	978	1.051	0.055	0.253	0.316
Ideal number of children	3.689	0.049	1485	1632	1.244	0.013	3.591	3.786
Mothers received tetanus injection	0.880	0.015	711	774	1.098	0.017	0.849	0.910
Mothers received medical care at birth	0.763	0.023	711	774	1.223	0.031	0.716	0.810
Had diarrhoea in the last 2 weeks	0.167	0.017	672	733	1.183	0.104	0.132	0.202
Treated with ORS packets	0.341	0.035	115	123	0.758	0.103	0.271	0.411
Sought medical treatment	0.264	0.042	115	123	1.005	0.159	0.180	0.348
Having health card, seen	0.785	0.032	164	180	0.991	0.041	0.721	0.848
Received BCG vaccination	0.934	0.017	164	180	0.894	0.019	0.899	0.969
Received DPT vaccination (3 doses)	0.837	0.030	164	180	1.037	0.036	0.777	0.896
Received polio vaccination (3 doses)	0.818	0.029	164	180	0.970	0.036	0.760	0.877
Received measles vaccination	0.815	0.032	164	180	1.051	0.039	0.751	0.879
Fully immunised	0.723	0.038	164	180	1.087	0.053	0.647	0.799
Weight-for-height (below -2 SD)	0.065	0.010	582	638	1.015	0.159	0.044	0.086
Height-for-age (below -2 SD)	0.143	0.016	582	638	1.079	0.115	0.110	0.176
Weight-for-age (below -2 SD)	0.156	0.016	582	638	1.039	0.103	0.124	0.188
Total fertility rate (5 years)	2.961	0.133	NA	7807	1.112	0.045	2.694	3.227
Neonatal mortality rate(0-9 years)	23.210	4.284	1484	1609	0.949	0.185	14.641	31.778
Infant mortality rate (0-9 years)	42.602	5.516	1485	1610	0.923	0.129	31.571	53.633
Child mortality rate (0-9 years)	35.686	5.541	1499	1625	1.041	0.155	24.604	46.768
Under-five mortality rate (0-9 years)	76.767	7.441	1500	1626	0.995	0.097	61.886	91.649
Postneonatal mortality rate (0-9 years)	19.392	3.767	1485	1610	0.950	0.194	11.859	26.925
MEN								
Urban	1.000	0.000	492	547	NA	0.000	1.000	1.000
No education	0.059	0.012	492	547	1.122	0.202	0.035	0.083
With secondary education or higher	0.336	0.026	492	547	1.242	0.079	0.283	0.389
Never married	0.465	0.025	492	547	1.129	0.055	0.414	0.516
Currently married	0.452	0.023	492	547	1.020	0.051	0.406	0.498
Knowing any contraceptive method	0.993	0.006	226	247	0.971	0.006	0.982	1.000
Knowing any modern contraceptive method	0.993	0.006	226	247	0.971	0.006	0.982	1.000
Ever used any contraceptive method	0.756	0.031	226	247	1.067	0.040	0.695	0.817
Currently using any method	0.423	0.032	226	247	0.975	0.076	0.359	0.487
Currently using a modern method	0.270	0.029	226	247	0.989	0.108	0.212	0.329
Currently using pill	0.053	0.014	226	247	0.951	0.269	0.024	0.081
Currently using IUD	0.025	0.009	226	247	0.840	0.349	0.008	0.043
Currently using injections	0.049	0.015	226	247	1.071	0.313	0.018	0.080
Currently using Norplant	0.005	0.005	226	247	1.056	1.001	0.000	0.015
Currently using condom	0.108	0.018	226	247	0.889	0.170	0.072	0.145
Currently using female sterilisation	0.020	0.010	226	247	1.069	0.496	0.000	0.040
Currently using male sterilisation	0.000	0.000	226	247	NA	NA	0.000	0.000
Currently using periodic abstinence	0.122	0.024	226	247	1.094	0.195	0.075	0.170
Currently using withdrawal	0.025	0.011	226	247	1.069	0.441	0.003	0.048
Want no more children/sterilised	0.360	0.033	226	247	1.045	0.093	0.294	0.427
Want to delay at least 2 years	0.306	0.033	226	247	1.068	0.107	0.240	0.372
Ideal number of children	3.809	0.099	465	518	0.897	0.026	3.612	4.006

NA = Not applicable

Table B.4 Sampling errors - Rural sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
WOMEN								
Urban	0.000	0.000	3258	3104	NA	NA	0.000	0.000
No education	0.362	0.012	3258	3104	1.463	0.034	0.337	0.386
With secondary education or higher	0.049	0.006	3258	3104	1.674	0.130	0.036	0.061
Never married	0.197	0.008	3258	3104	1.103	0.039	0.181	0.212
Currently married	0.694	0.009	3258	3104	1.131	0.013	0.675	0.712
Married before age 20	0.633	0.011	2677	2535	1.179	0.017	0.611	0.655
Sex before age 18	0.578	0.010	2677	2535	1.086	0.018	0.558	0.599
Children ever born	2.995	0.047	3258	3104	0.969	0.016	2.902	3.089
Children ever born to women over 40	6.151	0.112	651	601	1.113	0.018	5.926	6.376
Children surviving	2.570	0.042	3258	3104	1.005	0.016	2.487	2.654
Know any contraceptive method	0.918	0.008	2322	2153	1.493	0.009	0.901	0.935
Know any modern contraceptive method	0.911	0.009	2322	2153	1.520	0.010	0.893	0.929
Ever used any contraceptive method	0.450	0.013	2322	2153	1.264	0.029	0.424	0.476
Currently using any method	0.181	0.009	2322	2153	1.148	0.051	0.163	0.200
Currently using a modern method	0.114	0.008	2322	2153	1.145	0.066	0.099	0.130
Currently using pill	0.038	0.005	2322	2153	1.143	0.120	0.029	0.047
Currently using IUD	0.003	0.001	2322	2153	1.095	0.389	0.001	0.006
Currently using injections	0.028	0.004	2322	2153	1.214	0.148	0.020	0.036
Currently using Norplant	0.001	0.001	2322	2153	1.077	0.611	0.000	0.003
Currently using condom	0.022	0.003	2322	2153	1.085	0.151	0.015	0.028
Currently using female sterilisation	0.009	0.002	2322	2153	1.097	0.243	0.004	0.013
Currently using periodic abstinence	0.047	0.005	2322	2153	1.250	0.117	0.036	0.057
Currently using withdrawal	0.013	0.003	2322	2153	1.159	0.208	0.008	0.019
Using public sector source	0.502	0.035	284	295	1.165	0.069	0.433	0.571
Want no more children/sterilised	0.333	0.010	2322	2153	1.018	0.030	0.313	0.353
Want to delay at least 2 years	0.374	0.009	2322	2153	0.934	0.025	0.355	0.393
Ideal number of children	4.594	0.047	2985	2861	1.263	0.010	4.500	4.687
Mothers received tetanus injection	0.785	0.011	2587	2421	1.155	0.015	0.762	0.807
Mothers received medical care at birth	0.341	0.017	2587	2421	1.474	0.049	0.307	0.374
Had diarrhoea in the last 2 weeks	0.183	0.010	2354	2215	1.146	0.053	0.164	0.203
Treated with ORS packets	0.278	0.024	451	406	1.045	0.085	0.231	0.325
Sought medical treatment	0.264	0.027	451	406	1.195	0.101	0.211	0.317
Having health card, seen	0.751	0.020	487	463	1.030	0.027	0.710	0.791
Received BCG vaccination	0.857	0.020	487	463	1.246	0.023	0.817	0.897
Received DPT vaccination (3 doses)	0.677	0.026	487	463	1.216	0.039	0.625	0.729
Received polio vaccination (3 doses)	0.676	0.026	487	463	1.231	0.039	0.623	0.729
Received measles vaccination	0.692	0.026	487	463	1.232	0.038	0.640	0.744
Fully immunised	0.580	0.028	487	463	1.232	0.048	0.524	0.636
Weight-for-height (below -2 SD)	0.105	0.007	2045	1932	1.033	0.067	0.091	0.119
Height-for-age (below -2 SD)	0.297	0.012	2045	1932	1.134	0.040	0.273	0.321
Weight-for-age (below -2 SD)	0.279	0.012	2045	1932	1.161	0.044	0.255	0.303
Total fertility rate (5 years)	5.415	0.129	NA	14010	1.310	0.024	5.156	5.674
Neonatal mortality rate(0-9 years)	35.414	3.296	5151	4756	1.099	0.093	28.822	42.006
Infant mortality rate (0-9 years)	67.481	4.445	5159	4763	1.118	0.066	58.591	76.371
Child mortality rate (0-9 years)	58.448	3.849	5201	4797	1.041	0.066	50.750	66.146
Under-five mortality rate (0-9 years)	121.985	5.896	5209	4804	1.137	0.048	110.193	133.777
Postneonatal mortality rate (0-9 years)	32.067	2.870	5159	4763	1.097	0.089	26.328	37.806
MEN								
Urban	0.000	0.000	1054	999	NA	NA	0.000	0.000
No education	0.222	0.014	1054	999	1.130	0.065	0.193	0.251
With secondary education or higher	0.126	0.013	1054	999	1.225	0.100	0.101	0.151
Never married	0.379	0.016	1054	999	1.078	0.043	0.347	0.411
Currently married	0.570	0.016	1054	999	1.081	0.029	0.537	0.603
Knowing any contraceptive method	0.950	0.009	612	569	1.014	0.009	0.932	0.968
Knowing any modern contraceptive method	0.946	0.009	612	569	1.020	0.010	0.927	0.964
Ever used any contraceptive method	0.536	0.024	612	569	1.186	0.045	0.488	0.584
Currently using any method	0.268	0.020	612	569	1.094	0.073	0.229	0.307
Currently using a modern method	0.169	0.018	612	569	1.214	0.109	0.132	0.206
Currently using pill	0.049	0.011	612	569	1.242	0.220	0.028	0.071
Currently using IUD	0.002	0.002	612	569	1.114	0.999	0.000	0.006
Currently using injections	0.032	0.008	612	569	1.092	0.242	0.017	0.048
Currently using Norplant	0.000	0.000	612	569	NA	NA	0.000	0.000
Currently using condom	0.070	0.012	612	569	1.149	0.170	0.046	0.094
Currently using female sterilisation	0.007	0.003	612	569	0.969	0.453	0.001	0.014
Currently using male sterilisation	0.002	0.002	612	569	1.138	0.996	0.000	0.006
Currently using periodic abstinence	0.067	0.011	612	569	1.067	0.161	0.046	0.089
Currently using withdrawal	0.024	0.007	612	569	1.100	0.281	0.011	0.038
Want no more children/sterilised	0.289	0.021	612	569	1.130	0.072	0.248	0.331
Want to delay at least 2 years	0.349	0.020	612	569	1.045	0.058	0.309	0.390
Ideal number of children	5.077	0.133	970	932	1.087	0.026	4.812	5.343

NA = Not applicable

Table B.5 Sampling errors - Western sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.231	0.021	519	593	1.142	0.091	0.189	0.273
No education	0.283	0.027	519	593	1.341	0.094	0.230	0.336
With secondary education or higher	0.081	0.019	519	593	1.626	0.241	0.042	0.120
Never married	0.279	0.022	519	593	1.135	0.080	0.235	0.324
Currently married	0.599	0.023	519	593	1.059	0.038	0.554	0.645
Married before age 20	0.582	0.034	411	470	1.400	0.059	0.513	0.650
Sex before age 18	0.620	0.032	411	470	1.339	0.052	0.556	0.685
Children ever born	2.493	0.098	519	593	0.866	0.039	2.298	2.689
Children ever born to women over 40	5.840	0.313	75	86	1.124	0.054	5.214	6.466
Children surviving	2.162	0.094	519	593	0.947	0.043	1.975	2.349
Know any contraceptive method	0.974	0.009	311	356	1.009	0.009	0.956	0.992
Know any modern contraceptive method	0.971	0.009	311	356	0.992	0.010	0.952	0.990
Ever used any contraceptive method	0.476	0.035	311	356	1.248	0.074	0.405	0.547
Currently using any method	0.183	0.021	311	356	0.934	0.112	0.142	0.224
Currently using a modern method	0.087	0.016	311	356	0.974	0.179	0.056	0.118
Currently using pill	0.032	0.009	311	356	0.926	0.288	0.014	0.051
Currently using IUD	0.000	0.000	311	356	NA	NA	0.000	0.000
Currently using injections	0.013	0.006	311	356	1.009	0.502	0.000	0.026
Currently using Norplant	0.000	0.000	311	356	NA	NA	0.000	0.000
Currently using condom	0.023	0.008	311	356	0.995	0.373	0.006	0.039
Currently using female sterilisation	0.010	0.006	311	356	0.996	0.573	0.000	0.021
Currently using periodic abstinence	0.055	0.013	311	356	1.040	0.246	0.028	0.082
Currently using withdrawal	0.029	0.008	311	356	0.879	0.289	0.012	0.046
Using public sector source	0.513	0.107	39	45	1.320	0.209	0.299	0.727
Want no more children/sterilised	0.296	0.029	311	356	1.132	0.099	0.237	0.354
Want to delay at least 2 years	0.309	0.023	311	356	0.879	0.075	0.263	0.355
Ideal number of children	4.179	0.080	464	530	1.069	0.019	4.019	4.339
Mothers received tetanus injection	0.842	0.029	361	413	1.224	0.034	0.785	0.900
Mothers received medical care at birth	0.446	0.048	361	413	1.494	0.107	0.351	0.541
Had diarrhoea in the last 2 weeks	0.180	0.026	333	381	1.142	0.145	0.128	0.233
Treated with ORS packets	0.317	0.048	60	69	0.718	0.151	0.221	0.412
Sought medical treatment	0.300	0.070	60	69	1.102	0.235	0.159	0.441
Having health card, seen	0.750	0.047	92	105	1.020	0.062	0.657	0.843
Received BCG vaccination	0.891	0.034	92	105	1.038	0.038	0.824	0.959
Received DPT vaccination (3 doses)	0.772	0.050	92	105	1.138	0.065	0.671	0.872
Received polio vaccination (3 doses)	0.750	0.054	92	105	1.193	0.073	0.641	0.859
Received measles vaccination	0.750	0.043	92	105	0.941	0.057	0.664	0.836
Fully immunised	0.674	0.058	92	105	1.167	0.086	0.558	0.790
Weight-for-height (below -2 SD)	0.092	0.019	293	335	1.156	0.204	0.055	0.130
Height-for-age (below -2 SD)	0.294	0.031	293	335	1.065	0.104	0.232	0.355
Weight-for-age (below -2 SD)	0.256	0.034	293	335	1.252	0.133	0.188	0.324
Total fertility rate (5 years)	4.700	0.342	NA	2617	1.411	0.073	4.017	5.383
Neonatal mortality rate(0-9 years)	38.349	7.309	684	782	0.900	0.191	23.731	52.968
Infant mortality rate (0-9 years)	67.951	9.242	685	783	0.863	0.136	49.467	86.435
Child mortality rate (0-9 years)	44.748	9.016	689	788	0.997	0.201	26.715	62.780
Under-five mortality rate (0-9 years)	109.658	12.896	690	789	0.949	0.118	83.865	135.451
Postneonatal mortality rate (0-9 years)	29.602	6.348	685	783	0.913	0.214	16.905	42.299

NA = Not applicable

Table B.6 Sampling errors - Central sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.317	0.026	447	552	1.187	0.082	0.265	0.369
No education	0.253	0.019	447	552	0.916	0.075	0.215	0.291
With secondary education or higher	0.069	0.017	447	552	1.454	0.252	0.034	0.104
Never married	0.233	0.017	447	552	0.860	0.074	0.198	0.267
Currently married	0.613	0.023	447	552	1.001	0.038	0.567	0.659
Married before age 20	0.559	0.025	356	440	0.953	0.045	0.509	0.609
Sex before age 18	0.517	0.028	356	440	1.038	0.053	0.462	0.572
Children ever born	2.958	0.148	447	552	1.105	0.050	2.663	3.253
Children ever born to women over 40	5.836	0.218	97	120	0.816	0.037	5.399	6.272
Children surviving	2.481	0.130	447	552	1.154	0.052	2.222	2.741
Know any contraceptive method	0.982	0.007	274	338	0.806	0.007	0.969	0.995
Know any modern contraceptive method	0.967	0.008	274	338	0.783	0.009	0.950	0.984
Ever used any contraceptive method	0.467	0.030	274	338	0.981	0.063	0.408	0.526
Currently using any method	0.193	0.027	274	338	1.111	0.137	0.140	0.247
Currently using a modern method	0.131	0.019	274	338	0.924	0.144	0.094	0.169
Currently using pill	0.015	0.007	274	338	0.970	0.482	0.001	0.029
Currently using IUD	0.007	0.000	274	338	0.085	0.060	0.006	0.008
Currently using injections	0.044	0.015	274	338	1.200	0.339	0.014	0.073
Currently using Norplant	0.004	0.004	274	338	1.006	1.005	0.000	0.011
Currently using condom	0.026	0.008	274	338	0.882	0.330	0.009	0.042
Currently using female sterilisation	0.007	0.005	274	338	0.979	0.691	0.000	0.017
Currently using periodic abstinence	0.036	0.017	274	338	1.479	0.460	0.003	0.070
Currently using withdrawal	0.011	0.006	274	338	0.953	0.548	0.000	0.023
Using public sector source	0.535	0.081	43	53	1.049	0.151	0.373	0.696
Want no more children/sterilised	0.420	0.021	274	338	0.710	0.051	0.377	0.462
Want to delay at least 2 years	0.274	0.020	274	338	0.750	0.074	0.233	0.314
Ideal number of children	4.049	0.098	408	504	1.358	0.024	3.852	4.246
Mothers received tetanus injection	0.808	0.028	307	379	1.024	0.034	0.752	0.863
Mothers received medical care at birth	0.400	0.042	307	379	1.173	0.105	0.316	0.484
Had diarrhoea in the last 2 weeks	0.166	0.030	271	335	1.231	0.183	0.105	0.227
Treated with ORS packets	0.356	0.086	45	56	1.175	0.241	0.184	0.527
Sought medical treatment	0.267	0.065	45	56	0.948	0.244	0.137	0.397
Having health card, seen	0.678	0.049	59	73	0.810	0.073	0.579	0.776
Received BCG vaccination	0.847	0.062	59	73	1.326	0.073	0.723	0.972
Received DPT vaccination (3 doses)	0.610	0.069	59	73	1.085	0.113	0.472	0.748
Received polio vaccination (3 doses)	0.576	0.059	59	73	0.912	0.102	0.459	0.694
Received measles vaccination	0.695	0.078	59	73	1.299	0.112	0.539	0.851
Fully immunised	0.491	0.071	59	73	1.095	0.145	0.349	0.634
Weight-for-height (below -2 SD)	0.103	0.021	224	277	1.027	0.209	0.060	0.146
Height-for-age (below -2 SD)	0.268	0.027	224	277	0.858	0.102	0.214	0.322
Weight-for-age (below -2 SD)	0.263	0.032	224	277	0.990	0.122	0.199	0.328
Total fertility rate (5 years)	4.776	0.293	NA	2476	0.942	0.061	4.189	5.363
Neonatal mortality rate(0-9 years)	40.925	8.725	638	788	0.987	0.213	23.476	58.375
Infant mortality rate (0-9 years)	83.764	15.234	638	788	1.229	0.182	53.296	114.231
Child mortality rate (0-9 years)	63.615	11.762	644	795	1.080	0.185	40.092	87.139
Under-five mortality rate (0-9 years)	142.051	18.929	644	795	1.184	0.133	104.192	179.909
Postneonatal mortality rate (0-9 years)	42.839	9.597	638	788	1.079	0.224	23.644	62.033

NA = Not applicable

Table B.7 Sampling errors - Greater Accra sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.891	0.012	692	808	1.045	0.014	0.866	0.916
No education	0.148	0.018	692	808	1.347	0.123	0.111	0.184
With secondary education or higher	0.261	0.026	692	808	1.560	0.100	0.209	0.314
Never married	0.347	0.019	692	808	1.030	0.054	0.309	0.384
Currently married	0.557	0.019	692	808	0.979	0.033	0.520	0.594
Married before age 20	0.438	0.019	553	645	0.921	0.044	0.399	0.477
Sex before age 18	0.436	0.021	553	645	0.974	0.047	0.395	0.477
Children ever born	1.826	0.079	692	808	1.014	0.043	1.668	1.985
Children ever born to women over 40	4.198	0.203	112	131	1.005	0.048	3.792	4.604
Children surviving	1.684	0.070	692	808	0.973	0.041	1.545	1.824
Know any contraceptive method	0.987	0.004	385	449	0.767	0.004	0.978	0.996
Know any modern contraceptive method	0.984	0.005	385	449	0.816	0.005	0.974	0.995
Ever used any contraceptive method	0.688	0.020	385	449	0.848	0.029	0.648	0.728
Currently using any method	0.322	0.022	385	449	0.935	0.069	0.277	0.366
Currently using a modern method	0.174	0.018	385	449	0.906	0.101	0.139	0.209
Currently using pill	0.047	0.012	385	449	1.112	0.256	0.023	0.071
Currently using IUD	0.021	0.007	385	449	0.986	0.345	0.006	0.035
Currently using injections	0.031	0.008	385	449	0.874	0.249	0.016	0.047
Currently using Norplant	0.003	0.003	385	449	1.006	1.006	0.000	0.008
Currently using condom	0.042	0.010	385	449	1.024	0.251	0.021	0.062
Currently using female sterilisation	0.026	0.008	385	449	1.022	0.320	0.009	0.043
Currently using periodic abstinence	0.119	0.017	385	449	1.000	0.139	0.086	0.152
Currently using withdrawal	0.026	0.007	385	449	0.804	0.251	0.013	0.039
Using public sector source	0.384	0.046	86	100	0.878	0.121	0.291	0.477
Want no more children/sterilised	0.390	0.023	385	449	0.917	0.059	0.344	0.435
Want to delay at least 2 years	0.270	0.022	385	449	0.983	0.082	0.226	0.315
Ideal number of children	3.494	0.046	657	767	0.867	0.013	3.402	3.585
Mothers received tetanus injection	0.858	0.024	282	329	0.983	0.029	0.809	0.907
Mothers received medical care at birth	0.726	0.034	282	329	1.051	0.047	0.658	0.794
Had diarrhoea in the last 2 weeks	0.141	0.030	270	315	1.406	0.214	0.081	0.201
Treated with ORS packets	0.316	0.071	38	44	0.924	0.223	0.175	0.457
Sought medical treatment	0.289	0.082	38	44	1.098	0.282	0.126	0.453
Having health card, seen	0.803	0.048	61	71	0.937	0.059	0.708	0.899
Received BCG vaccination	0.918	0.034	61	71	0.966	0.037	0.850	0.986
Received DPT vaccination (3 doses)	0.885	0.036	61	71	0.887	0.041	0.812	0.957
Received polio vaccination (3 doses)	0.852	0.049	61	71	1.076	0.057	0.754	0.950
Received measles vaccination	0.836	0.045	61	71	0.951	0.054	0.746	0.926
Fully immunised	0.737	0.068	61	71	1.200	0.092	0.602	0.873
Weight-for-height (below -2 SD)	0.055	0.013	238	278	0.903	0.245	0.028	0.081
Height-for-age (below -2 SD)	0.113	0.025	238	278	1.162	0.220	0.063	0.163
Weight-for-age (below -2 SD)	0.122	0.021	238	278	0.971	0.171	0.080	0.164
Total fertility rate (5 years)	2.661	0.187	NA	3614	1.100	0.070	2.288	3.034
Neonatal mortality rate(0-9 years)	25.892	6.856	587	686	0.897	0.265	12.179	39.604
Infant mortality rate (0-9 years)	41.409	8.743	587	686	0.948	0.211	23.923	58.896
Child mortality rate (0-9 years)	21.493	6.352	591	690	0.941	0.296	8.790	34.196
Under-five mortality rate (0-9 years)	62.012	11.128	591	690	1.003	0.179	39.756	84.268
Postneonatal mortality rate (0-9 years)	15.518	6.008	587	686	1.078	0.387	3.501	27.534

NA = Not applicable

Table B.8 Sampling errors - Volta sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.164	0.029	439	535	1.641	0.177	0.106	0.222
No education	0.240	0.038	439	535	1.846	0.157	0.164	0.315
With secondary education or higher	0.081	0.014	439	535	1.086	0.175	0.052	0.109
Never married	0.249	0.023	439	535	1.113	0.093	0.203	0.294
Currently married	0.624	0.025	439	535	1.087	0.040	0.574	0.675
Married before age 20	0.617	0.024	355	433	0.934	0.039	0.569	0.666
Sex before age 18	0.558	0.027	355	433	1.040	0.049	0.503	0.613
Children ever born	2.597	0.094	439	535	0.760	0.036	2.409	2.785
Children ever born to women over 40	5.715	0.290	74	90	0.925	0.051	5.134	6.295
Children surviving	2.272	0.093	439	535	0.865	0.041	2.087	2.458
Know any contraceptive method	0.943	0.023	276	334	1.669	0.025	0.896	0.989
Know any modern contraceptive method	0.943	0.023	276	334	1.669	0.025	0.896	0.989
Ever used any contraceptive method	0.523	0.029	276	334	0.959	0.055	0.465	0.581
Currently using any method	0.211	0.023	276	334	0.947	0.110	0.165	0.258
Currently using a modern method	0.121	0.020	276	334	1.036	0.168	0.081	0.162
Currently using pill	0.026	0.013	276	334	1.352	0.504	0.000	0.051
Currently using IUD	0.000	0.000	276	334	NA	NA	0.000	0.000
Currently using injections	0.055	0.016	276	334	1.183	0.297	0.022	0.087
Currently using Norplant	0.000	0.000	276	334	NA	NA	0.000	0.000
Currently using condom	0.015	0.008	276	334	1.043	0.512	0.000	0.030
Currently using female sterilisation	0.007	0.005	276	334	0.988	0.704	0.000	0.017
Currently using periodic abstinence	0.068	0.017	276	334	1.113	0.248	0.034	0.102
Currently using withdrawal	0.018	0.008	276	334	0.958	0.422	0.003	0.034
Using public sector source	0.591	0.092	48	60	1.280	0.155	0.407	0.774
Want no more children/sterilised	0.425	0.023	276	334	0.770	0.054	0.379	0.471
Want to delay at least 2 years	0.349	0.026	276	334	0.891	0.073	0.298	0.400
Ideal number of children	3.804	0.099	395	482	1.353	0.026	3.605	4.002
Mothers received tetanus injection	0.759	0.021	280	338	0.720	0.027	0.718	0.801
Mothers received medical care at birth	0.364	0.036	280	338	1.109	0.100	0.291	0.437
Had diarrhoea in the last 2 weeks	0.145	0.025	269	325	1.148	0.172	0.095	0.195
Treated with ORS packets	0.231	0.069	39	47	1.050	0.300	0.092	0.370
Sought medical treatment	0.226	0.092	39	47	1.362	0.408	0.042	0.411
Having health card, seen	0.688	0.069	54	65	1.052	0.101	0.550	0.827
Received BCG vaccination	0.783	0.078	54	65	1.299	0.100	0.627	0.938
Received DPT vaccination (3 doses)	0.652	0.090	54	65	1.337	0.138	0.472	0.832
Received polio vaccination (3 doses)	0.634	0.091	54	65	1.345	0.144	0.452	0.816
Received measles vaccination	0.692	0.097	54	65	1.481	0.140	0.498	0.886
Fully immunised	0.598	0.101	54	65	1.468	0.169	0.396	0.800
Weight-for-height (below -2 SD)	0.152	0.023	243	293	1.008	0.154	0.105	0.199
Height-for-age (below -2 SD)	0.251	0.029	243	293	1.095	0.115	0.193	0.308
Weight-for-age (below -2 SD)	0.247	0.024	243	293	0.871	0.099	0.198	0.296
Total fertility rate (5 years)	4.440	0.303	NA	2400	1.336	0.068	3.834	5.046
Neonatal mortality rate(0-9 years)	26.965	7.759	550	665	0.965	0.288	11.448	42.482
Infant mortality rate (0-9 years)	53.781	10.775	551	666	0.978	0.200	32.230	75.332
Child mortality rate (0-9 years)	46.722	9.493	556	672	0.972	0.203	27.736	65.707
Under-five mortality rate (0-9 years)	97.990	13.005	557	674	0.937	0.133	71.980	124.000
Postneonatal mortality rate (0-9 years)	26.817	8.396	551	666	1.098	0.313	10.024	43.609

NA = Not applicable

Table B.9 Sampling errors - Eastern sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.315	0.019	550	628	0.948	0.060	0.278	0.353
No education	0.159	0.017	550	628	1.060	0.104	0.126	0.192
With secondary education or higher	0.094	0.017	550	628	1.341	0.178	0.061	0.127
Never married	0.198	0.017	550	628	1.002	0.086	0.164	0.232
Currently married	0.678	0.021	550	628	1.066	0.031	0.636	0.721
Married before age 20	0.620	0.026	460	524	1.165	0.043	0.567	0.673
Sex before age 18	0.619	0.020	460	524	0.898	0.033	0.579	0.660
Children ever born	2.625	0.095	550	628	0.900	0.036	2.436	2.814
Children ever born to women over 40	5.328	0.244	101	115	1.029	0.046	4.839	5.817
Children surviving	2.336	0.086	550	628	0.915	0.037	2.164	2.509
Know any contraceptive method	0.978	0.007	372	426	0.908	0.007	0.964	0.992
Know any modern contraceptive method	0.975	0.009	372	426	1.053	0.009	0.958	0.992
Ever used any contraceptive method	0.569	0.032	372	426	1.255	0.057	0.504	0.633
Currently using any method	0.266	0.027	372	426	1.194	0.103	0.212	0.321
Currently using a modern method	0.196	0.020	372	426	0.986	0.104	0.155	0.237
Currently using pill	0.082	0.015	372	426	1.067	0.185	0.052	0.113
Currently using IUD	0.006	0.004	372	426	1.014	0.696	0.000	0.014
Currently using injections	0.041	0.009	372	426	0.877	0.221	0.023	0.059
Currently using Norplant	0.000	0.000	372	426	NA	NA	0.000	0.000
Currently using condom	0.049	0.012	372	426	1.039	0.238	0.026	0.072
Currently using female sterilisation	0.005	0.004	372	426	1.002	0.717	0.000	0.013
Currently using periodic abstinence	0.059	0.012	372	426	1.016	0.211	0.034	0.084
Currently using withdrawal	0.009	0.006	372	426	1.333	0.746	0.000	0.021
Using public sector source	0.376	0.060	82	95	1.109	0.159	0.257	0.495
Want no more children/sterilised	0.394	0.022	372	426	0.848	0.055	0.351	0.437
Want to delay at least 2 years	0.316	0.019	372	426	0.805	0.062	0.277	0.355
Ideal number of children	4.071	0.089	523	597	1.285	0.022	3.892	4.250
Mothers received tetanus injection	0.825	0.033	371	430	1.397	0.040	0.758	0.891
Mothers received medical care at birth	0.473	0.045	371	430	1.524	0.095	0.383	0.563
Had diarrhoea in the last 2 weeks	0.124	0.022	348	403	1.141	0.177	0.080	0.168
Treated with ORS packets	0.235	0.057	43	50	0.864	0.245	0.120	0.350
Sought medical treatment	0.117	0.063	43	50	1.281	0.540	0.000	0.244
Having health card, seen	0.754	0.052	73	84	1.031	0.069	0.651	0.858
Received BCG vaccination	0.892	0.035	73	84	0.952	0.039	0.822	0.961
Received DPT vaccination (3 doses)	0.605	0.066	73	84	1.157	0.109	0.473	0.737
Received polio vaccination (3 doses)	0.634	0.069	73	84	1.219	0.108	0.497	0.771
Received measles vaccination	0.634	0.060	73	84	1.063	0.094	0.514	0.754
Fully immunised	0.521	0.056	73	84	0.964	0.108	0.408	0.633
Weight-for-height (below -2 SD)	0.087	0.014	310	360	0.927	0.166	0.058	0.116
Height-for-age (below -2 SD)	0.236	0.027	310	360	1.101	0.113	0.183	0.289
Weight-for-age (below -2 SD)	0.223	0.032	310	360	1.271	0.143	0.160	0.287
Total fertility rate (5 years)	4.410	0.270	NA	2863	1.211	0.061	3.870	4.949
Neonatal mortality rate(0-9 years)	33.799	7.751	732	847	0.976	0.229	18.297	49.300
Infant mortality rate (0-9 years)	50.152	8.980	732	847	0.898	0.179	32.191	68.113
Child mortality rate (0-9 years)	40.978	6.527	737	852	0.803	0.159	27.925	54.032
Under-five mortality rate (0-9 years)	89.075	10.401	737	852	0.837	0.117	68.274	109.877
Postneonatal mortality rate (0-9 years)	16.353	4.844	732	847	1.021	0.296	6.666	26.040

NA = Not applicable

Table B.10 Sampling errors - Ashanti sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.340	0.017	629	728	0.899	0.050	0.306	0.374
No education	0.212	0.025	629	728	1.506	0.116	0.163	0.261
With secondary education or higher	0.077	0.015	629	728	1.432	0.198	0.046	0.107
Never married	0.184	0.014	629	728	0.885	0.074	0.157	0.211
Currently married	0.675	0.019	629	728	0.993	0.028	0.638	0.712
Married before age 20	0.630	0.019	524	606	0.885	0.030	0.593	0.668
Sex before age 18	0.583	0.020	524	606	0.938	0.035	0.543	0.624
Children ever born	2.689	0.102	629	728	0.963	0.038	2.486	2.892
Children ever born to women over 40	5.846	0.299	117	135	1.165	0.051	5.248	6.444
Children surviving	2.419	0.086	629	728	0.915	0.035	2.248	2.591
Know any contraceptive method	0.966	0.011	426	491	1.272	0.012	0.944	0.988
Know any modern contraceptive method	0.964	0.011	426	491	1.263	0.012	0.941	0.987
Ever used any contraceptive method	0.543	0.030	426	491	1.239	0.055	0.483	0.603
Currently using any method	0.246	0.023	426	491	1.112	0.094	0.199	0.292
Currently using a modern method	0.140	0.021	426	491	1.220	0.147	0.099	0.181
Currently using pill	0.040	0.009	426	491	0.967	0.229	0.022	0.059
Currently using IUD	0.007	0.004	426	491	1.009	0.580	0.000	0.015
Currently using injections	0.017	0.007	426	491	1.138	0.422	0.003	0.031
Currently using Norplant	0.002	0.002	426	491	1.002	1.014	0.000	0.007
Currently using condom	0.031	0.009	426	491	1.054	0.287	0.013	0.048
Currently using female sterilisation	0.021	0.005	426	491	0.748	0.245	0.011	0.032
Currently using periodic abstinence	0.092	0.015	426	491	1.077	0.164	0.062	0.122
Currently using withdrawal	0.007	0.004	426	491	0.998	0.582	0.000	0.015
Using public sector source	0.459	0.058	68	79	0.959	0.127	0.343	0.576
Want no more children/sterilised	0.301	0.020	426	491	0.896	0.066	0.262	0.341
Want to delay at least 2 years	0.341	0.021	426	491	0.934	0.063	0.298	0.384
Ideal number of children	4.142	0.062	585	676	1.017	0.015	4.018	4.265
Mothers received tetanus injection	0.848	0.021	448	514	1.083	0.024	0.807	0.890
Mothers received medical care at birth	0.580	0.042	448	514	1.540	0.073	0.496	0.664
Had diarrhoea in the last 2 weeks	0.202	0.019	423	485	0.925	0.093	0.165	0.240
Treated with ORS packets	0.334	0.045	85	98	0.847	0.134	0.245	0.423
Sought medical treatment	0.226	0.042	85	98	0.920	0.185	0.142	0.309
Having health card, seen	0.796	0.036	93	107	0.844	0.045	0.725	0.867
Received BCG vaccination	0.895	0.029	93	107	0.916	0.033	0.836	0.953
Received DPT vaccination (3 doses)	0.797	0.042	93	107	0.995	0.052	0.714	0.881
Received polio vaccination (3 doses)	0.787	0.037	93	107	0.874	0.048	0.712	0.861
Received measles vaccination	0.734	0.051	93	107	1.100	0.069	0.632	0.836
Fully immunised	0.678	0.052	93	107	1.069	0.077	0.574	0.783
Weight-for-height (below -2 SD)	0.092	0.013	366	420	0.846	0.141	0.066	0.118
Height-for-age (below -2 SD)	0.276	0.027	366	420	1.129	0.099	0.221	0.330
Weight-for-age (below -2 SD)	0.247	0.025	366	420	1.045	0.103	0.196	0.297
Total fertility rate (5 years)	4.755	0.319	NA	3340	1.326	0.067	4.117	5.394
Neonatal mortality rate(0-9 years)	22.345	5.776	846	971	1.097	0.259	10.792	33.898
Infant mortality rate (0-9 years)	41.898	6.877	848	973	0.964	0.164	28.144	55.652
Child mortality rate (0-9 years)	37.919	6.555	852	978	0.979	0.173	24.810	51.028
Under-five mortality rate (0-9 years)	78.229	9.960	854	980	1.100	0.127	58.309	98.148
Postneonatal mortality rate (0-9 years)	19.554	4.606	848	973	0.960	0.236	10.342	28.765

NA = Not applicable

Table B.11 Sampling errors - Brong Ahafo sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.217	0.026	309	358	1.123	0.122	0.164	0.269
No education	0.300	0.030	309	358	1.164	0.101	0.239	0.361
With secondary education or higher	0.029	0.012	309	358	1.265	0.415	0.005	0.054
Never married	0.227	0.018	309	358	0.751	0.079	0.191	0.263
Currently married	0.656	0.021	309	358	0.782	0.032	0.614	0.698
Married before age 20	0.725	0.036	237	274	1.238	0.050	0.653	0.797
Sex before age 18	0.700	0.030	237	274	1.004	0.043	0.640	0.760
Children ever born	3.104	0.117	309	358	0.681	0.038	2.870	3.339
Children ever born to women over 40	6.711	0.411	62	71	1.139	0.061	5.888	7.534
Children surviving	2.630	0.099	309	358	0.691	0.038	2.431	2.829
Know any contraceptive method	0.956	0.013	203	235	0.885	0.013	0.930	0.982
Know any modern contraceptive method	0.956	0.013	203	235	0.885	0.013	0.930	0.982
Ever used any contraceptive method	0.636	0.034	203	235	1.013	0.054	0.568	0.705
Currently using any method	0.247	0.023	203	235	0.772	0.095	0.200	0.294
Currently using a modern method	0.148	0.025	203	235	1.014	0.171	0.097	0.199
Currently using pill	0.059	0.015	203	235	0.904	0.254	0.029	0.089
Currently using IUD	0.010	0.007	203	235	0.979	0.693	0.000	0.023
Currently using injections	0.025	0.008	203	235	0.762	0.337	0.008	0.041
Currently using Norplant	0.000	0.000	203	235	NA	NA	0.000	0.000
Currently using condom	0.010	0.007	203	235	1.008	0.707	0.000	0.024
Currently using female sterilisation	0.020	0.012	203	235	1.223	0.606	0.000	0.044
Currently using periodic abstinence	0.074	0.020	203	235	1.073	0.267	0.035	0.114
Currently using withdrawal	0.025	0.013	203	235	1.198	0.530	0.000	0.051
Using public sector source	0.428	0.091	35	41	1.073	0.213	0.246	0.610
Want no more children/sterilised	0.325	0.032	203	235	0.979	0.099	0.261	0.390
Want to delay at least 2 years	0.404	0.036	203	235	1.052	0.090	0.332	0.477
Ideal number of children	4.265	0.120	304	352	1.204	0.028	4.025	4.505
Mothers received tetanus injection	0.841	0.032	225	260	1.124	0.037	0.778	0.904
Mothers received medical care at birth	0.514	0.040	225	260	1.020	0.078	0.434	0.593
Had diarrhoea in the last 2 weeks	0.208	0.028	202	233	0.943	0.135	0.152	0.265
Treated with ORS packets	0.168	0.067	42	49	1.031	0.400	0.034	0.302
Sought medical treatment	0.167	0.051	42	49	0.868	0.305	0.065	0.269
Having health card, seen	0.846	0.054	39	45	0.933	0.064	0.738	0.954
Received BCG vaccination	0.846	0.053	39	45	0.914	0.062	0.740	0.952
Received DPT vaccination (3 doses)	0.794	0.062	39	45	0.960	0.078	0.670	0.919
Received polio vaccination (3 doses)	0.794	0.058	39	45	0.892	0.073	0.679	0.910
Received measles vaccination	0.820	0.049	39	45	0.800	0.060	0.721	0.918
Fully immunised	0.666	0.066	39	45	0.872	0.099	0.534	0.797
Weight-for-height (below -2 SD)	0.081	0.021	174	201	1.015	0.257	0.039	0.122
Height-for-age (below -2 SD)	0.178	0.033	174	201	1.166	0.186	0.112	0.244
Weight-for-age (below -2 SD)	0.241	0.036	174	201	1.142	0.150	0.169	0.314
Total fertility rate (5 years)	5.401	0.373	NA	1550	1.105	0.069	4.654	6.147
Neonatal mortality rate(0-9 years)	54.376	16.502	447	516	1.225	0.303	21.373	87.379
Infant mortality rate (0-9 years)	77.289	17.973	448	518	1.214	0.233	41.343	113.235
Child mortality rate (0-9 years)	55.664	10.090	450	520	0.921	0.181	35.483	75.845
Under-five mortality rate (0-9 years)	128.651	20.758	451	521	1.129	0.161	87.134	170.168
Postneonatal mortality rate (0-9 years)	22.913	7.469	448	518	1.057	0.326	7.974	37.852

NA = Not applicable

Table B.12 Sampling errors - Northern sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.234	0.017	355	234	0.761	0.073	0.200	0.269
No education	0.828	0.039	355	234	1.963	0.048	0.749	0.907
With secondary education or higher	0.035	0.015	355	234	1.513	0.420	0.006	0.065
Never married	0.120	0.018	355	234	1.023	0.147	0.085	0.156
Currently married	0.835	0.022	355	234	1.102	0.026	0.791	0.878
Married before age 20	0.676	0.033	306	202	1.244	0.049	0.609	0.742
Sex before age 18	0.432	0.033	306	202	1.167	0.077	0.366	0.498
Children ever born	3.426	0.177	355	234	1.206	0.052	3.071	3.780
Children ever born to women over 40	6.651	0.260	77	51	0.995	0.039	6.131	7.171
Children surviving	2.706	0.148	355	234	1.263	0.055	2.411	3.001
Know any contraceptive method	0.729	0.061	296	196	2.373	0.084	0.606	0.852
Know any modern contraceptive method	0.715	0.067	296	196	2.544	0.093	0.581	0.849
Ever used any contraceptive method	0.239	0.032	296	196	1.294	0.134	0.175	0.303
Currently using any method	0.100	0.021	296	196	1.231	0.215	0.057	0.143
Currently using a modern method	0.056	0.015	296	196	1.137	0.271	0.026	0.087
Currently using pill	0.020	0.010	296	196	1.267	0.514	0.000	0.041
Currently using IUD	0.003	0.003	296	196	0.999	1.022	0.000	0.010
Currently using injections	0.006	0.005	296	196	0.985	0.711	0.000	0.016
Currently using Norplant	0.000	0.000	296	196	NA	NA	0.000	0.000
Currently using condom	0.010	0.004	296	196	0.673	0.385	0.002	0.018
Currently using female sterilisation	0.007	0.005	296	196	0.978	0.696	0.000	0.016
Currently using periodic abstinence	0.037	0.017	296	196	1.547	0.460	0.003	0.071
Currently using withdrawal	0.003	0.003	296	196	0.977	1.000	0.000	0.010
Using public sector source	0.450	0.085	20	13	0.742	0.188	0.281	0.619
Want no more children/sterilised	0.173	0.034	296	196	1.557	0.198	0.104	0.241
Want to delay at least 2 years	0.528	0.024	296	196	0.837	0.046	0.479	0.577
Ideal number of children	6.893	0.281	328	217	1.673	0.041	6.332	7.454
Mothers received tetanus injection	0.640	0.040	350	232	1.201	0.062	0.561	0.719
Mothers received medical care at birth	0.112	0.024	350	232	1.200	0.213	0.064	0.159
Had diarrhoea in the last 2 weeks	0.314	0.026	306	203	0.957	0.082	0.262	0.365
Treated with ORS packets	0.217	0.052	96	64	1.209	0.238	0.114	0.321
Sought medical treatment	0.271	0.079	96	64	1.677	0.292	0.113	0.430
Having health card, seen	0.650	0.071	57	38	1.118	0.109	0.509	0.791
Received BCG vaccination	0.877	0.059	57	38	1.351	0.067	0.760	0.994
Received DPT vaccination (3 doses)	0.544	0.082	57	38	1.247	0.151	0.379	0.708
Received polio vaccination (3 doses)	0.631	0.082	57	38	1.289	0.130	0.467	0.796
Received measles vaccination	0.597	0.086	57	38	1.321	0.144	0.425	0.768
Fully immunised	0.474	0.082	57	38	1.243	0.173	0.310	0.638
Weight-for-height (below -2 SD)	0.127	0.017	253	168	0.799	0.131	0.094	0.160
Height-for-age (below -2 SD)	0.396	0.038	253	168	1.212	0.097	0.319	0.473
Weight-for-age (below -2 SD)	0.381	0.035	253	168	1.116	0.093	0.310	0.452
Total fertility rate (5 years)	6.976	0.511	NA	1096	1.311	0.073	5.953	7.998
Neonatal mortality rate(0-9 years)	26.717	6.830	680	451	0.943	0.256	13.056	40.378
Infant mortality rate (0-9 years)	70.138	8.696	681	452	0.870	0.124	52.745	87.530
Child mortality rate (0-9 years)	108.787	18.320	690	457	1.356	0.168	72.147	145.426
Under-five mortality rate (0-9 years)	171.294	18.284	691	458	1.177	0.107	134.727	207.862
Postneonatal mortality rate (0-9 years)	43.421	6.361	681	452	0.873	0.147	30.698	56.144

NA = Not applicable

Table B.13 Sampling errors - Upper West sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.121	0.012	350	120	0.668	0.096	0.098	0.144
No education	0.725	0.037	350	120	1.547	0.051	0.651	0.799
With secondary education or higher	0.031	0.012	350	120	1.307	0.391	0.007	0.055
Never married	0.148	0.025	350	120	1.320	0.169	0.098	0.198
Currently married	0.812	0.031	350	120	1.459	0.038	0.751	0.873
Married before age 20	0.589	0.041	292	100	1.422	0.070	0.507	0.671
Sex before age 18	0.417	0.022	292	100	0.751	0.052	0.374	0.460
Children ever born	3.539	0.234	350	120	1.451	0.066	3.070	4.008
Children ever born to women over 40	6.813	0.220	95	33	0.936	0.032	6.372	7.254
Children surviving	2.864	0.191	350	120	1.461	0.067	2.481	3.246
Know any contraceptive method	0.731	0.023	284	97	0.873	0.031	0.685	0.777
Know any modern contraceptive method	0.710	0.023	284	97	0.840	0.032	0.665	0.755
Ever used any contraceptive method	0.273	0.044	284	97	1.665	0.162	0.185	0.361
Currently using any method	0.119	0.030	284	97	1.573	0.255	0.058	0.179
Currently using a modern method	0.091	0.026	284	97	1.512	0.285	0.039	0.142
Currently using pill	0.021	0.011	284	97	1.326	0.537	0.000	0.044
Currently using IUD	0.010	0.008	284	97	1.286	0.749	0.000	0.026
Currently using injections	0.045	0.017	284	97	1.386	0.378	0.011	0.080
Currently using Norplant	0.000	0.000	284	97	NA	NA	0.000	0.000
Currently using condom	0.003	0.003	284	97	0.991	1.011	0.000	0.010
Currently using female sterilisation	0.010	0.006	284	97	0.983	0.568	0.000	0.022
Currently using periodic abstinence	0.018	0.010	284	97	1.261	0.558	0.000	0.037
Currently using withdrawal	0.003	0.003	284	97	0.991	1.011	0.000	0.010
Using public sector source	0.752	0.111	28	10	1.335	0.147	0.530	0.974
Want no more children/sterilised	0.243	0.041	284	97	1.592	0.167	0.162	0.324
Want to delay at least 2 years	0.409	0.054	284	97	1.861	0.133	0.300	0.518
Ideal number of children	5.865	0.172	279	96	1.151	0.029	5.521	6.208
Mothers received tetanus injection	0.615	0.028	292	100	0.795	0.046	0.559	0.672
Mothers received medical care at birth	0.221	0.020	292	100	0.696	0.089	0.181	0.260
Had diarrhoea in the last 2 weeks	0.192	0.021	261	90	0.857	0.111	0.149	0.234
Treated with ORS packets	0.260	0.052	50	17	0.824	0.199	0.156	0.364
Sought medical treatment	0.340	0.079	50	17	1.150	0.231	0.183	0.498
Having health card, seen	0.860	0.061	50	17	1.239	0.071	0.738	0.982
Received BCG vaccination	0.880	0.025	50	17	0.532	0.028	0.830	0.929
Received DPT vaccination (3 doses)	0.799	0.091	50	17	1.593	0.114	0.618	0.981
Received polio vaccination (3 doses)	0.780	0.091	50	17	1.538	0.116	0.599	0.961
Received measles vaccination	0.779	0.052	50	17	0.873	0.066	0.676	0.882
Fully immunised	0.680	0.063	50	17	0.949	0.093	0.553	0.806
Weight-for-height (below -2 SD)	0.071	0.021	197	68	1.129	0.291	0.030	0.112
Height-for-age (below -2 SD)	0.346	0.035	197	68	1.002	0.102	0.275	0.416
Weight-for-age (below -2 SD)	0.284	0.035	197	68	1.106	0.124	0.214	0.354
Total fertility rate (5 years)	6.135	0.370	NA	961	1.267	0.060	5.395	6.876
Neonatal mortality rate(0-9 years)	28.447	9.685	602	207	1.404	0.340	9.076	47.817
Infant mortality rate (0-9 years)	70.613	18.482	604	208	1.547	0.262	33.649	107.577
Child mortality rate (0-9 years)	91.471	17.199	610	210	1.218	0.188	57.073	125.869
Under-five mortality rate (0-9 years)	155.625	22.243	612	210	1.332	0.143	111.138	200.112
Postneonatal mortality rate (0-9 years)	42.166	13.865	604	208	1.579	0.329	14.437	69.896

NA = Not applicable

Table B.14 Sampling errors - Upper East sample: Ghana 1998

Variable	Value (R)	Standard error (SE)	Number of cases: Unweighted (N)	Number of cases: Weighted (WN)	Design effect (DEFT)	Relative error (SE/R)	Confidence limits: R-2SE	Confidence limits: R+2SE
Urban	0.094	0.008	553	288	0.669	0.089	0.077	0.110
No education	0.739	0.037	553	288	1.968	0.050	0.665	0.812
With secondary education or higher	0.085	0.031	553	288	2.592	0.361	0.024	0.147
Never married	0.190	0.027	553	288	1.598	0.140	0.137	0.243
Currently married	0.727	0.033	553	288	1.739	0.045	0.661	0.793
Married before age 20	0.587	0.028	460	240	1.209	0.047	0.531	0.643
Sex before age 18	0.452	0.028	460	240	1.194	0.061	0.397	0.508
Children ever born	2.917	0.164	553	288	1.472	0.056	2.589	3.246
Children ever born to women over 40	5.632	0.265	112	58	1.201	0.047	5.102	6.162
Children surviving	2.406	0.125	553	288	1.344	0.052	2.156	2.656
Know any contraceptive method	0.786	0.032	402	209	1.545	0.040	0.723	0.850
Know any modern contraceptive method	0.779	0.031	402	209	1.495	0.040	0.717	0.841
Ever used any contraceptive method	0.224	0.029	402	209	1.399	0.130	0.166	0.283
Currently using any method	0.090	0.016	402	209	1.101	0.175	0.058	0.121
Currently using a modern method	0.075	0.014	402	209	1.071	0.188	0.047	0.103
Currently using pill	0.015	0.007	402	209	1.145	0.465	0.001	0.029
Currently using IUD	0.003	0.003	402	209	1.009	1.001	0.000	0.008
Currently using injections	0.042	0.015	402	209	1.486	0.353	0.013	0.072
Currently using Norplant	0.002	0.003	402	209	1.023	1.023	0.000	0.008
Currently using condom	0.012	0.005	402	209	0.941	0.419	0.002	0.023
Currently using female sterilisation	0.000	0.000	402	209	NA	NA	0.000	0.000
Currently using periodic abstinence	0.012	0.006	402	209	1.036	0.461	0.001	0.024
Currently using withdrawal	0.002	0.002	402	209	0.988	0.989	0.000	0.007
Using public sector source	0.781	0.080	41	21	1.222	0.102	0.621	0.941
Want no more children/sterilised	0.199	0.028	402	209	1.401	0.140	0.143	0.255
Want to delay at least 2 years	0.490	0.038	402	209	1.509	0.077	0.415	0.565
Ideal number of children	5.880	0.183	527	275	1.684	0.031	5.514	6.247
Mothers received tetanus injection	0.840	0.029	382	199	1.322	0.035	0.782	0.899
Mothers received medical care at birth	0.168	0.028	382	199	1.334	0.169	0.111	0.225
Had diarrhoea in the last 2 weeks	0.198	0.027	343	179	1.248	0.136	0.144	0.252
Treated with ORS packets	0.485	0.049	68	35	0.779	0.100	0.388	0.583
Sought medical treatment	0.603	0.060	68	35	0.985	0.100	0.482	0.724
Having health card, seen	0.863	0.027	73	38	0.657	0.031	0.810	0.916
Received BCG vaccination	0.959	0.020	73	38	0.876	0.021	0.918	1.000
Received DPT vaccination (3 doses)	0.713	0.048	73	38	0.864	0.067	0.617	0.808
Received polio vaccination (3 doses)	0.713	0.048	73	38	0.864	0.067	0.617	0.808
Received measles vaccination	0.753	0.051	73	38	0.972	0.068	0.651	0.856
Fully immunised	0.658	0.044	73	38	0.767	0.067	0.570	0.746
Weight-for-height (below -2 SD)	0.082	0.015	329	171	0.983	0.179	0.053	0.111
Height-for-age (below -2 SD)	0.359	0.026	329	171	0.950	0.072	0.307	0.410
Weight-for-age (below -2 SD)	0.340	0.020	329	171	0.716	0.058	0.301	0.379
Total fertility rate (5 years)	4.978	0.341	NA	1313	1.725	0.069	4.295	5.660
Neonatal mortality rate(0-9 years)	25.491	5.630	869	452	1.033	0.221	14.230	36.752
Infant mortality rate (0-9 years)	81.472	11.057	870	453	1.129	0.136	59.358	103.587
Child mortality rate (0-9 years)	80.328	10.219	881	459	1.026	0.127	59.890	100.767
Under-five mortality rate (0-9 years)	155.256	15.959	882	459	1.298	0.103	123.337	187.175
Postneonatal mortality rate (0-9 years)	55.981	8.906	870	453	1.062	0.159	38.168	73.794

NA = Not applicable

APPENDIX C

DATA QUALITY TABLES

Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), Ghana 1998

	Males		Females			Males		Females	
Age	Number	Percent	Number	Percent	Age	Number	Percent	Number	Percent
0	295	2.9	308	2.8	37	58	0.6	80	0.7
1	316	3.1	316	2.9	38	88	0.9	158	1.5
2	288	2.9	292	2.7	39	64	0.6	75	0.7
3	314	3.1	313	2.9	40	146	1.5	182	1.7
4	312	3.1	316	2.9	41	63	0.6	60	0.5
5	286	2.8	313	2.9	42	110	1.1	95	0.9
6	328	3.3	320	3.0	43	49	0.5	77	0.7
7	343	3.4	319	2.9	44	50	0.5	59	0.5
8	385	3.8	340	3.1	45	141	1.4	125	1.2
9	318	3.2	272	2.5	46	70	0.7	70	0.6
10	330	3.3	333	3.1	47	38	0.4	58	0.5
11	274	2.7	279	2.6	48	65	0.6	84	0.8
12	355	3.5	313	2.9	49	52	0.5	68	0.6
13	286	2.8	296	2.7	50	98	1.0	70	0.6
14	227	2.3	226	2.1	51	36	0.4	51	0.5
15	277	2.8	220	2.0	52	57	0.6	103	1.0
16	211	2.1	179	1.6	53	35	0.4	57	0.5
17	167	1.7	161	1.5	54	44	0.4	97	0.9
18	210	2.1	216	2.0	55	49	0.5	88	0.8
19	178	1.8	151	1.4	56	50	0.5	64	0.6
20	214	2.1	217	2.0	57	31	0.3	38	0.3
21	121	1.2	164	1.5	58	53	0.5	45	0.4
22	144	1.4	202	1.9	59	38	0.4	24	0.2
23	139	1.4	145	1.3	60	58	0.6	101	0.9
24	128	1.3	174	1.6	61	29	0.3	32	0.3
25	165	1.6	250	2.3	62	46	0.5	60	0.6
26	119	1.2	179	1.7	63	30	0.3	31	0.3
27	140	1.4	142	1.3	64	27	0.3	25	0.2
28	161	1.6	203	1.9	65	57	0.6	84	0.8
29	99	1.0	109	1.0	66	19	0.2	19	0.2
30	198	2.0	218	2.0	67	25	0.3	18	0.2
31	94	0.9	87	0.8	68	31	0.3	39	0.4
32	125	1.2	153	1.4	69	11	0.1	18	0.2
33	66	0.7	95	0.9	70+	306	3.0	361	3.3
34	89	0.9	106	1.0	Don't know/				
35	133	1.3	183	1.7	missing	2	0.0	4	0.0
36	103	1.0	118	1.1					
					Total	10,065	100.0	10,850	100.0

Note: The de facto population includes all residents and nonresidents (visitors) who slept in the household the night before the interview.

Table C.2 Age distribution of eligible and interviewed women

Percent distribution of the de facto household population of women age 10-54, and of interviewed women age 15-49, and percentage of eligible women who were interviewed (weighted) by five-year age groups, Ghana 1998

Age	Household population		Interviewed women		Percentage of eligible women interviewed (weighted)
	Number	Percent	Number	Percent	
10-14	1,447	NA	NA	NA	NA
15-19	927	19.0	896	18.9	96.7
20-24	903	18.6	882	18.6	97.7
25-29	883	18.2	857	18.0	97.0
30-34	659	13.6	643	13.5	97.5
35-39	614	12.6	606	12.8	98.8
40-44	473	9.7	467	9.8	98.8
45-49	406	8.3	398	8.4	98.0
50-54	378	NA	NA	NA	NA
15-49	4,865	NA	4,749	NA	97.6

Note: The de facto population includes all residents and nonresidents (visitors) who slept in the household the night before the interview.
NA = Not applicable

Table C.3 Age distribution of eligible and interviewed men

Percent distribution of the de facto household population of men age 10-65+, and of interviewed men age 15-59, and percentage of eligible men who were interviewed (weighted) by five-year age groups, Ghana 1998

Age	Household population		Interviewed men		Percentage of eligible men interviewed (weighted)
	Number	Percent	Number	Percent	
10-14	473	NA	NA	NA	NA
15-19	343	21.0	331	21.7	96.3
20-24	244	14.9	241	15.8	98.6
25-29	213	13.0	206	13.5	96.7
30-34	217	13.3	213	14.0	97.9
35-39	158	9.6	152	10.0	96.3
40-44	127	7.7	124	8.2	98.2
45-49	102	6.2	94	6.2	92.5
50-54	91	5.5	89	5.9	98.4
55-59	78	4.7	74	4.9	95.5
60-64	66	4.0	0	0.0	0.0
65+	50	NA	NA	NA	NA
15-59	1,573	NA	1,524	NA	96.9

Note: The de facto population includes all residents and nonresidents (visitors) who slept in the household the night before interview.
NA = Not applicable

Table C.4 Completeness of reporting

Percentage of observations missing information for selected demographic and health questions (weighted), Ghana 1998

Subject	Reference group	Percentage missing information	Number of cases
Birth date	Births in last 15 years		
Month only		13.3	8,937
Month and year		0.0	8,937
Age at death	Deaths to births in last 15 years	0.5	997
Age/date at first union[1]	Ever-married women	0.0	3,696
Respondent's education	All women	0.0	4,843
Child's size at birth	Births in last 59 months	37.4	1,060
Anthropometry[2]	Living children age 1-59 months		
Height missing		5.5	2,948
Weight missing		4.8	2,948
Height or weight missing		5.5	2,948
Diarrhoea in last 2 weeks	Living children age 1-59 months	2.3	2,948

[1] Both year and age missing
[2] Child not measured

Table C.5 Births by calendar years

Distribution of births by Western calendar years for living (L), dead (D), and all (T) children, according to reporting completeness, sex ratio at birth, and ratio of births by calendar year, Ghana 1998

	Number of births			Percentage with complete birth date[1]			Sex ratio at birth[2]			Calendar ratio[3]			Male			Female		
Year	L	D	T	L	D	T	L	D	T	L	D	T	L	D	T	L	D	T
98	620	28	648	98.7	95.9	98.5	90.9	54.2	89.0	NA	NA	NA	295	10	305	325	18	343
97	631	52	683	96.8	81.8	95.7	107.5	150.4	110.3	107.7	141.8	109.7	327	31	358	304	21	325
96	551	46	596	95.2	70.9	93.3	94.5	105.5	95.3	91.0	78.4	89.9	268	24	291	283	22	305
95	579	65	644	92.6	69.9	90.3	88.8	64.6	86.0	102.5	127.4	104.5	273	25	298	307	39	346
94	581	56	636	91.4	68.0	89.4	102.0	158.2	105.9	105.7	89.5	104.0	293	34	327	288	22	309
93	519	60	580	89.5	82.9	88.8	81.8	117.0	84.9	89.6	81.2	88.6	234	32	266	286	28	313
92	579	92	671	84.9	77.9	83.9	107.3	123.4	109.4	111.7	148.3	115.6	300	51	351	279	41	321
91	517	64	581	85.8	63.7	83.3	105.8	110.1	106.3	88.3	67.5	85.4	266	34	299	251	31	282
90	593	98	691	83.1	70.4	81.3	121.2	128.5	122.2	116.6	143.8	119.8	325	55	380	268	43	311
89	500	72	572	87.2	61.1	83.9	132.4	99.6	127.7	NA	NA	NA	285	36	321	215	36	251
94-98	2,962	246	3,208	95.0	75.1	93.5	96.6	101.7	97.0	NA	NA	NA	1,455	124	1,580	1,506	122	1,628
89-93	2,708	386	3,094	86.0	71.3	84.1	108.4	116.5	109.4	NA	NA	NA	1,409	208	1,617	1,299	178	1,478
84-88	2,264	366	2,630	82.4	73.1	81.1	96.7	119.4	99.5	NA	NA	NA	1,113	199	1,312	1,151	167	1,318
79-83	1,616	338	1,955	83.4	68.6	80.9	106.1	107.7	106.4	NA	NA	NA	832	175	1,007	784	163	947
< 79	1,501	355	1,856	78.8	63.2	75.8	110.5	106.0	109.6	NA	NA	NA	788	182	971	713	172	885
All	11,051	1,692	12,743	86.3	70.0	84.1	102.6	110.9	103.7	NA	NA	NA	5,597	889	6,486	5,454	802	6,257

NA = Not applicable

[1] Both year and month of birth given

[2] $(B_m/B_f)*100$, where B_m and B_f are the numbers of male and female births, respectively

[3] $[2B_x/(B_{x-1}+B_{x+1})]*100$, where B_x is the number of births in calendar year *x*

Table C.6 Reporting of age at death in days

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, for five-year periods preceding the survey (unweighted), Ghana 1998

Age at death (in days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	11	11	6	7	35
1	42	34	30	19	126
2	6	8	10	8	33
3	13	11	12	12	48
4	2	7	5	2	16
5	2	2	2	2	9
6	2	6	5	0	13
7	2	12	12	15	41
8	2	7	5	1	15
9	0	0	1	1	2
10	0	0	0	1	1
12	0	2	1	0	3
13	0	0	1	0	1
14	7	6	6	7	27
15	0	0	0	1	1
16	0	0	1	0	1
17	0	0	0	1	1
18	0	0	1	0	1
21	4	3	3	0	10
25	0	1	0	0	1
27	0	0	2	1	3
31+	1	0	1	0	2
Total 0-30[1]	83.6	72.1	67.7	63.4	71.9
Percent early neonatal[2]	93	110	105	79	387

[1] Includes cases for which age at death (in exact days) is not known
[2] (0-6 days/0-30 days) * 100

Table C.7 Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at ages under one month, for five-year periods preceding the survey (unweighted), Ghana 1998

Age at death (in months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1[a]	93	110	105	79	387
1	8	10	7	10	34
2	9	9	6	5	29
3	13	7	14	13	47
4	10	11	11	5	37
5	1	4	4	6	15
6	9	8	9	7	33
7	13	11	6	7	36
8	5	11	3	6	26
9	4	5	15	3	27
10	3	5	4	4	16
11	7	3	9	3	22
12	11	18	13	12	55
13	5	5	5	3	18
14	4	4	3	0	11
15	2	1	1	0	5
16	1	1	1	3	6
17	0	0	0	2	3
18	5	10	11	10	36
19	0	0	0	1	1
20	3	0	1	3	7
21	1	0	1	0	2
22	2	1	1	0	4
23	0	2	3	1	6
24+	0	1	1	1	3
1 year	7	7	12	9	35
Total 0-11[b]	175	194	193	148	709
Percent neonatal[c]	53.3	57.1	54.4	53.2	54.6

[a] Includes deaths under 1 month reported in days
[b] Includes cases for which age at death (in exact months) is not known
[c] (under 1 month/under 1 year) * 100

APPENDIX D

SURVEY PERSONNEL

Ghana Statistical Service

Daasebre Dr. Oti Boateng, Project Director
Dr. K.A. Twum-Baah, Deputy Project Director
Mr. Stephen Adjei, Survey Director
Mr. K.B. Danso-Manu, Project Liaison Officer/Data Processing Supervisor
Mr. Eric A. Okrah, Field Co-ordinator/Researcher
Mr. Alex Ohene-Okai, Field Co-ordinator/Researcher
Ms. Edith K. Ameka, Field Co-ordinator/Researcher
Nana Akwasi Ango II/Researcher
Mr. Adams Kasanga, Field Co-ordinator
Ms. Abena Asamoabea Ani, Data Processing Assistant
Mrs. Jacqueline Dede Anum, Data Processing Assistant
Mr. S.R. Bannerman, Chief Technical Officer
Mr. K. Fobi-Boateng, Project Accountant
Ms. Justina Yeboah, Project Secretary
Mr. W.H.O. Yeboah, Project Auditor

Macro International Inc.

Dr. Pavalavalli Govindasamy, Country Monitor
Ms. Anne Cross, Regional Co-ordinator
Dr. Alfredo Aliaga, Senior Sampling Expert,
Mr. Albert Themme, Data Processing Specialist
Ms. Kaye Mitchell, Document Production

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Ebo Duncan	Samuel Darko
K. Agyemang-Duah	S. Ofori-Attah
Sylvester Gyamfi	Bernard Oduro
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Ntsiful Abeeku-Hagan	Eugenia Attram	Joseph Ahiabor
Gifty Odoom	Olga Barkers-Woode	I.A. Akagile
Rosepearl Amarfio	Henry Doe	William Pharin
Alberta Asumah	Gideon Oduro-Nash	Anthony Arthur
Reuben Wilson	Bismack Owusu-Adjei	Francis Nyaaba
J.R. Evans	Irene Kukubor	Samuel Rockson
Samuel Tamakloe	Richard Aduonum	Richard Opare-Adjei
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