AIDS in Africa During the Nineties GHANA

A review and analysis of survey and research results

The MEASURE Project
Ghana AIDS Commission

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AIDS in Africa During the Nineties: Zimbabwe. A review and analysis of survey and research results. National AIDS Council, Ministry of Health and Child Welfare, The MEASURE Project, Centers for Disease Control and Prevention (CDC/Zimbabwe). Carolina Population Center, University of North Carolina at Chapel Hill, 2002.

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1. INTRODUCTION

The first case of HIV/AIDS in Ghana was diagnosed in March 1986 and by the end of the year the number of officially reported cases stood at 42. By the turn of the century, UNAIDS (2000) estimated that 330,000 adults and 14,000 children were HIV positive out of a population of 20 million. In 1999, 33,000 people in Ghana died of AIDS. In the same year, Ghana had an estimated 119,410 children under 15 who had lost their mother or both parents to AIDS.

Like in many other African countries, the main mode of transmission of the virus in Ghana is through heterosexual intercourse. Initially, HIV/AIDS appeared to occur mainly among women who traveled outside the country, especially commercial sex workers. Most of these women originated from the Eastern Region of Ghana, and returned from neighboring Cote d'Ivoire infected with HIV/AIDS. At that time, it was assumed by many that the disease mainly affected only prostitutes and their customers. This assumption may have aggrevated the stigmatization of HIV/AIDS. As in many other places, stigma became a major obstacle to educational programs to reduce the spread of the virus (Porter, 1994).

The first response to AIDS in Ghana was a technical committee on AIDS formed in 1985 to advise the government. This committee was to work with both the Ministry of Health and consultants from the World Health Organization (WHO) to develop a short-term plan for AIDS prevention and control. In 1987, antibody-testing and blood-screening facilities were introduced in Ghana, and by the end of 1988, a medium-term plan was developed with the WHO's Global Program on AIDS. The National AIDS/STI Control Program (NACP) was established in the Disease Control Unit of the Ministry of Health, and is responsible for the prevention, management, and control of HIV in Ghana. Activities of the NACP include educational campaigns through mass media, workshops, video shows and other channels to inform the public on how to reduce HIV related risky behaviors, especially through the use of condoms. Planned Parenthood Association of Ghana, Ghana Social Marketing Foundation, and the Ministry of Health have intensified their efforts to distribute condoms in the country.

Recently, the Ghana AIDS Commission was established. This Commission is a supra-ministerial and multi-sectoral body located in the Office of the President, and is mandated to direct and coordinate all activities to combat AIDS. The functions of the Commission include formulating national policies and strategies, providing high-level advocacy for HIV/AIDS prevention and control, providing effective leaderships in the national planning of programs, expanding and coordinating the national response, mobilizing and managing resources as well as monitoring their allocation and utilization, and fostering linkages and networks among stakeholders.

Data

This report focuses on trends in the spread of HIV infection and in AIDS-related knowledge, attitudes and sexual behavior among men and women in Ghana. The main source of data on HIV prevalence in Ghana is the national HIV/AIDS surveillance system, which primarily focuses on women attending antenatal clinics (ANC). Thus far, there are no published research studies that can provide data on HIV prevalence and incidence in the general population. Figure 1.1 shows the location of the major sites for the HIV/AIDS surveillance system. Chapter 2 provides a synthesis of trends in HIV prevalence during the nineties.

The remaining chapters describe trends in knowledge, attitudes and behavior based on national surveys and community-based research studies. The major source of data, however, is the series of Demographic and Health Surveys. Demographic and Health Surveys (DHS) are conducted in developing countries by Macro International Inc. in collaboration with in-country government and non-government agencies to assess the reproductive health status of men and women. These are nationally representative surveys,

Table 1.1 National surveys used in assessing trends in AIDS knowledge, attitudes, and sexual behavior

Surveys	DHS[1] 1988			DHS[1] 1993			DHS[1] 1998		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Women (15-49)	1,526	2,962	4,488	1,734	2,828	4,562	1,743	3,100	4,843
Men (15-59)	-	-	-	456	846	1,302	541	1,005	1,546

[1] Demographic and Health Survey

interviewing a representative sample of women and men of reproductive age. Ghana has had three such surveys that included questions on AIDS. In 1988, only women 15-49 years of age were interviewed. In 1993 and 1998, in addition to women aged 15-49, men aged 15-59 were also interviewed. Table 1.1 summarizes the sample sizes of each survey.

The socio-demographic characteristics of women and men from the DHS surveys are shown in Tables A.1 and A.2. Two-thirds of men and women in all three surveys lived in rural areas. Ghana is divided into ten administrative regions with the Northern, Upper West, and Upper East in the northern part of the country; Brong Ahafo, Ashanti, and one half of Volta in the middle area of the country, and the Western, Eastern, Central, Greater Accra, and the other half of Volta in the south. As a matter of convenience we have included Volta region in the middle geographical region in this report. The percentage of women and men in the middle and southern regions is greater than that in the northern region. The percentage decreased between 1993 and 1998 in the northern and middle geographical regions for both women and men, while it increased in the southern geographical region.

The Ghanaian government runs a 6-3-3-4 system of education, with the first 6 years corresponding to primary education. The next six years corresponds to secondary education, with the first three years of secondary education known as the junior secondary, and the following three years known as the senior secondary. Higher or university education is designed to take a minimum of four years. Information in Tables A.1 and A.2 reveals little change for women and no change for men in the proportion of those with senior secondary or higher education over the years. However, more men and women attended junior secondary in 1998 as compared with 1988 and 1993.

Figures 1.2 and 1.3 present the trends in marital status in Ghana. Women are more likely to be married than men. There was a slight decline in the proportion of married women and men between 1993 and 1998, and a correspondingly slight increase in the proportion of those who are single between both years. The proportion of divorced or widowed women and men did not change.

Figure 1.3 shows as expected that the proportion of men in polygynous marriage is lower than that of women, but the proportion of women in such marriages has decreased over time. In 1998, one-third of women were in polygynous relationships in 1988, as compared to 28% in 1993 and 23% in 1998. There was little change in the number of men in polygynous marriages, from 15% in 1993 to 13% in 1998.

Figure 1.1
Map of Ghana with the sentinel surveillance sites

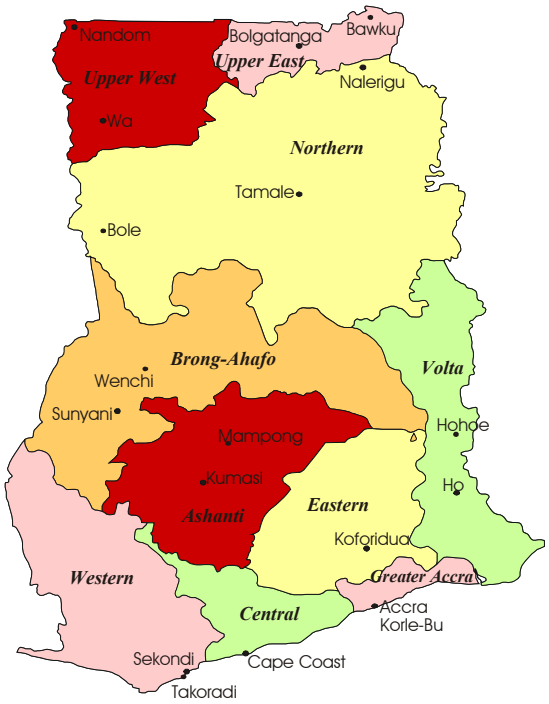


Figure 1.2
Marital status of women and men in the DHS samples

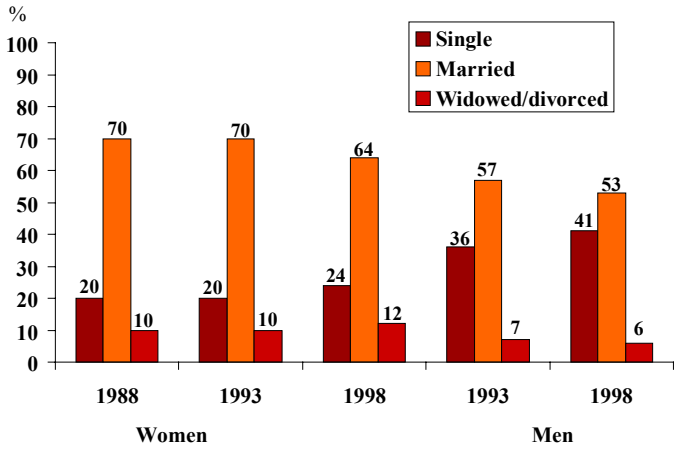
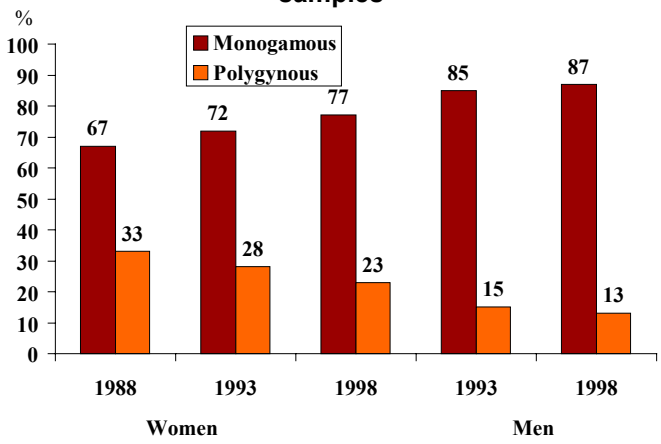


Figure 1.3
Types of marriage for women and men in the DHS samples



2. THE SPREAD OF HIV/AIDS IN GHANA

- According to estimates from sentinel surveillance data of antenatal women, the 2000 HIV prevalence rate in Ghana stood at 3.0%, showing some decline from 4.0% and 3.2% in 1998 and 1999, respectively.

- Regional estimates reveal that HIV was highest in 2000 in the Eastern region (7.8%) and lowest in the Northern region (0.7%). HIV rates declined in all the ten administrative region of the country between 1998 and 2000 except in Greater Accra, Volta and Northern Regions where HIV rates increased during the period.

- HIV rates are generally highest in the southern geographical areas which includes Eastern, Western, Central, Greater Accra, and one half of Volta Regions (3.6%), followed by the middle geographic area which includes Brong Ahafo, Ashanti, and the other half of Volta Regions (2.6%). The northern geographic areas includes Northern, Upper West, and Upper East Regions and has an HIV rate of 1.4%.

- The rate of HIV in Ghana among sex workers is very high. About 77% of sex workers who attended STD clinics in Accra in 1997 were HIV positive. In Kumasi, 5.6% of STD clinic attendees were HIV positive in 1994 and the rate increased to 9.5% in 1996 with a decline to 6.3% in 1998.

Since 1990, the Ministry of Health's National AIDS/STI Control Program has implemented a national HIV sentinel surveillance system, which focuses on women attending antenatal clinics in different regions of Ghana. The public health Reference Laboratory in Accra implements a quality control system that includes re-testing of all positive HIV tests and a sample of negative tests. Initially, only a few antenatal sites were used. In 1994, the number of sites was increased to 20 to have at least two sites in all regions of Ghana. In 1999, two sites were added in Greater Accra bringing the total to 22. The National AIDS/STI Control Program publishes annual surveillance reports, which form the basis for this chapter.

In Ghana, HIV-1 and HIV-2 have been identified as causing AIDS (Brandful et al., 1997; Neequaye et al., 1997). HIV-1 is common in other parts of the world, including Central and Eastern Africa. HIV-2 has been diagnosed almost exclusively in West Africa. This strain of HIV has been detected in countries such as Guinea-Bissau, Senegal, Gambia, Cote d'Ivoire, Nigeria, and Ghana. These two strains of HIV have been detected among pregnant women aged 15-49 in Ghana, in the antenatal surveillance system. Women who were infected with HIV-2 only are rare (e.g., in 1997 and 1998 only one clinic had more than 1% HIV-2 positive women). Dual infection with HIV-1 and HIV-2 infection is slightly more common (e.g., in 1997 and 1998 five and three antenatal clinics, respectively, reported more than 1% dually infected). Most individuals have been infected with HIV-1 alone. In this chapter rates of HIV infection refer to HIV-1, HIV-2 or both. Information on the prevalence of HIV-1, HIV-2, and HIV-1 & 2 among pregnant women attending antenatal clinics in different surveillance sites in Ghana between 1992 and 1998 is shown in Table B.1. Aggregate figures that do not distinguish between types of HIV are provided in Table B.2 and include the figures for 1999 and 2000 and for the different regions in Ghana.

National and regional spread

National HIV prevalence is calculated from regional estimates, weighted by regional population size (Ministry of Health, 2001a). Using this procedure HIV prevalence is estimated at 4.0% in 1998, 3.2% in 1999 and 3.0% in 2000. These figures indicate that HIV prevalence in Ghana has changed by 1 percentage point between 1998 and 2000, a decline of 25%.

Figure 2.1 shows the prevalence of HIV among pregnant women aged 15-49 in Ghana in 1998 and 2000. All regional estimates are based on two antenatal clinic sites, each of which had 500 antenatal clients tested. In seven of the ten regions, HIV prevalence was lower in 2000 than in 1998. In other words, the rates were higher in 2000 than 1998 in three regions, namely Greater Accra, Volta and Northern regions.

The rates of infection show variations between and within the three broad geographical areas. In 2000, overall the northern sector reported the lowest HIV rates (1.4%), while the highest was recorded in the southern zone (3.6%, average for the whole zone). The HIV prevalence rate for the middle zone in 2000 was 2.6%. The variations in HIV rates within the three geographical areas by sentinel sites are further described below.

Northern geographic area

This geographic area has recorded the lowest HIV prevalence. Figure 2.2 provides the trends in prevalence for sites within the northern area of the country. In Northern region, Tamale is an urban site, and Nalerigu is classified as a semi-rural area. HIV prevalence has been about 1% during 1994-2000, fluctuating between 0.2 and 1.6%. There is little difference between the two sites. A third site in Bole (semi-rural) reported that, in 1994 and 1995, 3.8% and 2.7% of individuals tested were infected respectively, but no data were collected at this site after 1995.

HIV surveillance in the Upper West region is based on sites in urban Wa and Jirapa a semi-rural settlement. In most years during 1994-2000 prevalence was higher in the urban site, but in 2000 there was little difference between the two sites as the rates decreased to 1.4% for Wa site and 1.5% for Jirapa site. The highest prevalence figures were observed in 1994 (3.0% for Wa and 2.5% for Jirapa) and 1996 (1.8% for Wa and 3.0% for Jirapa) in both sites.

In Upper East region, the differences in HIV prevalence between the two sites, Bolgatanga (urban area) and Bawku (semi-rural area) were small during 1994-2000. In 1998 HIV peaked at 3.0% and 3.6% in the urban and semi rural site respectively, but in 2000 the corresponding figures were 1.6% and 1.0%.

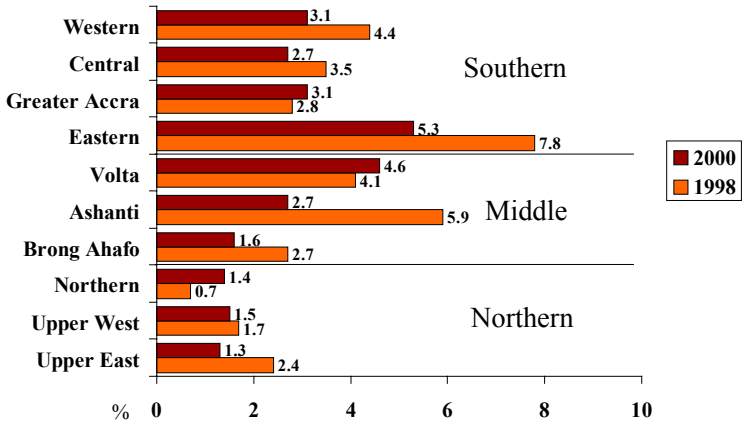
Middle geographic area

Figure 2.3 shows the rates in the middle area. Brong Ahafo region is the least affected area in the middle geographic zone. In 2000, HIV prevalence was 2.1% in the urban site (Sunyani) and 1.0% in the semi-rural site (Wenchi). This was the lowest rural estimate from 1994 to 2000, and was close to the lowest urban estimate in 1997.

Ashanti region has higher levels of HIV infection. In Kumasi (urban), HIV prevalence increased gradually between 1994 and 1997 when a peak of 6.8% was observed, followed by a decline to 3.8% in 2000. The HIV prevalence trends in Mampong (semi-rural area) followed a very similar pattern and, in 2000, declined to its lowest level of 1.6% since 1994.

The northern part of Volta region falls within the middle geographic area, while the southern part falls within the southern area. The urban site in the region is located at Ho, while the semi-rural site is located at Hohoe. In 1994, the HIV prevalence rates at Ho and Hohoe were similar, 2.4% and 2.3 percent, respectively. A gradual increase to 4-5% occurred in both sites during 1994-2000.

Figure 2.1
HIV Prevalence among antenatal women by region, Ghana, 1998 and 2000



Source: Ghana Ministry of Health, 1998 and 2000

Figure 2.2
HIV prevalence among antenatal women in northern area, 1994-2000

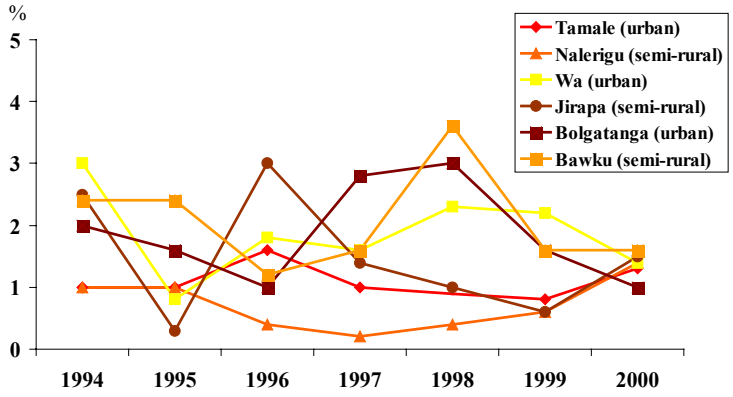


Figure 2.3
HIV prevalence among antenatal women in middle area, 1994-2000

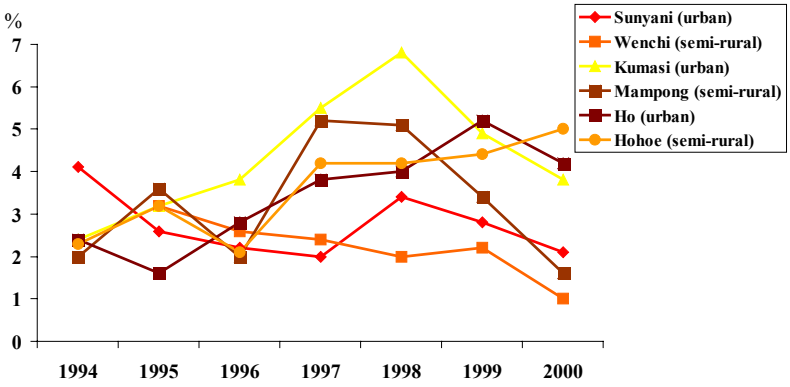


Figure 2.4
HIV prevalence among antenatal women in Greater Accra, 1994-2000

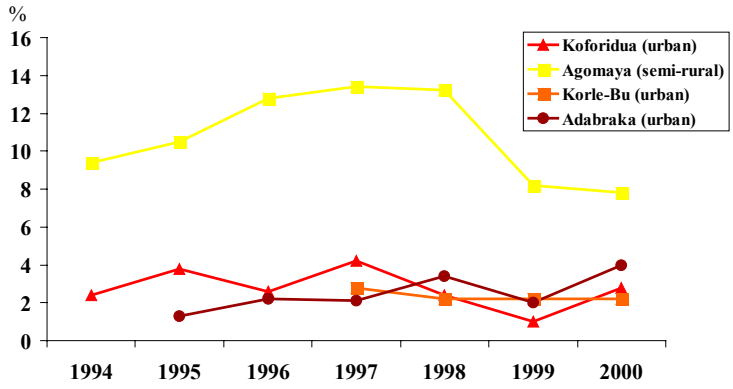


Figure 2.5
HIV prevalence among antenatal women in Central and Western regions, 1994-2000

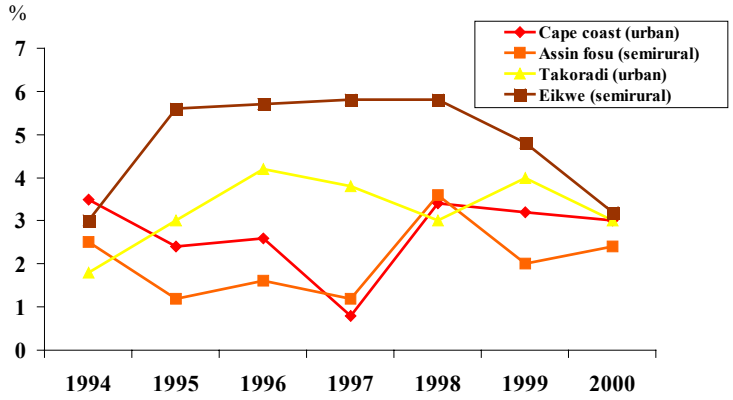
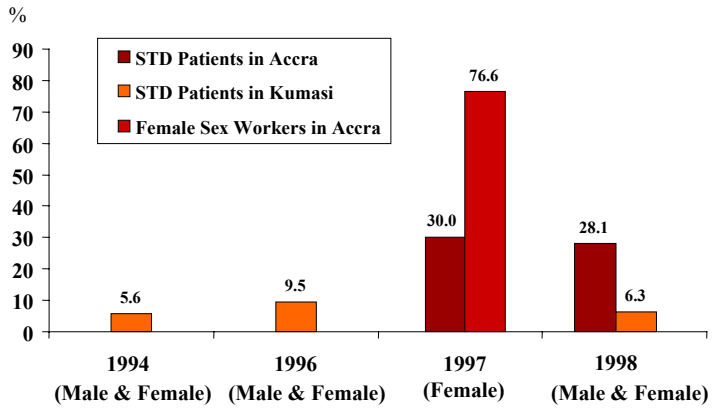


Figure 2.6
HIV prevalence among high-risk populations



Southern geographical area

It was in the Eastern region that the first HIV cases were diagnosed in Ghana, mainly among commercial sex workers returning from Cote d'Ivoire. Figure 2.4 reveals marked differences in the HIV prevalence rates between the urban and rural surveillance sites in the Volta region. HIV prevalence in Agomaya declined from 13.2% in 1998 to 7.8% in 2000, while that in Koforidua increased slightly from 2.4% in 1998 to 2.8% in 2000.

HIV prevalence in Greater Accra region is relatively low. In 1995, the HIV prevalence at a surveillance site in Adabraka was 1.3% in 1995 and increased to 4.0% in 2000. Data from the second site, Korle-Bu, for 1997-2000 show no increase and a level of 2.2% in 2000.

Figure 2.5 shows that HIV prevalence in the urban and semi-rural surveillance sites in the Central region was 2-4% in most years, with a low in 1997. In the Western region, the prevalence in 2000 was also about 3%, which was lower than in the years before.

HIV prevalence among some high risk population sub-groups

The national HIV/AIDS surveillance system also provides data on HIV prevalence for some high-risk population groups. However, this information is limited and does not generally provide adequate information on trends. It is also limited to Accra and Kumasi, the two leading cities in the country.

Figure 2.6 shows the HIV prevalence among STD clinic patients between 1997 and 1998 in Accra, the capital of Ghana. In 1997, about 30% of the female STD clinic attendees were infected with HIV. The data provided in 1998 were both for male and female patients, and 28% of the patients were also infected with HIV in that year.

Figure 2.6 also provides information on HIV infection among STD clinic attendees in Kumasi between 1994 and 1998. The HIV prevalence for both men and women combined was 5.6% in 1994, and increased to 9.5% in 1996. The trend shows a decline in HIV prevalence from 9.5% in 1996 to 6.3% in 1998. Of the 368 sex workers attending an STD clinic in Accra in 1997, almost every four out of five sex workers who attended the clinic (77%) were infected with HIV.

Risk of HIV among female long-distance traders

Anarfi et al. (1997) examined the risk of contracting HIV among women traders in Techiman and Yeji in Brong Ahafo region of Ghana. Using a combination of survey and focus group discussions, the study found that women who travel long distances to different markets to purchase items for sale are at high risk of contracting HIV. The study reported that many of the traders responded favorably to sexual advances by men in the places where they traveled to purchase items for sale.

Some Unique Features of HIV/AIDS Spread in Ghana

Age structure of AIDS Patients

The majority of AIDS patients in Ghana are persons aged 15-49 years (more than 90%), with the peak age groups being 25-34 years and 30-39 years. A small proportion of AIDS patients are aged 50 and above. AIDS cases among those aged 0-4 and 5-14 is even fewer than those aged 50 and above, and the age group 5-14 is seen as a window of hope in Ghana if the children can be taught how to protect themselves from HIV infection.

Polygyny and HIV infection in Ghana

Polygyny has the potential of reducing the level of extra-marital sexual networking for males therefore having a negative effect on HIV transmission. On the other hand, because of multiple sexual networks in polygynous households, polygyny may have a positive effect on HIV transmission. In Ghana, regions with the highest rates of polygyny have the lowest rates of HIV infection. Eastern region with the lowest rate of polygyny has the highest rate of HIV infection, while Northern region with the highest level of polygyny (44%) has the lowest rates of HIV infection (0.05%) (Oppong, 1998). There could also be other socio-cultural factors that influence both polygyny and the probability of HIV infection.

3. TRENDS IN KNOWLEDGE ABOUT HIV/AIDS

- There was a high awareness of AIDS in the 1990s in Ghana. In 1993, 95% of women and 96% of men had heard of AIDS. The figure for women increased to 97% in 1998, while virtually all men had heard about AIDS in the same year. Awareness about other STDs is lower, but showed some increase during the 1990s. Knowledge about mother-to-child transmission was also high and showed a slight increase from 82% (1993) to 88% (1998) for women and 85% (1993) to 89% (1998) for men.

- Slightly over two-thirds of women and men knew that an HIV-infected person could look healthy, with a small increase in correct knowledge occurring between 1993 and 1998. Although the data on ways that HIV could be transmitted did not allow for an assessment of trends, when the question was prompted in 1993, not many people knew that HIV could not be transmitted by mosquitoes (20% for women and 28% for men).

- Other information on knowledge about HIV/AIDS did not permit any assessment of trends. However, more than 80% of both men and women indicated that they knew how to avoid AIDS, and, in 1998 when prompted, at least 80% knew that one could get AIDS by not using a condom. The proportion of those who thought they were at risk of contracting HIV in Ghana in 1998 was low: 32% of men and women. Women and men in urban areas are generally more knowledgeable about AIDS and how to avoid it than those in rural areas. In 1998, 77% of women and 86% of men in rural areas knew how to avoid AIDS, compared to 88% of women and 92% of men in urban areas.

One of the early responses to the HIV/AIDS problem in Ghana included raising awareness about it. Dissemination of health information in Ghana is one of the priorities of the Ghana Ministry of Health. As noted earlier in this report, the Ministry, through the activities of NACP, has used different media sources to create awareness about HIV/AIDS in order to reduce the risk of contracting the disease.

This chapter uses information from the Demographic and Health Surveys and other data sources to ascertain trends in knowledge about HIV/AIDS during the nineties. Questions have differed between the surveys, making it difficult to assess whether or not changes have taken place. In areas where this is the case, the phrasing of questions will be detailed.

Heard about HIV/AIDS: awareness nearly universal

Studies in Ghana immediately after HIV was first detected in March 1986 reveal a high awareness about the disease in the country. For example, Neequaye et al. (1991) studied 267 persons living in various regions of Ghana. All except one were aware of AIDS and 97% knew it was fatal.

Figure 3.1 and Appendix Table C.1 show the levels of awareness of AIDS in Ghana nationally, during the nineties. In 1993, 95% of women aged 15-49 stated that they had heard of AIDS, while 96% of men aged 15-59 responded similarly. In 1998, this increased to 97% of women and almost all the men (99%). In

1993, all men and women in the urban areas had heard about HIV/AIDS, while a few individuals in rural areas (8% of women and 6% of men) had not. By 1998, the proportion of women and men in rural areas who had not heard of AIDS decreased to 5% and 2%, respectively.

Most people know ways to avoid HIV/AIDS

A question on further knowledge about ways an individual can avoid HIV/AIDS was asked only in the 1998 Demographic and Health Survey. In Figure 3.2, the majority of men and women said that they knew of ways to avoid AIDS; men (88%) were somewhat more likely to say they knew of a way than women (81%). Urban men most commonly reported that AIDS could be avoided (92%), while rural women were least knowledgeable (77%). Eighty-six percent of rural men and 88% of urban women said that a person could do something to avoid AIDS.

More people know about mother-to-child transmission

It is evident from Figure 3.3 that most women and men in Ghana know about the vertical transmission of HIV. The questions on vertical transmission were expressed differently in 1993 from 1998. In 1993, they were asked how AIDS was transmitted; responses were unprompted. They were also asked directly whether a woman can give birth to an infected child. If they mentioned mother-to-child transmission in the first question or responded correctly to the second, they were considered knowledgeable of vertical transmission. In 1998, they were asked whether a mother can give birth to an infected child and whether a child can be infected through breast-feeding. Those who responded correctly to one of the questions were considered to know about vertical transmission. In 1993, 82% of women and 85% of men knew that HIV could be transmitted from mother to child. In 1998, the proportion of women and men who knew the same increased to 88% and 89% respectively. Among both men and women, knowledge is slightly higher in urban than in rural areas

Misconceptions about HIV/AIDS

Knows infected person can appear healthy: evidence for a slight increase in knowledge

Figure 3.4 reveals that about one out of three women and one out of five men in Ghana do not know that an HIV-infected person can appear healthy. Since it may take years between infection and the appearance of symptoms, this aspect of knowledge is very important. The trend showed a slight increase between 1993 and 1998 in the proportion of men (77% to 82%) and women (70% to 75%) who knew that an HIV-positive person can appear healthy. Urban women and men were more knowledgeable than rural women and men. However, the gaps in knowledge between men and women in urban and rural areas were reduced between 1993 and 1998, showing improvement in knowledge in the rural areas.

The relationship between some socio-demographic variables and knowledge about whether an infected person can appear healthy are shown in Table 3.1. In 1993, knowledge was higher among more educated people, younger and middle-aged women, and middle-aged and older men than less educated people, older women, and younger men. However, knowledge was lowest among the residents of Upper West (30%), Upper East (52%), Volta (56%) and Northern (57%) regions. Although there was improvement in knowledge across all socio-demographic variables between 1993 and 1998, the patterns were similar in 1993 and 1998, except for age for women. In 1998, more older and middle-aged women reported knowledge about infection than in 1993. A multivariate analysis revealed that these differences are significant except for marital status, indicating that there were no significant differences in knowledge about an HIV-infected person appearing healthy between single, married, and widowed/separated individuals.

Figure 3.1
HIV awareness: has heard of AIDS, women and men, 1993 and 1998

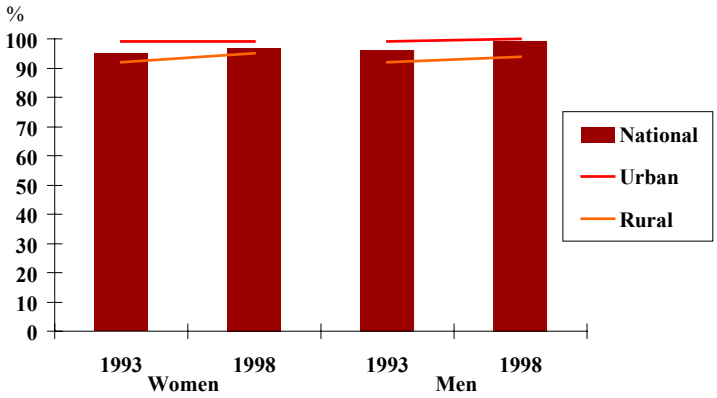


Figure 3.2
Knows ways to avoid AIDS, women and men, 1998

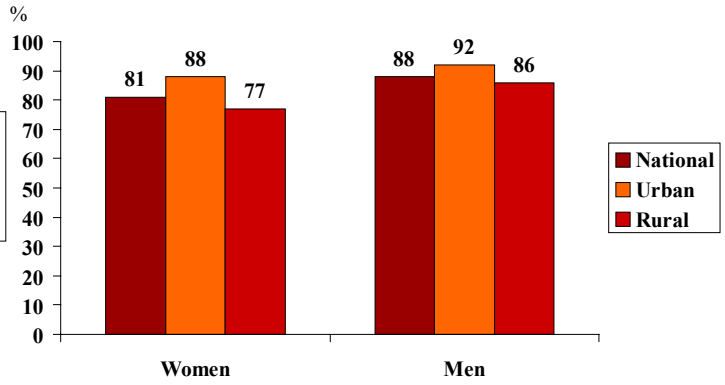


Figure 3.3
Mother-to-child transmission, women and men, 1993 and 1998

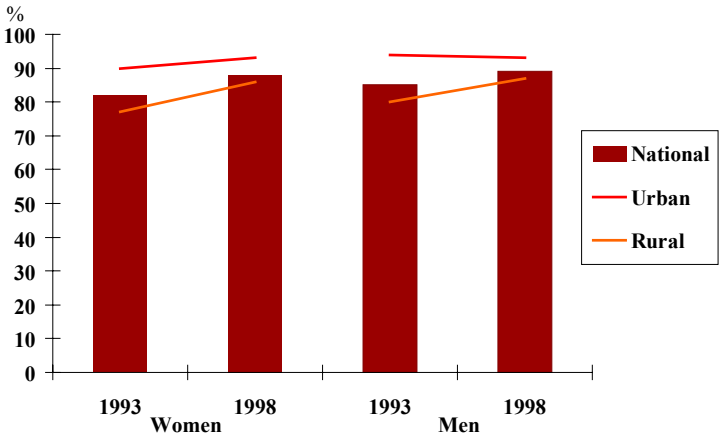


Figure 3.4
Infected person can appear healthy, women and men, 1993-1998

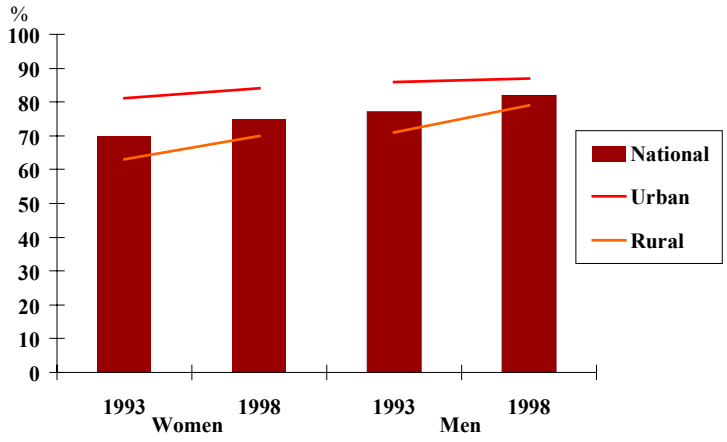


Table 3.1 Relationships between some socio-demographic variables and knowledge about whether an HIV infected person can appear healthy.

Variables	1993 (%)		1998 (%)	
	Women	Men	Women	Men
Place of residence				
Urban	81	86	84	87
Rural	63	59	70	79
Education				
Non/Primary	60	63	65	63
Jss/Secondary +	80	83	84	89
Marital status				
Single	74	75	72	80
Married	68	78	76	83
Widowed/separated	75	76	76	86
Current age				
15-19	70	66	67	73
20-29	73	81	77	85
30-39	70	80	79	86
40-49(40-59 for men)	64	75	72	81
Region of residence				
Western	69	78	73	86
Central	78	87	75	83
Greater Accra	82	92	84	86
Volta	56	55	66	77
Eastern	81	86	73	85
Ashanti	72	76	88	90
Brong Ahafo	78	90	79	81
Northern	57	64	40	55
Upper West	30	53	47	47
Upper East	52	58	66	81

Knows HIV cannot be transmitted by mosquito

In 1993, women and men were asked, "Do you think you can get AIDS from a mosquito?" In 1998, the respondents were asked if there is anything a person can do to avoid getting AIDS, and those who said yes were asked, "What can a person do?" One of the options was "avoid mosquito bites." Because individuals were prompted with a "yes/no" answer in 1993 and asked to give a spontaneous answer in 1998, a comparison between the two years must be evaluated with caution.

In 1993, 28% of men and 20% of women said that HIV could not be transmitted by mosquito (Figure 3.5). The urban-rural results reveal that in 1993, both women and men living in urban areas were more likely to think they could not get AIDS from mosquitoes than those living in the rural areas. Only 0.4% of the women mentioned "avoid mosquito bites" in 1998; among men the proportion mentioning this was also very low, at 0.5% (not shown).

Knowing how to reduce the risk of sexual transmission: men are more knowledgeable

The questions used to assess knowledge about how to reduce the risk of sexual transmission were also inconsistent between surveys. In 1993, people were asked, "Do you think that you can get AIDS from not using a condom?" In 1998, people were asked what a person could do to avoid AIDS. "Use a condom" and "having only one sex partner" were among the options. Again, people were expected to mention the options spontaneously. Information on having one sexual partner was available only for 1998. Therefore, assessing an increase or decrease in this type of knowledge was not possible.

In 1993, when the question for condom use was prompted, most men (89%) and women (84%) thought that one could get AIDS by not using a condom (Figure 3.6). Figure 3.6 also shows considerable difference between urban and rural residence in knowledge about the use of condoms to avoid AIDS. In 1993, in urban areas, 91% of women and 94% of men knew that one could get AIDS by not using a condom, compared to 80% of women and 86% of men in rural areas. Residents of urban areas were also more knowledgeable compared to rural residents in 1998 (Figure 3.7).

In the unprompted question in 1998, men (40%) were more knowledgeable than women (22%) about the use of condoms to reduce the risk of HIV/AIDS (Figure 3.7). In 1998, less than two-thirds of the men (60%) and women (63%) stated that sticking to one faithful partner was a way to avoid AIDS (Figure 3.8). Again, more women and men in urban areas than in rural areas knew that sticking to one sexual partner was important to reduce HIV transmission (Figure 3.8).

Risk perception: most men and women do not feel at risk

A question on the perception of risk of becoming infected with HIV/AIDS was asked only in 1998. Both men and women who were aware of AIDS were asked if they felt they were at small, moderate or great risk of contracting the disease. Figure 3.9 shows that only about one-third of women and men (32% each) felt that they were at any level of risk of being infected with HIV. Further, both men and women in urban areas were more likely to feel some sense of vulnerability than those in rural areas. When the effects of education, region of residence, current age and marital status were controlled in a multivariate analysis, the effect of place of residence was still significant in the model for women, but not for men.

Knowledge of other STDs and risk perception: knowledge level less than that of HIV/AIDS

Figure 3.10 shows that people were more aware of HIV/AIDS than other sexually transmitted diseases (STDs). Only 56% of women and 70% of men had heard of other STDs in 1993, which only increased to 62% of women and 74% of men in 1998. As in the case of HIV/AIDS, those in urban areas were more likely to know about other STDs compared with those in rural areas. There was no difference in the proportions of men and women who felt that they were at the risk of becoming infected with other STDs (Figure 3.11). More women and men in urban areas than in rural ones felt that they were more at risk of being infected by other STDs.

Sources of knowledge about HIV/AIDS: an increase in the number of people reached through electronic/print media

Respondents in the DHS who had heard about HIV/AIDS were asked about the sources of their information. In 1993, they were asked, "From which sources of information or persons have you heard about AIDS in the last month?" And in 1998, they were asked, "From which sources of information have you learned most about AIDS?" Several sources were mentioned. Figure 3.12 shows the proportion of those who heard about AIDS through television, radio, newspaper/magazines, and pamphlets/posters. The proportion of men and women who heard about HIV/AIDS in 1993 through electronic/print media were 83% and 70%, increasing to 87% and 80%, respectively, in 1998. The percentage of men and women exposed to electronic/print media was considerably higher in urban than rural areas, and there was no evidence for a reduction in the gap between urban and rural areas in 1998 when compared to the gap in 1993 (Figure 3.12).

Knowledge about HIV/AIDS among some populations at high risk of HIV/AIDS

Research International (RI) and Family Health International (FHI) in collaboration with the NACP conducted a behavioral surveillance survey in 2000. Among female sex workers in Accra and Obuasi, male police in Accra, and male miners in Obuasi, the following was found:

- Comprehensive knowledge of HIV-prevention methods among sex workers in Accra (58%) and Obuasi (41%) was very low. The proportion of sex workers in Accra (44%) and Obuasi (26%) who had no misunderstandings about AIDS was very low. Sex workers in Obuasi were less likely to know about mother-to-child transmission and about the availability of HIV testing (71% and 45%, respectively) than those in Accra (82% and 59%, respectively).

- Comprehensive knowledge of HIV-prevention methods among male police in Accra was low (57%). The proportion with no misunderstandings about AIDS was 67% .

- Comprehensive knowledge was also low among male Obuasi miners (55%). The proportion with no misunderstandings about AIDS was 57% .

Source: Research International and Family Health International (2001).

Figure 3.5
Does not think HIV can be transmitted by mosquito: Women and Men, Ghana, 1993 (prompted question)

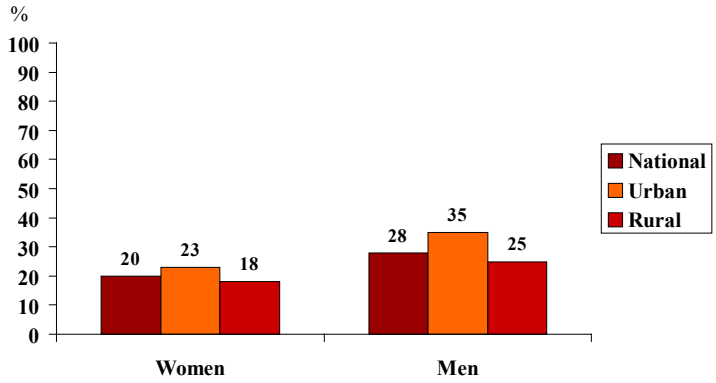


Figure 3.6
Can get AIDS by not using a condom, women and men, Ghana, 1993

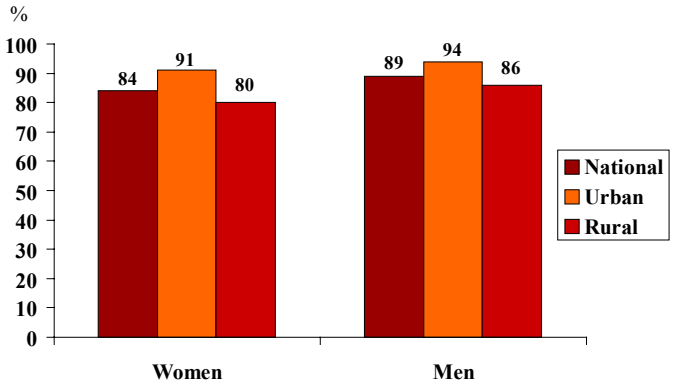


Figure 3.7
Can avoid AIDS by using a condom, women and men, Ghana, 1998

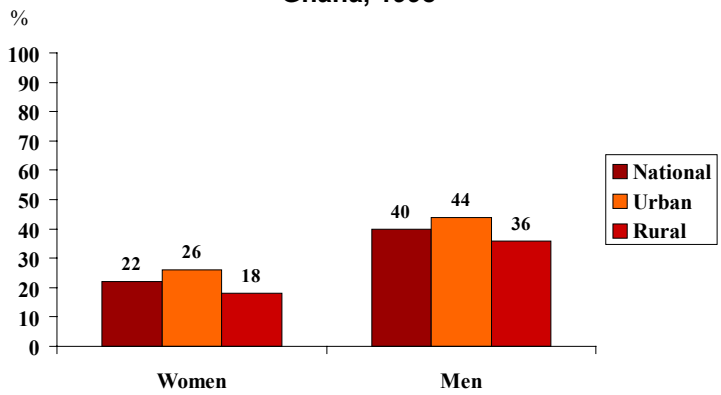


Figure 3.8
AIDS can be avoided by sticking to one partner, women and men, Ghana 1998

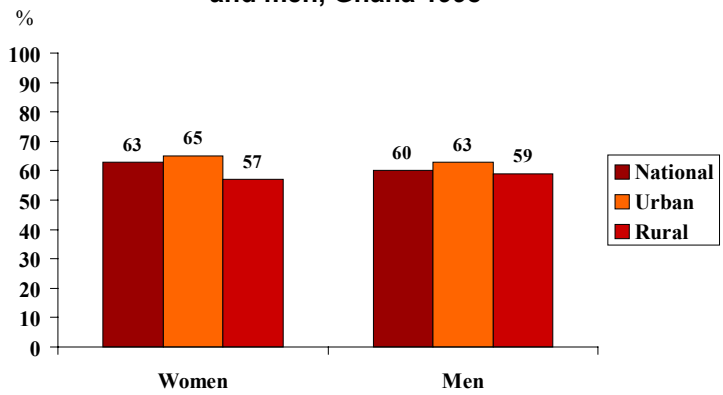


Figure 3.9
Perception of risk for HIV infection, women and men, 1998

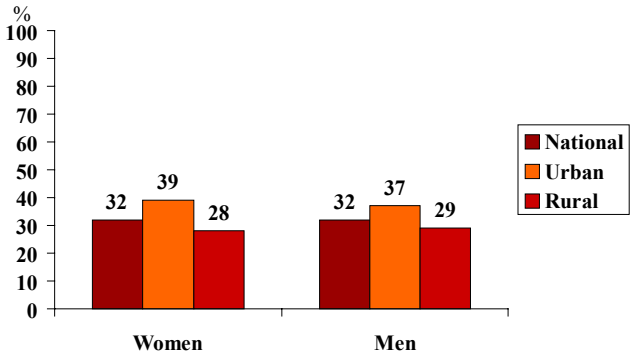


Figure 3.10
Heard of other STDs, women and men, 1993 and 1998

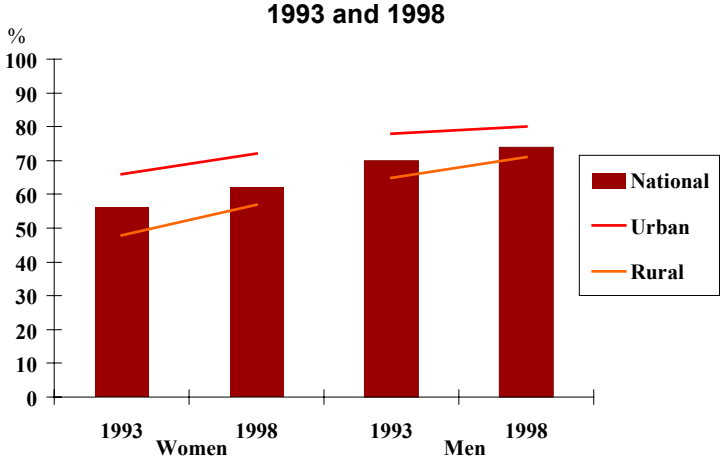


Figure 3.11
Feels at risk for other STDs, women and men, 1998

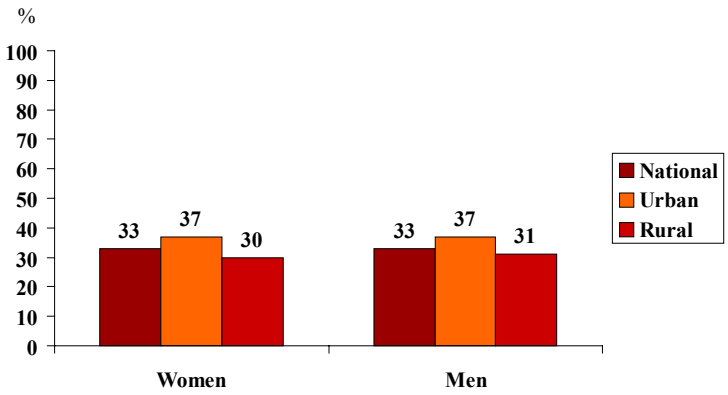
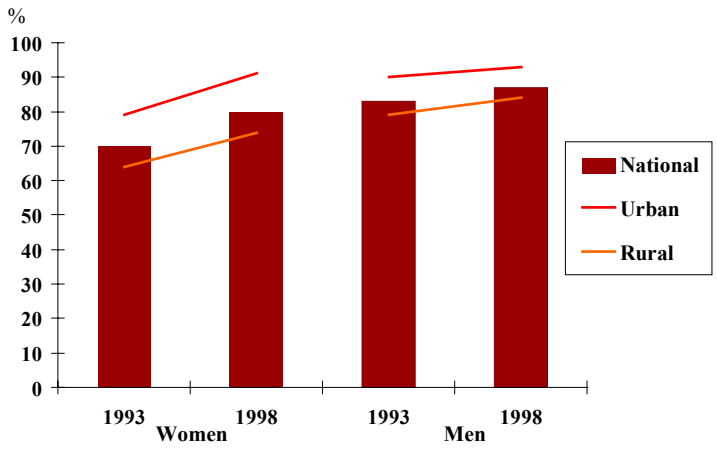


Figure 3.12
Heard of AIDS through electronic/print media, women and men, 1993 and 1998



4. SEXUAL BEHAVIOR

- Between 1993 and 1998, there was a substantial increase in the proportion of men who abstained from sex in the last year or last month preceding the survey in Ghana, while the proportion of women who abstained from sex remained virtually unchanged over the same period.
- About one in every three Ghanaian men had multiple partners in the last year; among those married or cohabiting, one in every four men had an extra-marital partner in the last year. Multiple partnerships are most common among single men, men who are widowed/separated, and younger men. There is no variation in the frequency of multiple partnerships by place of residence, level of education, or marital type of marriage (polygamous or monogamous).
- There was an increase in coital frequency in the last four weeks among women between 1988 and 1993. However, the rate of sexual intercourse was lowest among younger women, single women, and women who were widowed/separated. There was no variation in coital frequency by level of education and between polygynous and monogamous women.
- Available evidence suggests there is extended postpartum sexual abstinence in Ghana, and there is no evidence for a decline in the level of postpartum abstinence during the 1990s.

In this chapter, three indicators are used to indicate the sexual behavior of men (15-59) and women (15-49). The first measures sexual abstinence. The second indicator measures multiple partnerships, while the last indicator of sexual behavior examines coital frequency in the last four weeks before the survey.

Sexual abstinence: more men report abstinence

Information on sexual abstinence is available for the three national Demographic and Health Surveys. Abstinence may be connected with the postpartum period, spatial separation of the partners, deliberate abstinence, illness of one of the partners or not having a partner. In addition, there is abstinence associated with postponement of first sex. This will be discussed in Chapter 6 on adolescents.

Figures 4.1 and 4.2 present the proportion of men and women who did not engage in sex in the month preceding the interview and in the last year.[1] Among women 15-49, 25-30% did not have sex in the last year, with little change between the three surveys. Among men 15-59, the proportion abstaining in the last year increased from 21% in 1993 to 34% in 1998. A large proportion of men and women said they did not have sex in the month preceding the interview. For instance, in 1998, 58% of men 15-59 and 59% of women 15-49 did not have sex in the months preceding the survey. This was slightly higher than in 1993 for both sexes. In 1988, however, 63% of women 15-49 did not have sex within one month prior to the survey.

Disaggregating the results by current age, Figures 4.3 and 4.4 reveal that younger women (15-19) were more likely to abstain from sex than older women (20-49). The results in Figures 4.5 and 4.6 also show

1. In computing those who did not have sex in the last year, women who reported that they had not had sex since their last birth and whose last birth was less than 12 months before the survey were coded as having had sex in the last 12 months.

that abstinence was highest among younger men (15-19) followed by those aged 20-29, and lowest among those aged 30-59. There was significant increase in abstinence between 1993 and 1998 for those in the 20-29 age group and little or no change for the other age groups.

Multiple partnerships: higher among single men and those widowed or separated

Information on multiple partnerships was only available for men in 1998. Figure 4.7 shows that for all people who have ever had sex, about one in every three Ghanaian men (37%) had one or more non-regular sex partners in the past year. Among married/cohabiting men (Figure 4.8), about one in every four Ghanaian men (24%) had sex with a person other than their spouse in the past year.

The results show no variation in the occurrence of multiple partnerships between urban and rural residents. However, single men (65%) and men who were widowed/separated (67%) were more likely to have one or more non-regular partner than those who were married (24%) (not shown). The proportion of men with two or more non-regular partners was 21%, 31%, and 8% for single, widowed/separated, and married men, respectively. There are no differences in the proportions of monogamous and polygynous men who had one or more non-regular partners, but 12% and 8% of polygynous and monogamous men, respectively, had two or more non-regular partners. The results also indicated that having one or more non-regular partners or two or more non-regular partners is highest among younger men aged 15-19 (71% and 17%, respectively) and those aged 20-29 (46% and 18%, respectively), compared with older men. There is no difference in the number of multiple partnerships by level of education.

Non-regular partnerships among high-risk population groups in the BSS survey in Ghana

The BSS survey conducted by RI and FHI reported multiple partnerships among male policemen in Accra and male miners in Obuasi. Twenty-five percent of miners and 29% of police surveyed reported having had sex with a non-regular partner in the past 12 months; only a small proportion among the police (3%) and miners (7%) reporting having sex with a commercial sex partner.

Source: Research International and Family Health International (2001).

Figure 4.1
No sex during the last month women and men, 1988-98

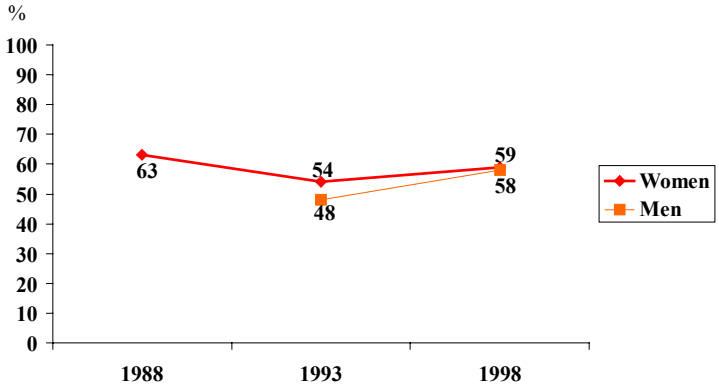


Figure 4.2
No sex during the last year women and men, 1988-98

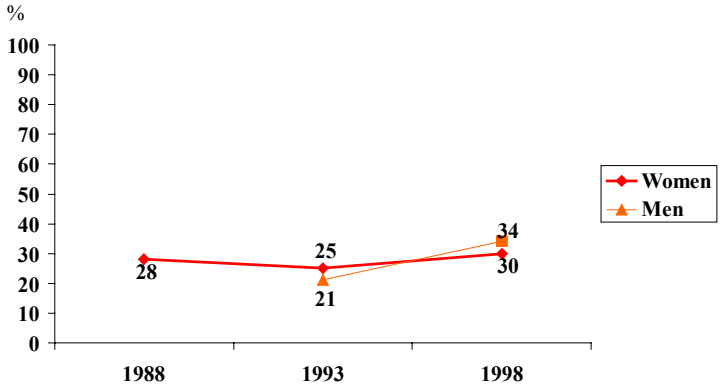


Figure 4.3
No sex during the last month by current age, women 1988-98

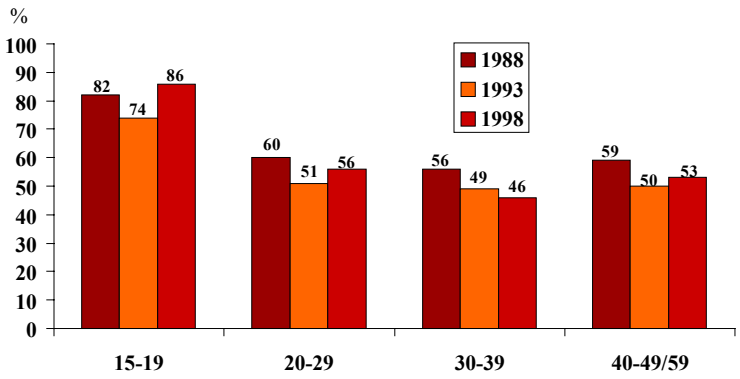


Figure 4.4
No sex during the last year by current age, women 1988-98

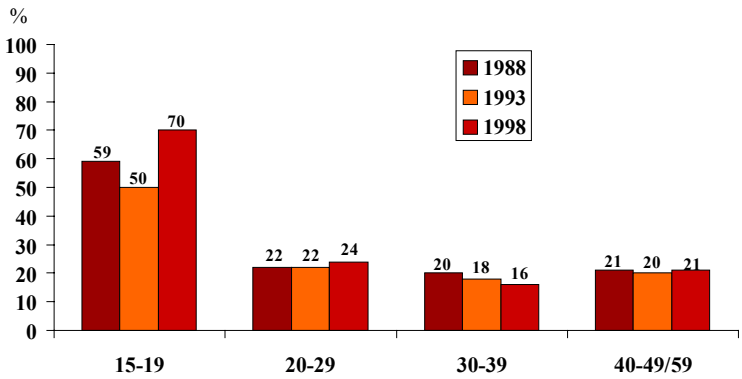


Figure 4.5
No sex during the last month by current age, men 1993 and 1998

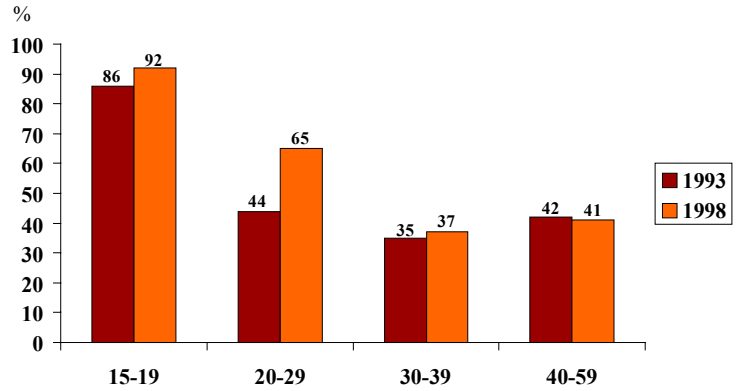
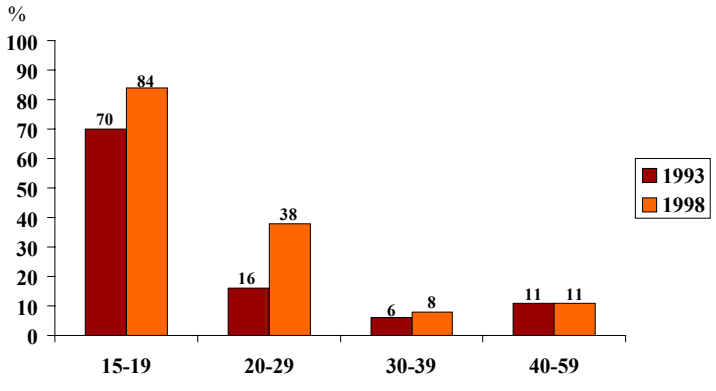


Figure 4.6
No sex during the last year by current age, men 1993 and 1998



Findings from other research on sexual behavior within marital unions

- In Ghana, marriage confers on a husband the exclusive sexual right and claims to domestic services of the wife. However, the reverse is not always the case. Therefore, it is very difficult for a woman to refuse her husband sex, and her refusal is understood as encouraging her husband to have extramarital relations (Awusabo-Asare et al., 1993).

- There are ethnic differences in the extent to which female extramarital relationships are condoned in Ghana. For example, such is the case in the Akan ethnic group, a matrilineal society, but payment of adultery fees exists. On the other hand, among the Ewe ethnic group in Southern Ghana, female extramarital relationships are treated with legal and religious sanctions (Awusabo-Asare et al., 1993).

- Economic dependence of women on men reduces their bargaining power in marital and sexual relations in Ghana (Ankomah, 1994). Economic independence reduces traditional dominance and supervision by the husband. However, poor economy resulting in irregularity in payments and employment in low-paying jobs in the formal sector has continued to erode women's control over their sexuality in the country (Awusabo-Asare et al., 1993).

Coital Frequency

The information in Figures 4.9 through 4.11 provides the trend in coital frequency for women between 1988 and 1993. Women in the DHS were asked how many times they had had sexual intercourse in the last four weeks in 1988 and 1993. The results reveal an increase in coital frequency for women in different socio-demographic groups between 1988 and 1993. However, there was no variation in coital frequency by level of education in both years. On the other hand, the frequency of sexual activity was highest among women who were married, while the level of coital frequency was similar for single women and those were widowed/separated. The results also reveal no significant differences in the rates of coital frequency between polygynous and monogamous women. Figure 4.11 shows that coital frequency was lowest among women in the 15-19 age group in 1988 and 1993. In 1993, only 5% of those women had had sex four or more times in the last four weeks, compared to 16%, 15% and 11% for women in the 20-29, 30-39, and 40-49 age groups, respectively.

Pattern of postpartum sexual abstinence

Traditionally, women are expected to abstain from sex after childbirth to ensure their recuperation and their child's survival. However, men are not expected to abstain during this time. As such, they are permitted to seek sexual satisfaction outside marriage or engage in the practice of polygyny. This has started a discussion on the implications of long postpartum sexual abstinence for females on spread of sexually transmitted diseases, including HIV.

Information from the Demographic and Health Survey report reveals that despite the problem of HIV/AIDS in Ghana, the length of postpartum abstinence remained the same in the country in the 1990s. In 1993, the median length of postpartum abstinence was nine months, while the figure in 1998 was 8.5 months (Ghana Statistical Service and DHS, 1994 and 1999).

Postpartum Sexual Abstinence

Awusabo-Asare (1997) investigated the pattern of postpartum sexual abstinence in Ghana in the era of AIDS, between March – April 1992. The study involved a sample of 1,364 women and 1,034 men in three regions of the country (Eastern, Volta, and Northern regions), representing areas with high, medium, and low levels of HIV prevalence. His findings include

- About 50% of female respondents had at least 12 months of postpartum abstinence; the mean duration was 13.8 months. This is similar to findings from the Ghana Fertility survey of 1979/80, showing no change in postpartum abstinence over time.
- Only 22 percent of the women who responded to questions about their partner thought that their partner abstained. About one-quarter (24 percent) of the women knew their partner had a girlfriend, while another 28% either caught their husbands with another woman, did not trust their husbands, or realized from their actions that they did not abstain.
- Men were more likely than women to make the move to resume sex. Therefore, while women wanted to abstain, men were more likely to ask for sex early.
- There were ethnic differences in the duration of postpartum sexual abstinence. The duration of female postpartum abstinence was lowest among the Fante (9.7 months), Twi (10.6 months) and other Akans (13.3 months) and highest among the Mole-Dagbani (17.3 months) and Ewe (14.2 months).

Figure 4.7
Multiple partnerships during the last year, among men who ever had sex, 1998

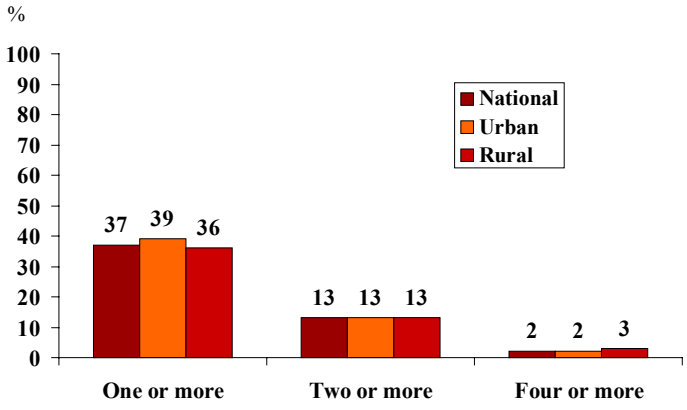


Figure 4.8
Married men who had sex with person other than spouse, 1998

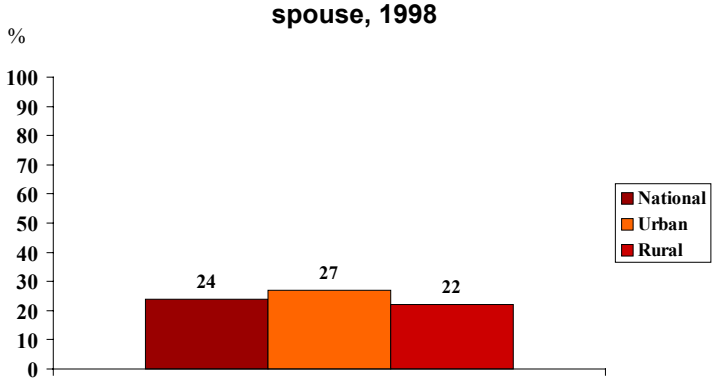


Figure 4.9
Coital Frequency: last 4 weeks, women, 1988

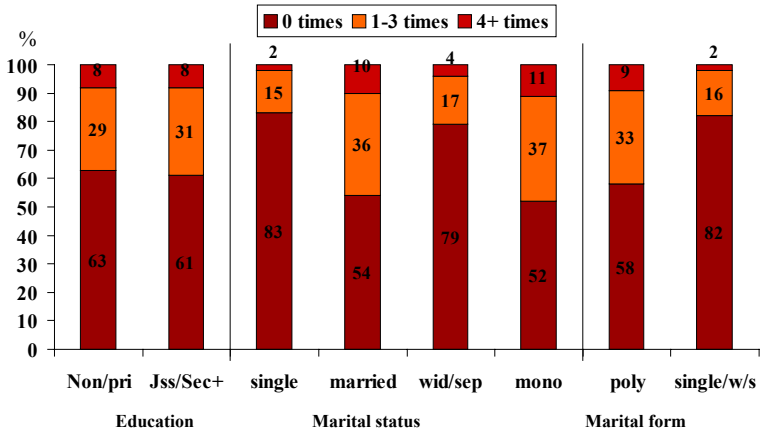


Figure 4.10
Coital Frequency: last 4 weeks, women, 1993

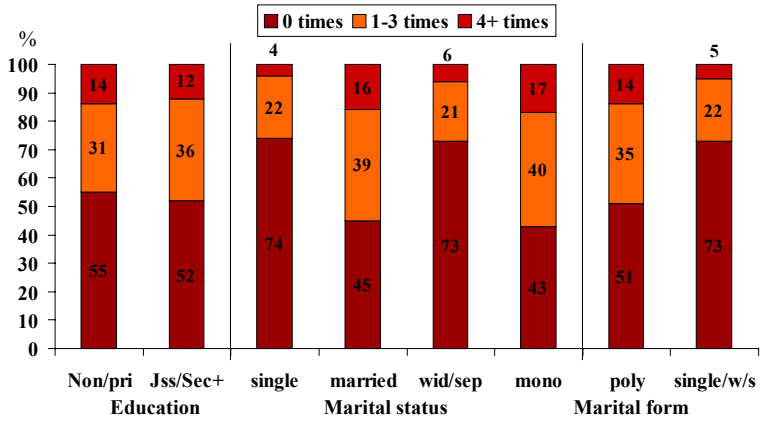
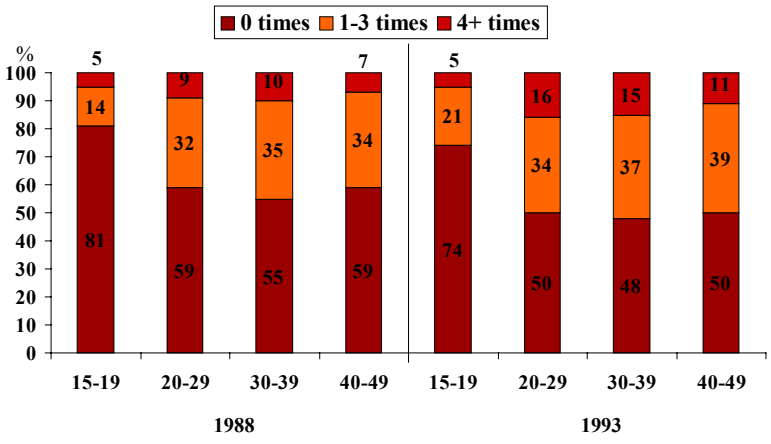


Figure 4.11
Coital Frequency by current age: last 4 weeks, women, 1988 and 1993



5. KNOWLEDGE AND USE OF CONDOMS

- There was a considerable increase in awareness of the male condom among men and women during the nineties. By 1998, virtually all men and more than four out of five women knew about male condoms. Knowledge of where to get condoms was far lower in 1998 (66% and 77% for women and men, respectively).
- Women in rural areas were less likely to be aware of condoms and know a source than those in urban areas. By 1998, there were no differences in the awareness of condoms between men in urban and rural areas; these differences still existed between urban and rural women.
- Condom use was generally low in Ghana, but increases were observed in the 1990s for men and women. Men were more likely to use condoms than women, and condom use in urban areas was higher than in rural areas.

Condom use during sexual intercourse is one of the most effective means of preventing HIV/AIDS among sexually active individuals. Condom promotion has been given considerable attention in Ghana by the joint effort of the Ghana Ministry of Health, Ghana Social Marketing Foundation (GSMF), and other private and non-governmental organizations (NGOs). For example, the Ministry of Health in Accra in collaboration with Family Health International embarked on an AIDS prevention program with condom promotion among commercial sex workers as its major goal. This program was implemented between 1987 and 1992, barely a year after the first AIDS cases were reported in Ghana.

Studies in Ghana have shown that the absence of self-perceived vulnerability for HIV infection is one of the major factors hindering the use of condoms to prevent HIV infection. For example, Awusabo-Asare et al. (1993) found that people believed that once they avoided sex with prostitutes and people who returned from outside the country, they need not use condoms for HIV prevention. Ankomah (1998) also noted that condom use by women is problematic because in sexual exchange for economic gain, women find it difficult to refuse sex or demand condom use with men who offer them payment. Studies have also found that the fear of being ridiculed and labeled as a loose woman may also prevent women from negotiating the use of condoms during sexual relations (Porter, 1994). These reasons, in addition to others such as lack of awareness of and availability of condoms have affected the success of promoting condom use in Ghana.

Knowledge of condom: increasing awareness.

Respondents in the DHS were asked if they have ever heard of various contraceptive methods, including condoms. Figure 5.1 shows that, initially, awareness of condoms was low among women: In 1988, 48% of women were aware of male condoms. There was a sharp rise in awareness of condoms between 1988 and 1993. In 1993, 80% of women were aware of condoms, further increasing to 87% in 1998. In 1993 and 1998, 85% and 93% of men, respectively, were aware of condoms.

Figure 5.1
Awareness of condoms women and men, Ghana, 1988-1998

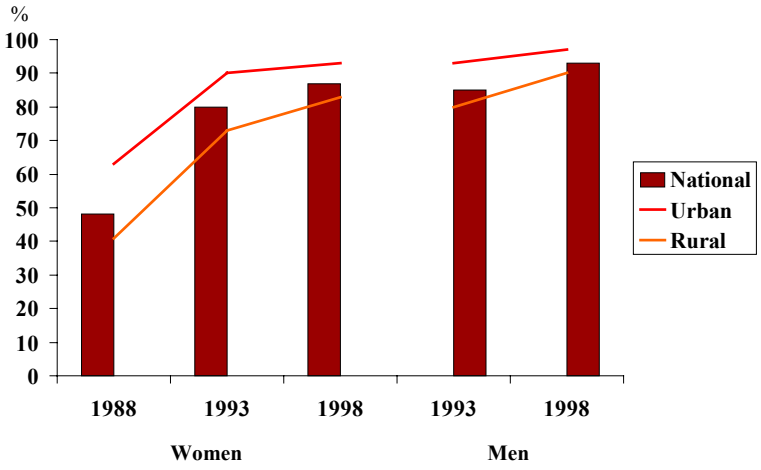


Figure 5.2
Knows where to get condoms, women and men,1988-98

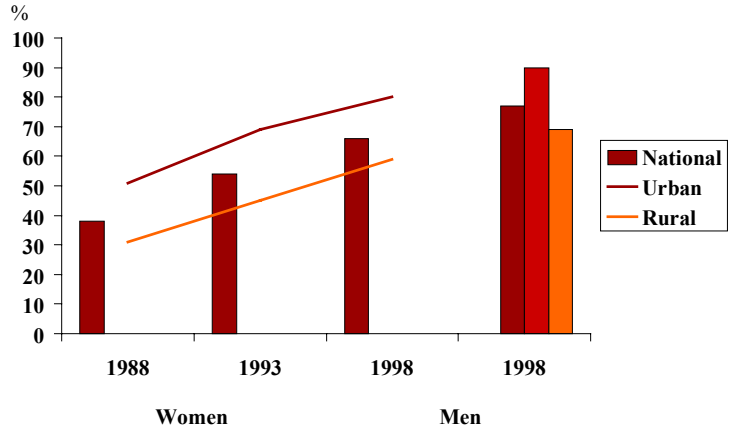
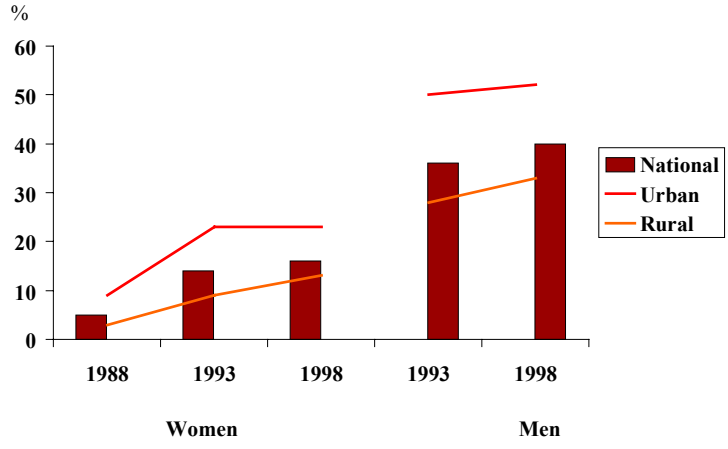


Figure 5.3
Ever use of condoms women and men, 1988-98



Despite the increase in condom awareness among women, men were more likely to be aware of condoms. This indicates the need to target women. Figure 5.1 also reveals urban-rural differences in condom awareness. Women in urban areas were more likely to be aware of condoms than those in the rural areas. These differences persisted until 1998. However, by 1998, there was little difference between urban and rural men.

Knowing where to get a condom: more people know a source, but not all

Respondents who were aware of condoms were asked whether they knew where a person could go to get them. In this report, those who were not aware of condoms are included in the denominator. Figure 5.2 indicates that considerably fewer people knew of a source for obtaining condoms, compared with the number of people who had heard of them (Figure 5.1)

Knowledge of a source for condoms increased between 1988 and 1998. In 1988 only 38% of the women knew a source. This increased to 54% in 1993, and there was a further increase to 66% in 1998. Among men this was only measured in 1998, which at that time, was 77% of the men interviewed. There were considerable differences in knowing a source between urban and rural people, with knowledge being much higher in urban than rural areas. This is true for both men and women, and is not surprising, since condoms are more readily available in urban areas.

Ever use of condom: evidence for increase in the 90s.

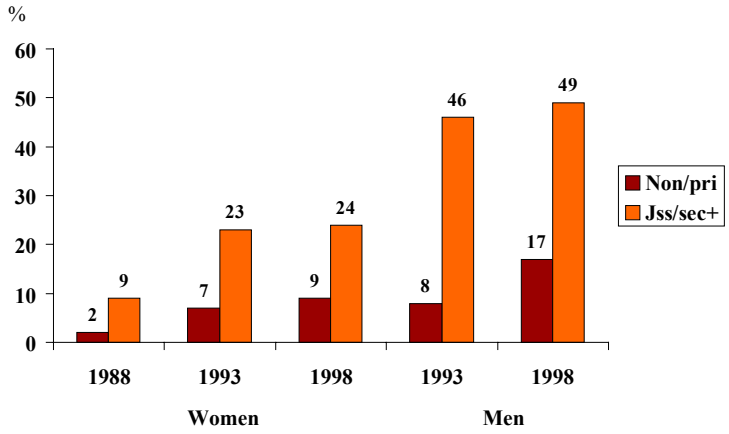
To assess the level of condom use, the proportion of sexually active individuals who had ever used condoms was computed. The proportion of sexually active men and women who had ever used condoms was generally low, but has increased (Figure 5.3). In 1988, only 5% of the women had ever used condoms, and by 1993, the proportion of those who had ever used condoms was about three times higher (14%). Sixteen percent of women had ever used condoms in 1998. There was also small increase in the proportion of men who had ever used condoms from 36% in 1993 to 40% in 1998.

People in urban areas were far more likely to have ever used condoms than those in rural areas. In 1988, three times the proportion of urban women used condoms than rural women (9% and 3%, respectively). This pattern continued in 1993 (23% and 9%, respectively). However, in 1998 the gap had reduced, and about twice as many urban as rural women had ever used condoms (23% and 13%, respectively). By 1998, more than half of sexually active urban men had ever used a condom.

Figures 5.4 to 5.6 present the differentials in ever use of condoms by selected socio-demographic variables. In Figure 5.4, women and men who have had high formal education were more likely to have ever used a condom than those with a low level of education. By 1993, about three times the number of more educated women and men had ever used condoms compared to those less educated. The gap in condom use between the two educational groups remained virtually the same in 1998 for both sexes. The effect of education remained strong after controlling for place of residence, region, age, and marital status in multivariate analyses.

Figure 5.5 shows that with the exception of 1988 for women and 1993 for men, older people have used condoms less than younger people. By 1988, condom use was lowest among women 15-19 and those aged 40-49, but by 1993 and 1998, women 15-19 had the highest level of condom use with those aged 20-29. In 1993, men 15-19 had the lowest level of condom use (27%), while those aged 20-29 had the highest level of condom use (43%). By 1998, the level of condom use among men 15-19 (47%) was almost at a similar level with that of those aged 20-29 (50%).

Figure 5.4
Ever use of condoms by education, 1988-1998



Jss/sec+= Junior secondary or secondary or more

Figure 5.5
Ever use of condoms by current age, 1988-1998

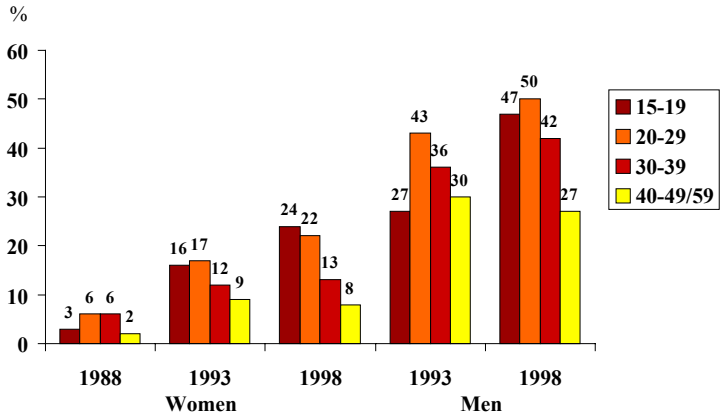


Figure 5.6
Ever use of condoms by marital status, 1988-1998

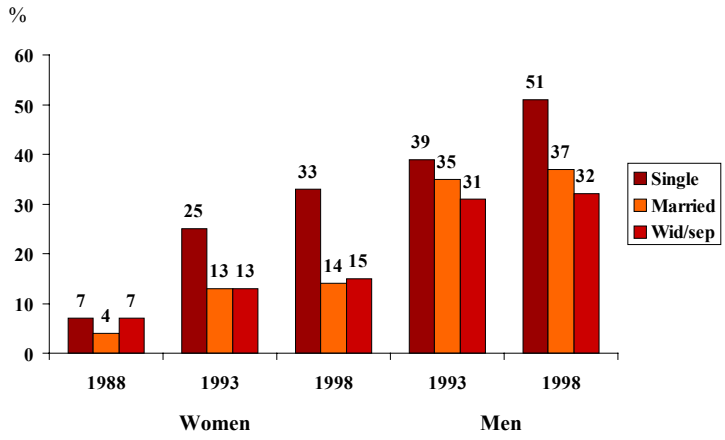


Figure 5.7
Level of condom use (ever use) by risk perception, women and men, 1998

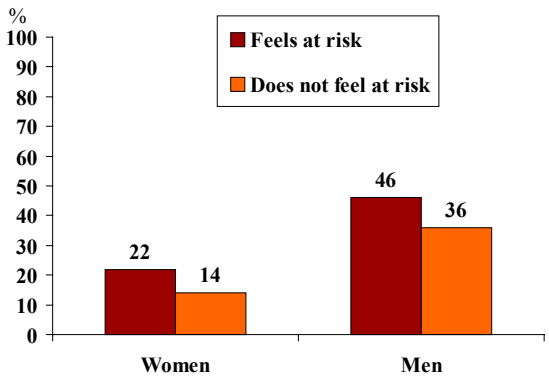


Figure 5.8
Condom use in the last four weeks, men, 1993 and 1998

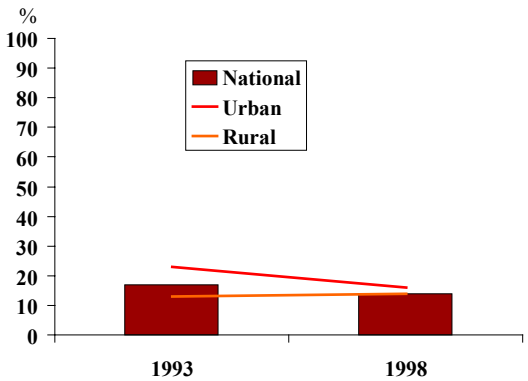


Figure 5.6 shows differences in condom use by marital status. Single women and men are more likely to have ever used a condom than those who are married and those who are widowed/separated. However, the results of multivariate analysis that controlled for the effects of other socio-demographic variables reveal that the differences were not significant for men. In 1998, the proportion of single women who had ever used a condom was 33%, compared to 14% and 15% for married women and women who were widowed/separated, respectively.

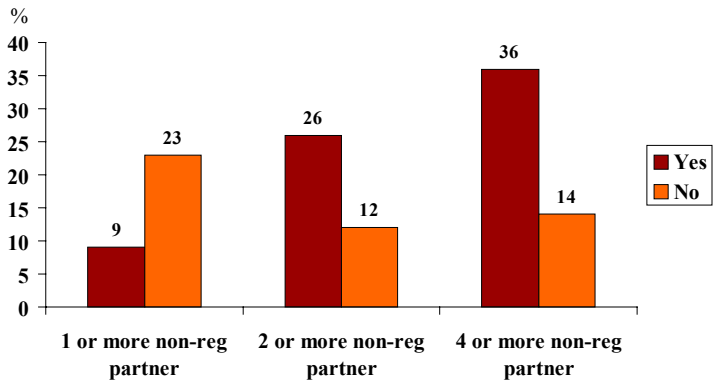
Perception of risk for HIV infection is related to condom use. Figure 5.7 shows that 22% of women and 46% of men who perceived themselves to be at the risk of HIV infection had ever used condoms in 1998 compared with 14% of women and 36% of men who did not feel they were at risk of HIV infection. Multivariate analysis demonstrated that these differences are statistically significant.

Condom use in the past four weeks: evidence of a decline

Level of condom use in the last four weeks was computed for men. There is no evidence for an increase in the level of recent condom use in the 1990s (Figure 5.8). The proportion of men who used condoms in 1993 was 17%, and the figure went down to 14% in 1998. Men living in urban areas were more likely to have used condoms within the last four weeks (23%) than those in the rural areas (13%). By 1998, the difference was attenuated, with 16% and 14% of men using condoms in the last four weeks in urban and rural areas, respectively. The decline in the proportion of men who used condoms between 1993 and 1998 primarily occurred in urban areas (from 23% in 1993 to 16% in 1998). This could be due to an outage of condoms around the time of the survey.

The result of condom use in the last four weeks among men who reported having a non-regular partner in the last year[2] is presented in figure 5.9. With the exception of men under the group of one or more non-regular partner, those who had non-regular partners were more likely to have used a condom in the last four weeks compared to those who did not have a non-regular partner.

Figure 5.9
Condom use in the last 4 weeks among men who had non-regular partners, 1998



2. Although these men reported non-regular partnership in the last year, condom use in the last four weeks may be with a non-regular partner or not.

Condom use among high-risk populations in Ghana

- Findings on condom use by high-risk population groups (female sex workers, police and miners) in research conducted by Research International and Family Health International in 2000 in collaboration with the NACP, Ministry of Health (Research International and Family Health International, 2001) include

    1. There was a 100% and 89% awareness of condoms among female sex workers in Accra and Obuasi, respectively. Additionally, 95% of Accra sex workers and 73% of Obuasi sex workers reported the use of condoms in their last paid sex act. The proportion of sex workers in Accra that reported the use of condoms during every sex act with clients was 88%; 2% reported never using a condom. The comparable figures for Obuasi were 44% and 18%, respectively. Sex workers who had a close friend or relative dying of HIV/AIDS were more likely to use a condom every time.

    2. The survey provided information on condom use by male police and male miners during sex with non-regular partners. Fifty-one percent of miners in Obuasi, and 61% of policemen in Accra who had sex with a non-regular partner reported condom use during the last sexual contact. As many as 34% of Obuasi miners reported that they had never used condoms with a non-regular partner; only 21% of policemen in Accra reported using condoms every time they had sex with non-regular partners.

    3. Unmarried male police and male miners were more likely to engage in unprotected sex with a non-regular partner. About 38% of police and 56% of miners reporting unprotected sex did not think it was necessary to use condoms. Condom use in commercial sex among police in Accra was 100% and 80% for Obuasi miners.

6. ADOLESCENTS

- Like in the general population, knowledge about how to avoid HIV infection is high among adolescents. However, teenage males (15-19) were less likely to know how to avoid AIDS than those aged 20-24 (79% versus 90%). There was no difference between teenage females and those aged 20-24. Knowledge about mother-to-child transmission was also high, as it was in the general population. There was an increase from 81% to 86% for women from 1993 to 1998; for men the increase was from 81% to 87% during the same period. Perception about an HIV-infected person appearing healthy was higher for 20- to 24-year-old women and men (74% and 84%, respectively) than those aged 15-19 (70% of women and 66% of men) in 1993. The proportion of teenage males with this knowledge increased to 73% in 1998, while that of older females (20-24) increased to 79% in 1998.

- When prompted, more than 80% of adolescent women and men knew a person could get AIDS by not using a condom. Older men (20-24) were more likely to know this than younger men (15-19), but there was no difference by age among women.

- The median age at first sex increased from about 17 years in 1988 and 1993 to about 18 years in 1998 for women. There was a larger increase for men. In 1993, the median age at first sex was 18.5 years for 15- to 19-year-olds and 18.4 years for 20- to 24-year-olds. By 1998, the median age at first sex increased to 19.9 years for 20- to 24-year-olds and no median was computed for men aged 15-19 in 1998, as less than 50% had started having sex by age 20.

- Premarital sex was higher among men than women. About one-fourth of unmarried women aged 15-24 had premarital sex in 1988, 1993 and 1988, while 22%, 28% and 44% of unmarried men aged 15-24 had premarital sex in 1988, 1993, and 1988, respectively.

- Ever use of condoms increased between 1988 (6%) and 1998 (30%) among sexually active single women. It also increased for sexually active single men from 34% in 1983 to 55% in 1998. Condom use in the last 4 weeks among single adolescent males increased between 1993 (21%) and 1998 (46%). Condom use in the last 4 weeks was higher among those who had non-regular partners (51%) than those who did not (18%).

This section examines the characteristics of adolescents, their knowledge about HIV/AIDS, and sexual behavior. Programs to prevent the spread of HIV in many developing countries, including Ghana, have focused on adolescents due to the importance of preventing new infections among young people in stemming the AIDS epidemic. A major HIV/AIDS awareness campaign was launched in February 2000 in Ghana by the Ghana Social Marketing Foundation (GSMF) in collaboration with Johns Hopkins University, NACP and the Ministry of Communication (Ministry of Health, 2001b). The campaign focused on young adults aged 15-24 with the main aim of increasing risk perception among them and generating behavior change. It is important to examine trends in knowledge and sexual behavior in young people to understand current status and define areas that require future intervention. The information in this section is also based on the DHS data described in chapter one, but is limited to people aged 15-24. Table 6.1 gives the sample sizes of young people in the DHS surveys.

Table 6.1 Population of adolescents (15-24) in the national surveys (weighted numbers)

Surveys	DHS[1] 1988			DHS[1] 1993			DHS[1] 1998		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Females (15-24)	634	1082	1716	691	941	1632	677	1133	1810
Males (15-24)	-	-	-	139	267	406	199	376	575

[1] Demographic and Health Survey

Socio-demographic characteristics of young people

This section first describes some socio-demographic factors that may influence the knowledge and behavior of young people in Ghana. Acquisition of knowledge about HIV/AIDS may be influenced by factors such as exposure to the media, level of education, interaction with people in the work place, exposure to life in urban areas, and marital status. Subsequent discussions examine how some of these variables influence knowledge about HIV/AIDS and sexual behavior.

Figure 6.1 shows the proportion of respondents 15-24 who are regularly exposed to the media. Generally, more young men than young women were exposed to the media. Barely half of the women listened to radio (51%) or watched television (52%) at least once a week in 1993. By 1998, the figures increased to 59% and 58% respectively, for exposure to radio and television. The proportion of males who listened to radio was 69% in 1993 with little change in 1998 (73%), while the proportion of males who watched television increased from 53% in 1993 to 62% in 1998. Young people are more likely to listen to radio and watch television than read newspapers, as shown in Figure 6.1. Differences in exposure to television between those living in urban and rural areas are shown in Figure 6.2. In 1993, twice as many urban residents watched television compared with those in rural areas. There was no change in the proportion of those watching television in urban areas between 1993 and 1998. Some increase occurred in the rural areas, consequently narrowing the urban-rural gap in 1998.

The level of formal educational attainment by place of residence and age is provided in Figures 6.3 and 6.4. The proportion of those who had up to junior secondary/senior secondary or higher education was lower in rural areas than in urban areas and also lower for females than males. However, in rural areas, there were increases in the proportion of females with higher education between 1993 and 1998. There was virtually little or no change for males in the rural areas. There were increases in the proportion of those with higher levels of formal education for both females and males in urban areas between 1993 and 1998. In the rural areas, there were remarkable differences in educational attainment for teenage[3] (15-19) and older females (20-24) in 1993 (56% and 42%, respectively), and in 1998 (62% and 51%, respectively). Such large age group differences are not observed for males in the rural areas and males and females in the urban areas.

3. This document recognizes that the concept of teenage includes ages 13 and 14. However, the analyses done here starts from age 15.

Figure 6.1
Proportion of Ghanaians aged 15-24 exposed to various media

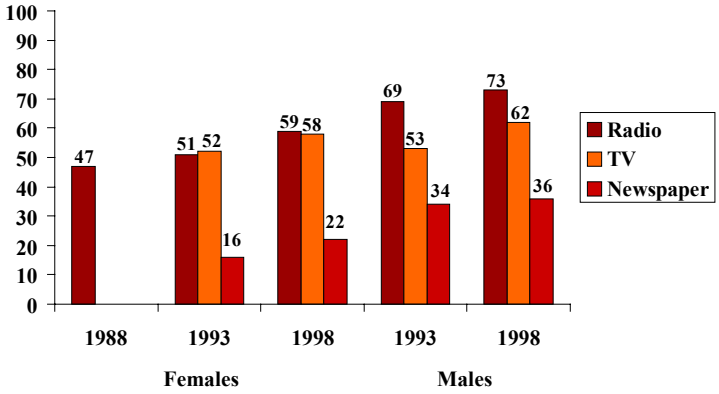


Figure 6.2
Proportion of Ghanaians aged 15-24 who watched TV at least once a week

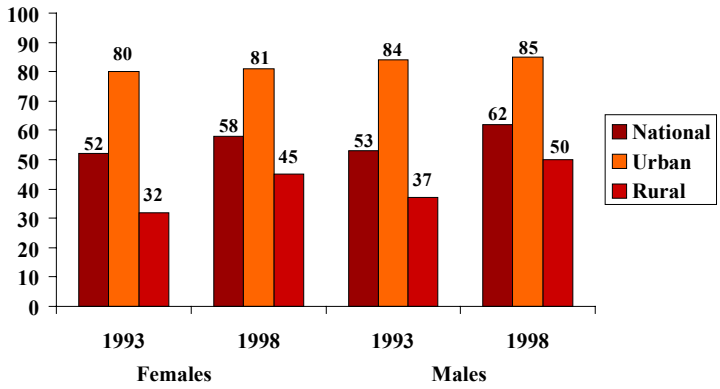


Figure 6.3
Proportion of rural adolescents who had junior secondary/senior secondary or higher education by age

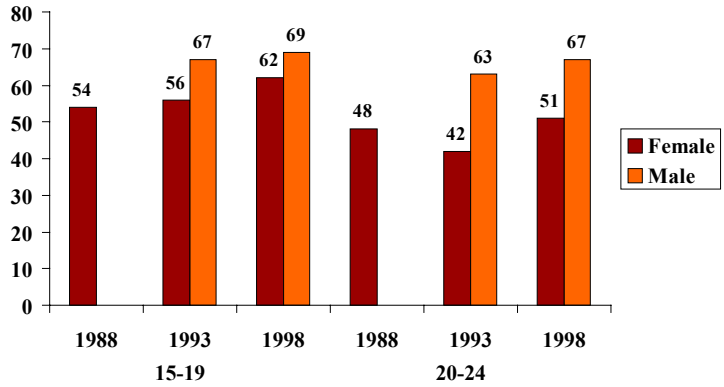
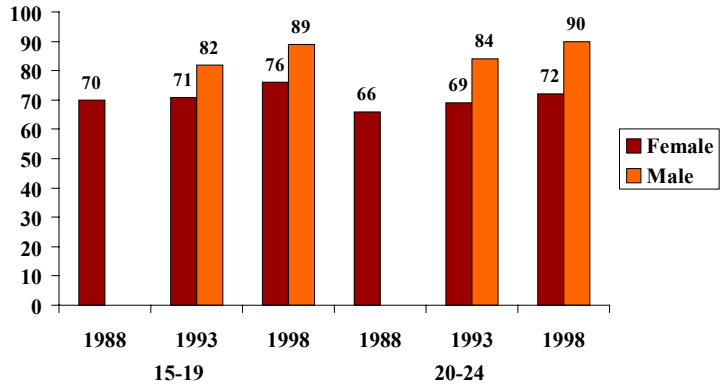


Figure 6.4
Proportion of urban adolescents who had junior secondary/senior secondary or higher education by age



Contraceptive use, pregnancy and child bearing

The use of modern contraception by single, sexually active young people is very low, especially among women. However, the trend shows a rise in the use of modern contraception in the 1990s for both women and men. For women in the younger age group (15-19), modern contraceptive use rose from 3% in 1988 to 9% in 1993, and subsequently to 13% in 1998 (Figure 6.5). In 1988, women in the 20-24 age group were more likely to use modern contraception (6%) than those aged 15-19 (3%). By 1998, those aged 15-19 had higher levels of modern contraceptive use (13%) than those in the 20-24 age group (11%). Modern contraceptive use was higher among older men (20-24) than teenagers (15-19) in 1993, and this pattern continued in 1998. In 1993, 16% of the teenagers and 25% of those aged 20-24 used modern contraception, while the figures were respectively 26% and 34% in 1998. The differences by age were significant when controlled for other factors in multivariate analysis.

Figure 6.6 shows the proportion of women aged 15-24 who were pregnant between 1988 and 1998. The proportion of women who were pregnant was generally high with a declining trend between 1988 and 1998, probably reflecting an increase in modern contraceptive use between the same period. As expected, more women aged 20-24 were pregnant when compared with those aged 15-19. The level of premarital pregnancy in 1988 was 18% for 15- to 19-year-olds and as high as 28% for those 20-24. The level of early pregnancy indicates the need to postpone sex and to increase access to modern contraception because of the socio-economic and health problems associated with early pregnancy.

Figure 6.5
Proportion of single, sexually active respondents using modern contraception by age, 1988-1998

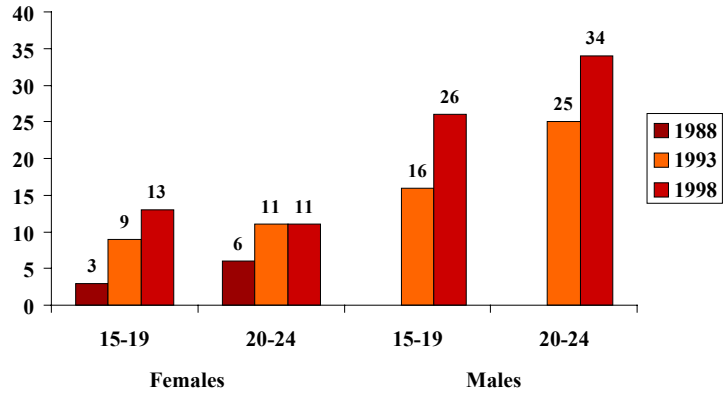
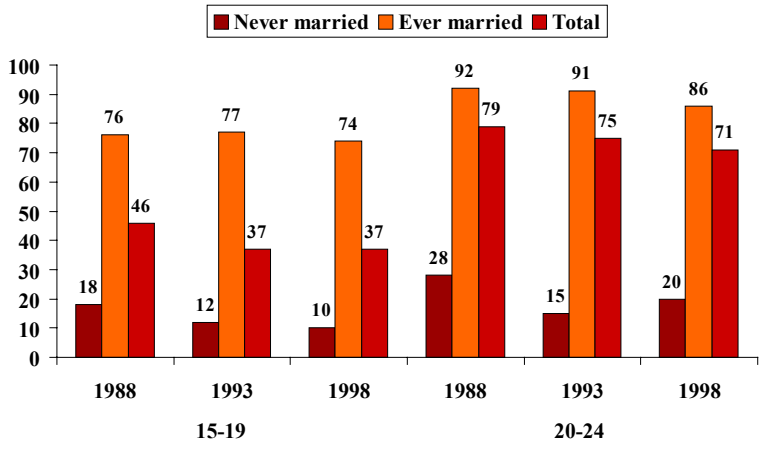


Figure 6.6
Proportion of sexually active women ever pregnant, by age and marital status, 1988-1998



HIV-related knowledge

General knowledge

Awareness of HIV/AIDS among youth is virtually universal and at similar levels to the general population. The majority of youth knew of some ways to avoid contracting HIV/AIDS (Figure 6.7). There was no difference in the proportion of teenage females (77%) and females aged 20-24 (80%). However, male teenagers (79%) were less likely to know about ways to avoid AIDS than men 20-24 (90%). Level of formal education across age groups was also an important determinant of knowledge about ways to avoid contracting the virus. Knowledge about ways to avoid HIV was higher in urban than rural areas for all females and only for male teenagers (15-19).

Information on knowledge about mother-to-child transmission is shown in Figure 6.8. Knowledge was high among adolescents, with no differences between males and females. However, there were differences by place of residence and educational levels. For example, in 1993, the proportion of females that knew about mother-to-child transmission in urban areas was 87%, compared to 76% of females in rural areas. The figures for males in 1993 were 93% and 75% for urban and rural areas. There was some gain in knowledge among respondents in the rural areas by 1998, reducing the gap in knowledge between the urban and rural areas. The gap in knowledge by educational level in 1993 persisted until 1998 and increased from 13% to 20% for males (not shown).

Common misconception about HIV/AIDS transmission

Figures 6.9 through 6.10 provide information on knowledge about whether an HIV-infected person can appear healthy. Among 15- to 19-year-olds, the knowledge level was similar for females in 1993 (70%) and 1998 (67%), but there was a sign of increase in the percentage of knowledgeable males between 1993 (66%) and 1998 (73%). In 1993, 75% of teenage females and 70% of teenage males with high formal education knew this fact about HIV infection (not shown). This is higher than the figures for those with less formal education in 1993, which were 59% and 52% for teenage females and males, respectively. The gap widened in 1998. Figures for those with higher formal education were 74% and 81% for teenage female and males, respectively, compared to 52% for teenage females and 48% for teenage males with less formal education. Those who lived in urban areas were more knowledgeable than those in rural areas in 1993 and 1998, except for teenage males. In 1998, there was some gain in knowledge by teenage males living in rural areas, thereby reducing the gaps in knowledge between rural and urban residents by more than 50%.

Figure 6.10 shows that those aged 20-24 were more knowledgeable than teenagers about an HIV-infected person looking healthy. For example, in 1998, 67% and 73% of teenage females and males, respectively, compared to 79% and 85% of females and males aged 20-24, respectively, responded correctly. The pattern of the differences by level of education, place of residence, and marital status observed for teenagers also applied to those aged 20-24.

Figure 6.11 presents results on understanding about the transmission of HIV through mosquito bites. Adolescents responded similarly to the general population. Very few young females and males knew that HIV could not be transmitted through mosquitoes in 1993. In 1998, virtually no women (less than 1%) spontaneously mentioned avoiding mosquito bites, as a means of protection against HIV infection.

Figure 6.7
Proportions of males and females aged 15-24 who know ways to avoid AIDS, 1998

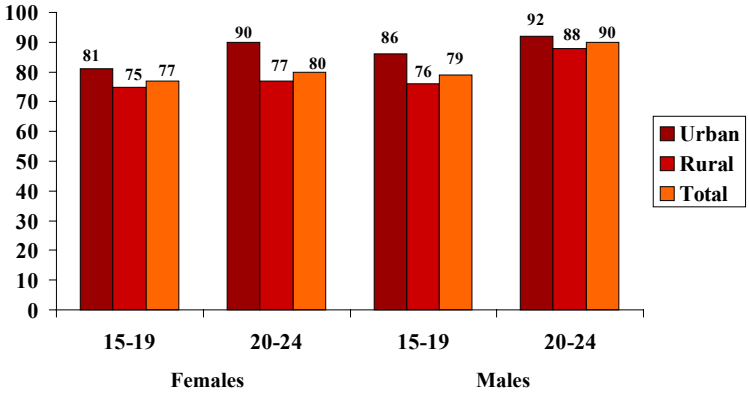


Figure 6.8
Proportions of males and females aged 15-24 who know about mother-to-child transmission

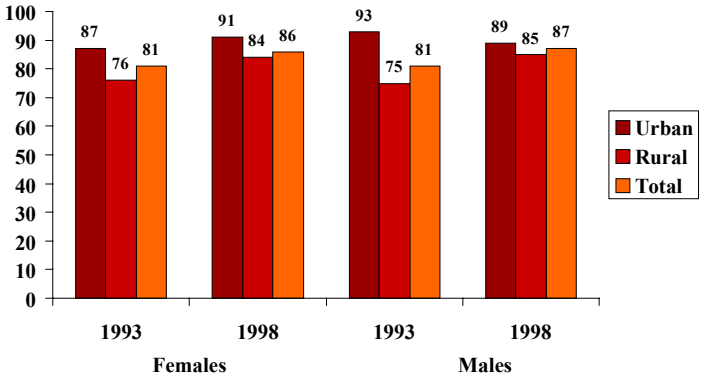


Figure 6.9
Proportions of males and females aged 15-19 who know that an HIV-infected person can appear healthy

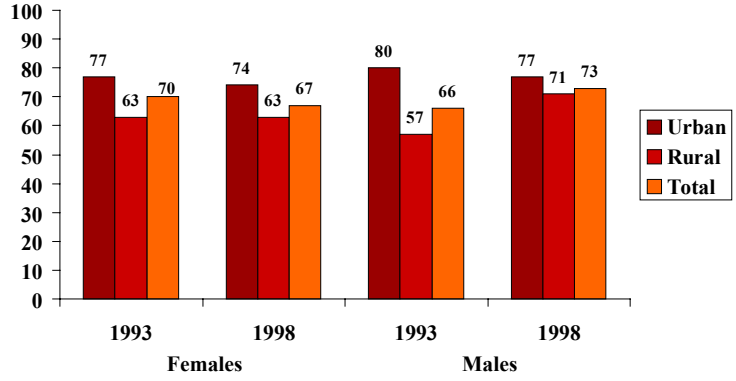


Figure 6.10
Proportions of males and females aged 20-24 who know that an HIV-infected person can appear healthy

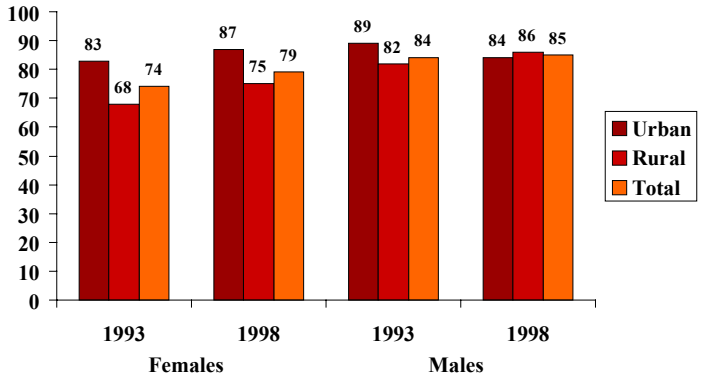


Table 6.2 Proportion of adolescent who had sex by age 15 and 18 years

	1988	1993	1998
Sexual activity by age 15			
Women	30	31	21
Men		19	12
Sexual activity by age 18 (of those aged 18+)			
Women	81	80	70
Men		59	42

Knowledge about how to reduce the risk of sexual transmission: men are more confident

Figures 6.12 and 6.13 show the results on knowledge about whether a person can get AIDS when not using a condom for females and males aged 15-24 in 1993. As explained earlier, this question was prompted in the DHS. Similar to what is observed in the section for the general population, the majority of young people were aware of the dangers of becoming infected with HIV if one does not use a condom. Knowledge was higher among those with higher levels of formal education for both females and males, irrespective of age, than those with less formal education. Differences by place of residence were more obvious for those aged 15-19. Contrary to expectation, females in rural areas seemed more knowledgeable than those in urban areas, but the reverse is the case for males aged 15-19.

Figures 6.14 and 6.15 present results for the unprompted question about the use of condoms to avoid HIV in 1998. Those aged 20-24 were more likely to mention that a person could avoid HIV by using a condom. Those in urban areas were more likely to know about the use of condom for avoiding HIV than those in rural areas, and the proportion with knowledge was also higher among the more educated than the less educated (not shown).

Information about sticking to one sex partner in order to avoid AIDS is only available from the 1998 GDHS. Those aged 20-24 were more likely to know that it was important to stick to one partner. There were no differences by urban-rural residence, but more of those with higher levels of formal education responded correctly, as did married individuals (not shown).

Perception of risk for HIV and STDs infection

There were no differences in the level of perception of risk for HIV and STDs infection between male and female adolescents. However, females living in urban areas were significantly more likely to perceive themselves to be at risk. Among females, the level of formal education had significant effects only on the perception of risk for HIV infection, not for STDs, in the multivariate model. Results of the multivariate analyses also showed that females aged 20-24 were significantly more likely to perceive themselves to be at the risk for HIV and STDs than females aged 15-19 years (not shown).

Similarly, after controlling for the effects of age and region of residence, the levels of perception for HIV and STD infection were higher for males living in urban areas than those living in rural areas. Perception of risk was also higher for those married than those who were single, while the net effects of education on risk perception (HIV and other STDs) were not significant.

Figure 6.11
Proportion of 15- to 24-year-olds who has correct knowledge about HIV through mosquito bite

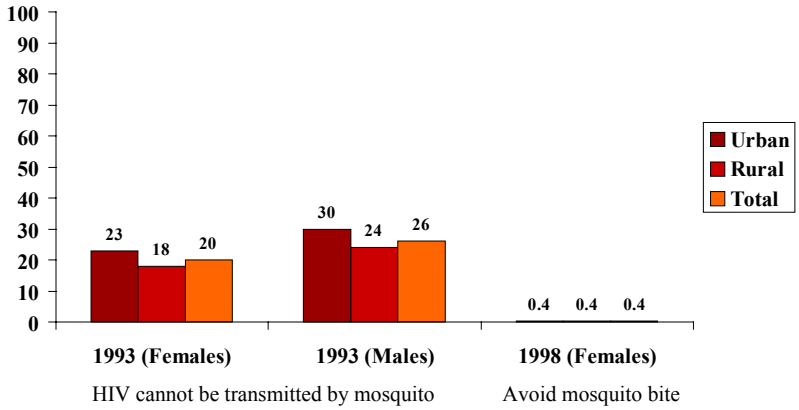


Figure 6.12
Proportion of 15 to 24-year-old females who knows that a person can get AIDS by not using a condom, 1993

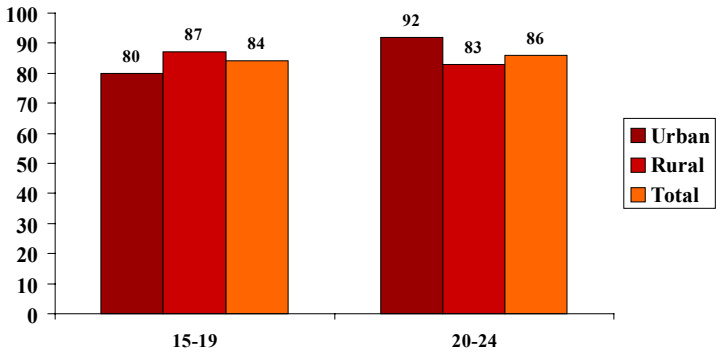


Figure 6.13
Proportion of 15- to 24-year-old males who knows that a person can get AIDS by not using a condom, 1993

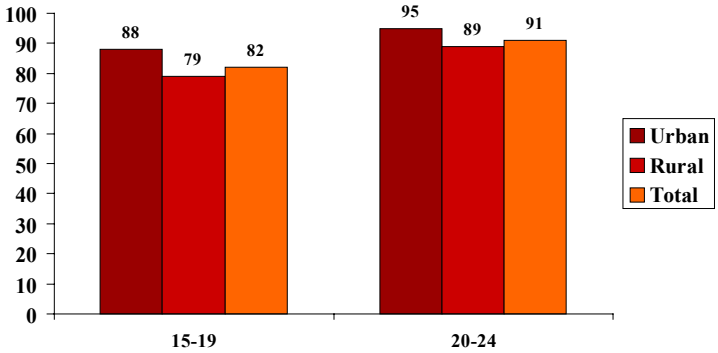


Figure 6.14
Proportion of 15- to 24-year-old females who knows that a person can avoid AIDS by using a condom, 1998

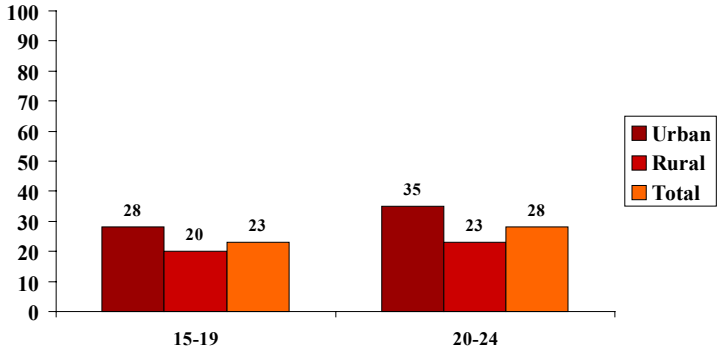
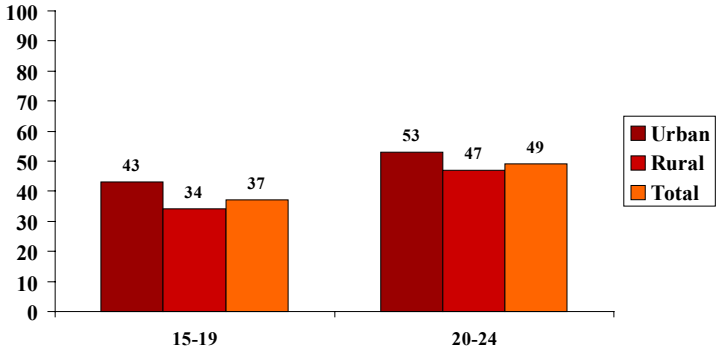


Figure 6.15
Proportion of 15- to 24-year-old males who knows that a person can avoid AIDS by using a condom, 1998



Results on knowledge about HIV/AIDS from the BSS survey (2000) for unmarried male youth (20-24) and unmarried female youth (18-22) in Ghana

This survey collected data from male youths in Accra and Kumasi and from female youths from Accra, Kumasi, and Agomanya (Research International and Family Health International, 2001). Some of the results on knowledge about HIV/AIDS in the three cities are as follows:

- Forty-seven percent and 52% of male youths, in Accra and Kumasi respectively, knew about HIV-prevention methods, and 74% in both cities mentioned using condoms as a means of avoiding HIV infection. Furthermore, 48% and 56% of male youth had correct beliefs about AIDS. According to the study report, awareness of STD symptoms was high among male youths, as the majority were able to mention genital discharge and burning pain as symptoms of STD.

- Fifty-one percent, 39%, and 58% of female youths, in Accra, Kumasi, and Agomanya respectively knew of HIV-prevention methods. The proportions of female youths with no correct beliefs about AIDS were 39% in Accra, 51% in Kumasi, and 27% in Agomanya. Knowledge about STDs is low among female youths, as only 31% were able to mention a symptom of STD in men and women.

First sex and premarital sex

The earlier a person starts having sex, the higher the likelihood that the person will be exposed to HIV infection. There is little doubt that delaying sexual debut would contribute to lower infection rates in young people. The percentages of women aged 15-24 who had sex by their fifteenth birthdays and those aged 18-24 who had sex by their eighteenth birthdays were higher than that of men in the same age group. The trend shows a decline in the percentage of women and men sexually active by their fifteenth and eighteenth birthdays (Table 6.2). In 1988, 30% of the women had had sex by their fifteenth birthdays, which declined to 21% in 1998. Similarly, the number of women aged 18-24 who had sex by their eighteenth birthdays declined from 81% in 1988 to 70% in 1998. In 1993, 19% and 59% of the men had sex by their fifteenth and eighteenth birthdays, respectively, and the numbers declined to 12% and 42%, respectively in 1998.

Women with secondary or higher education are less likely to have sex by their fifteenth birthdays compared to those with no formal education or only primary school education (Figure 6.16). In contrast, in 1993 less educated men were less likely to have sex by their fifteenth birthdays compared to more educated men. However, by 1998 there were no differences between the two groups of men. In addition, there was a similar rate of decline between less educated and more educated women. Between 1993 and 1998, there was a decline from 26% to 17% for women with secondary or higher education and a decline from 39% to 29% for women with no formal education or only primary school education. There was a decline only among men with secondary or higher education from 21% in 1993 to 12% in 1998, while the rate remained about the same among men with no secondary or higher education between 1993 (15%) and 1998 (13%).

Figure 6.16
Percent of 15- to 24-year-olds who had initiated sex by age 15 by level of education, 1988-1998

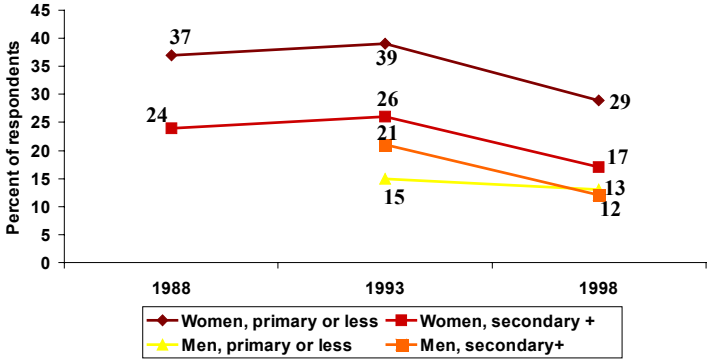


Figure 6.17
Median age at first sex (in years) by survey among women, 1989-1998

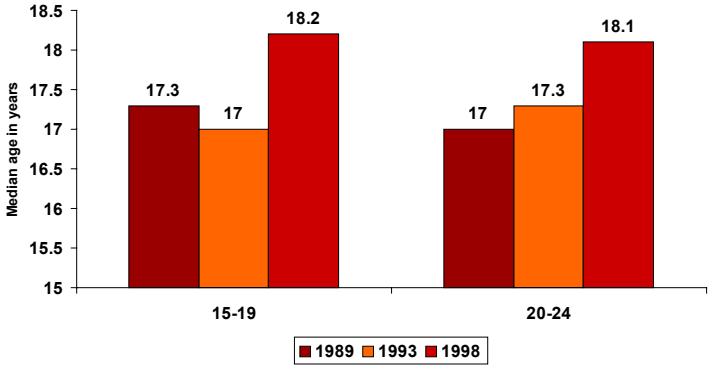


Figure 6.18
Changes in median age at first intercourse among men and women between birth cohorts during the early and late nineties

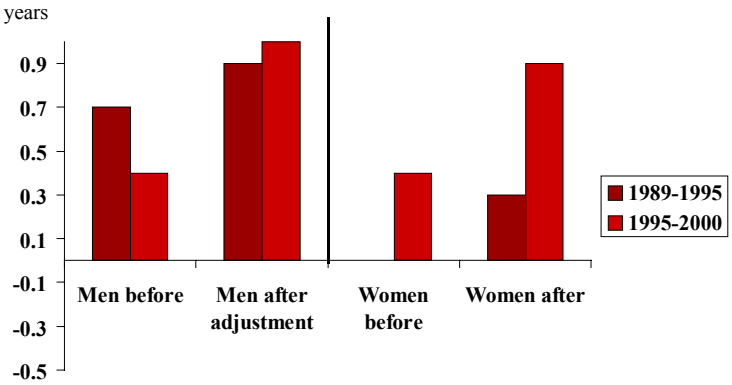
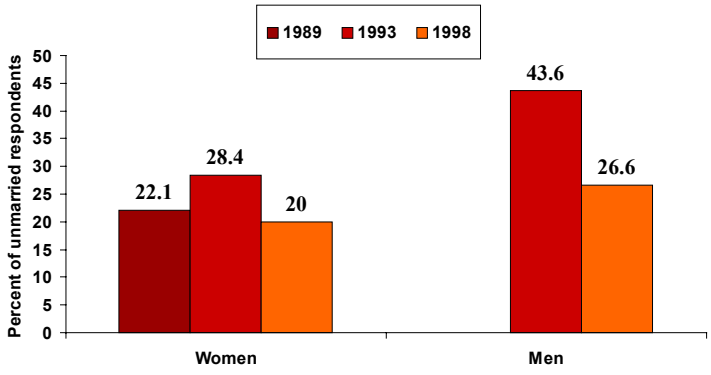


Figure 6.19
Premarital sex among unmarried women and men 15-24, 1989-1998



1993 men based on 20-24 years only

The second method of looking at trends in sexual debut allows for a better understanding of the patterns of early sexual activity. A detailed description of the method is available elsewhere.[4] Briefly, people aged between 15 and 24 are asked whether they have ever had sex, and if so how old they were when they first had sex. A "life table" approach – a common technique in demography – is used to construct a cumulative curve of age at first sex. Almost all respondents were virgins at age 10. They appear in the "first sex" curve at the age at which they say they first had sex. If they are still virgins at the time of the survey, they drop out of the population considered "at risk" for having sex at whatever age they are at that time. This method allows for the calculation of fairly accurately median value of reported first sex – in other words, it is a method for calculating the age by which half of the young men or women in a population have had sex.

The median age at first intercourse, derived from the life-table method, was just over 17 years among women 15-19 and 20-24 years in the first two surveys (Figure 6.17). In the 1998 DHS, a statistically significant increase in age at first sex was recorded to just over 18 years. Among 15- to 19-year-old men in 1993, the median age at first sex was 18.5 years, and 18.4 years among those aged 20-24 years. In 1998, a substantial increase was observed in both age groups. No median was calculated for men under 20 as less than 50% of men had started having sex by age 20, while the median was 19.9 years among men 20-24. Men and women living in the rural areas started having sexual intercourse at about one year earlier than those living in the urban areas. Similarly, those with at least some secondary education initiated sex one year later than those with lower levels of formal education.

These changes in age at first sex require further investigation, as an increase in age at first sex among 15-to19-year-olds is possible, but an increase among 20- to 24-year-olds is less probable. A comparison of data from the same birth cohort encountered in successive surveys (e.g. those aged 15-19 in an earlier survey and 20-24 in a survey five years later) allows for an assessment of the quality of reporting. Changes in measures of age at first sex in the same birth cohort between the two surveys will be associated with recall bias, sampling error, survivor selection or a combination of these factors. Normally, we would not expect mortality or external migration to be so strongly associated with age at first sex that selection effects could alter the structure of the birth cohort.

Cohort comparisons are particularly important for the evaluation of the reporting bias associated with initiation of sexual activity. Teenagers may be reluctant to report sexual activity to an older interviewer, while older respondents may be less willing to report past teenage sexual activity once they are in their twenties. This would produce an impression of increasing age at first sex when comparing reports of different age groups collected in a single cross-sectional survey. The reporting bias may also work in the opposite direction if married women displayed a strong reluctance to report premarital sexual activity.

Although Demographic and Health Surveys aim to produce a nationally representative sample, they do not re-visit the same women from one round to the next. Thus, we may also be faced with problems due to changes in the composition of the sample between rounds. Later age at first sex is very strongly associated with higher educational attainment and somewhat less strongly with urban residence, so changes in the composition of the sample with respect to these two characteristics may produce spurious impressions of change over time.

To obtain estimates of age at first sex by birth cohort, the data from the successive surveys were pooled. Women born during 1969-73 were about 15-19 in 1989, 20-24 years in 1993 and 25-29 in 1998, but the estimate of median age at first sex should not vary much over time. Figure 6.18 shows the changes in the median age at first sex between the birth cohorts in the three surveys, derived from the pooled data, before

4. Zaba B., J.T. Boerma, E. Pisani. Estimating levels and trends in age at first sex from survey data using survival analysis. MEASURE Evaluation Working Paper, forthcoming.

Some studies on multiple (non-regular) partnerships among single youths in Ghana

- In a study of some communities in Ghana during the late and early 1990s, Anarfi (1991) found that the number of sexual partners before marriage among females was considerably higher in urban than in rural areas, partly reflecting a higher urban age at first marriage. Furthermore, unmarried males have greater number of sexual partners in Ghana than unmarried females. For example, 21% of rural males and 17% of urban males reported that they had 5 to 9 sexual partners before their first marriages. This is compared to 0% and 5% for rural and urban females, respectively. This is a reflection of greater premarital sexual freedom for males compared to females.

- Ankoma (1994) also found in the city of Cape Coast that one-quarter of female youths (18-25) who had ever had sex had more than one partner at the time of the survey.

- The study by Anarfi (1997) on street children in Ghana revealed that about 36% have had 2 or more partners in their life time, with about 7% saying that the number is too many to count. It is surprising to find that over a two-week period, about 3% of the children reported too many partners to count, and the author noted that these may be those engaged in commercial sex. Only 28.5% of those sexually active reported they have regular sexual partners, and girls (34%) were more likely to have regular partners than boys (27%).

and after adjustment for reporting bias by age of the respondent, and also residence and education. For both women and men there has been a modest increase in age at first sex in the early nineties and a large increase (in the order of one year) in the second half of the nineties.

Premarital sex

Clearly, high proportions of young people are having sex at early ages. In Ghana, HIV-prevention programmes do not seek to discourage early sex so much as they seek to discourage early sex prior to marriage. In some parts of Ghana, much of the early sexual activity recorded above may have taken place within marriage, making it of less concern to HIV-prevention programmers. The median age at first marriage among young women increased from 19 in 1988 to 19.3 years in 1993 and 20 in 1998. Men married much later than women and only a quarter of men were married by the age of 22.5 in 1998 (22.1 in 1993) and the median was over 25 (not shown).

About one-fourth of unmarried women aged between 15 and 24 had had premarital sex in all survey rounds, and among young men the proportion was much higher (Figure 6.19). In 1989, 22% of single women were sexually active, 28% in 1993 and 20% in 1998. Among unmarried men 44% were sexually active in 1993. Five years later a dramatic decline had occurred to 26.6%.

Multiple partnerships

Figure 6.20 reveals a high rate of non-regular sexual partnership among males (single and married together) aged 15-24, with 60% having one or more non-regular partners and 21% two or more non-regular partners in the last year. The results for the multivariate analysis show that there were no differences by place of residence and level of education. Those aged 15-19 were more likely to have one or more non-regular partners than were 20- to 24-year-olds (not shown).

Condom use

The results for condom use among 15- to 24-year-olds are presented in Figure 6.21. Earlier analysis of the ever use of condoms by age for the whole population revealed higher condom use by younger women and men, and there was a substantial increase in the level of condom use between 1988 and 1998 for females and males aged 15-24 years.

Figure 6.20
Proportion of males aged 15-24 who had non-regular partners during the last year, 1998

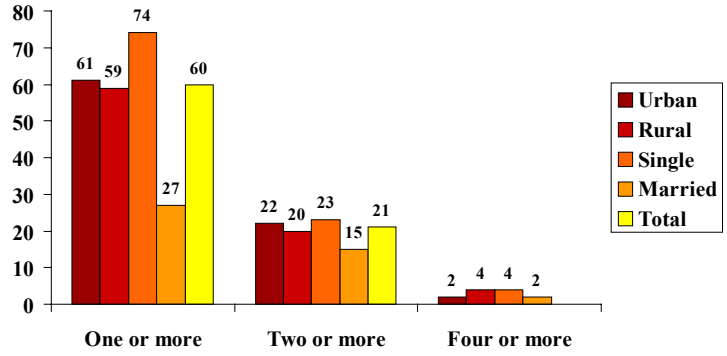
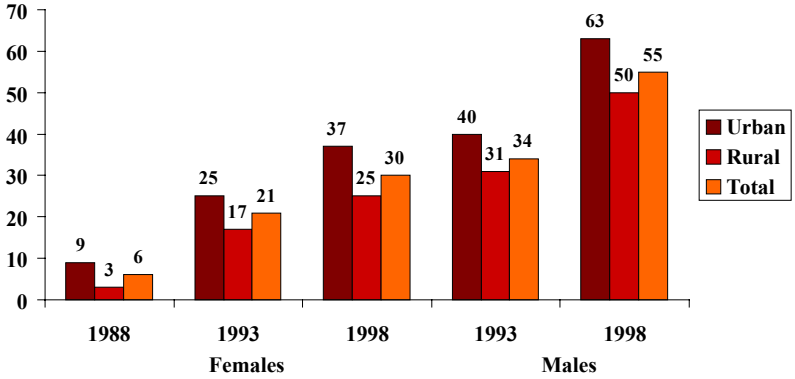


Figure 6.21
Proportion of single, sexually active 15- to 24-year-olds who had ever used a condom



Other studies on condom use among youths in Ghana

- Ankoma (1998), based on a focus group study of single young adults aged 18-25, noted that because sexual relations among youths in Ghana are connected to economic gain, many female youths find it difficult to negotiate condom use during sexual relations with their partners. Ampofo (1998) found that single women who were not totally dependent on their boyfriends were very successful in negotiating for condom use during sexual intercourse with their boyfriends.

- In a study of 601 sexually active males aged 15-24 in Yilo-Krobo district, a rural area in Ghana, Adih and Alexander (1999) noted that 65% had used a condom at least once since becoming sexually active, but only 21% said they always used a condom during sexual intercourse. In a multivariate analysis, age, perception of fewer barriers, and confidence about using a condom had a positive effect on ever use of condom and condom use at last intercourse. Young men who perceived they were highly susceptible to HIV were more likely to have used a condom at last intercourse.

- In a BSS study in Ghana by RI and FHI in 2000, 91% of single male youths (20- to 24-year-olds) were aware of condoms, and 84% of the youths reported condom use during last sexual intercourse. In Accra, 57% reported using a condom at last non-regular sex, while 46% reported using one at last non-regular sex in Kumasi. Nine percent of the male youths reported sex with commercial sex workers in the last six months in the two cities, with 80% and 89% (of those who had commercial sex) reporting condom use at last commercial sex in Accra and Kumasi, respectively.

  In the Research International and Family Health International (2001) survey, condom awareness was lower among single female youths (86%) than male youths, and condom use during last sexual intercourse with a non-regular partner was 48%, 48%, and 32%, respectively in Accra, Kumasi, and Agomanya.

  Some of the factors associated with high risk behavior or unprotected sex among single female youths include increasing age, less schooling, being away from home in the past 12 months, and regular consumption of alcohol. Some significant factors for single male youths include increasing age, regular consumption of alcohol, and ever having used drugs.

- The study of street children in Ghana by Anarfi et al. (1997) found that although 83% of the children knew about condoms, only 28% had ever used one, and only 21% had used them in the last three months to the interview. Only half of the children said condoms could protect them from getting AIDS, while 80% of those not using condoms just did not like them.

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APPENDIX TABLES

Table A.1. Socio-demographic distribution of women in the surveys, Ghana 1988-1998

	1988	1993	1998
Total sample	4,488	4,562	4,843
Age			
15-19	19	17	19
20-29	37	37	37
30-39	26	29	26
40-49	16	17	18
Education			
None	40	35	29
Primary	16	18	18
Middle/Jr. Secondary	37	37	43
Secondary or more	7	10	10
Marital Status			
Single	20	20	24
In union (cohabiting)	70	70	64
Divorced/Widowed	10	10	12
Types of marriage			
Monogamous	67	72	77
Polygynous	33	28	23
Residence			
Urban	34	38	36
Rural	66	62	64
Geographical region of residence			
North	11	19	13
Middle	45	38	34
South	44	43	53

Table A.2. Socio-demographic distribution of men in the surveys, Ghana 1988-1998

	1988	1993	1998
Total sample		1,302	1,546
Age			
15-19	na	17	21
20-29		29	30
30-39		26	24
40-49		28	25
Education			
None	na	25	16
Primary		11	12
Middle/Jr. Secondary		43	52
Secondary or more		21	20
Marital Status			
Single	na	36	41
In union (cohabiting)		57	53
Divorced/Widowed		7	6
Types of Marriage			
Monogamous		85	87
Polygynous		15	13
Place of residence			
Urban	na	35	35
Rural		65	65
Geographical region of residence	na		
North		19	13
Middle		37	34
South		44	53

Table B.1. Prevalence of HIV Infection among Antenatal Women by Region, Sentinel Surveillance Sites and HIV Types

REGION	LOCATION	RESIDENCE	1990			1991			1992			1993			1994		
			1	2	1&2	1	2	1&2	1	2	1&2	1	2	1&2	1	2	1&2
Greater Accra	Korle-Bu	Urban															
Greater Accra	Adabraka	Urban							0.0	0.0	1.2						
Upper East	Bolgatanga	Urban													1.6	0.4	2.0
Upper East	Bawku	Semirural													2.4	0.0	2.4
Central	Cape Coast	Urban													2.2	0.2	1.0
Central	Assin Fosu	Semirural													2.0	0.3	0.2
Volta	Ho	Urban													2.4	0.0	2.4
Volta	Hohoe	Semirural													2.3	0.0	2.3
Eastern	Koforidua	Urban	2.7	0.0	2.7				0.0	0.0	3.2				2.0	0.0	0.4
Eastern	Agomanya	Semirural							0.0	0.0	18.0				7.8	0.8	0.8
Ashanti	Kumasi								0.0	0.0	4.6				2.0	0.0	0.4
Ashanti	Mampong	Semirural													1.4	0.0	0.6
Western	Sekondi/Tako	Urban													1.0	0.4	0.4
Western	Takoradi	Urban															
Western	Eikwe	Semirural													2.8	0.2	3.0
Middle BeltBrong Ahafo	Sunyani	Urban				1.6	1.2	2.8	0.0	0.0	4.0				2.5	0.4	4.1
Middle BeltBrong Ahafo	Wenchi	Semirural				0.0	0.0	1.5	0.0	0.0	4.0						
Northern	Tamale	Urban													1.0	0.0	1.0
Northern	Bole	Semirural													1.9	0.8	1.1
Northern	Nalerigu	Semirural													1.0	0.0	1.0
Upper West	Wa	Urban							0.0	0.0	1.8				2.8	0.2	3.0
Upper West	Hamile	Semirural													3.6	0.0	0.7
Upper West	Jirapa	Semirural							0.4	0.0	0.0				1.9	0.3	0.3
Upper West	Nandom	Semirural													2.0	0.0	2.0

Table B.1. (cont.) Prevalence of HIV Infection among Antenatal Women by Region, Sentinel Surveillance Sites and HIV Types

REGION	LOCATION	RESIDENCE	1995			1996			1997			1998		
			1	2	1&2	1	2	1&2	1	2	1&2	1	2	1&2
Greater Accra	Korle-Bu	Urban							2.8	0.0	0.0	2.2	0.0	0.0
Greater Accra	Adabraka	Urban	1.3	0.0	1.3	2.2	0.0	0.0	1.7	0.0	0.4	3.4	0.0	0.0
Upper East	Bolgatanga	Urban	1.4	0.2	0.0	1.0	0.0	0.0	2.6	0.0	0.2	2.6	0.2	0.2
Upper East	Bawku	Semirural	2.2	0.0	0.2	1.2	0.0	0.0	1.4	0.0	0.2	1.8	0.0	1.8
Central	Cape Coast	Urban	1.8	0.0	0.6	1.8	0.0	0.8	0.8	0.0	0.0	2.6	0.0	0.8
Central	Assin Fosu	Semirural	0.6	0.2	0.4	1.2	0.2	0.2	1.2	0.0	0.0	3.6	0.0	0.0
Volta	Ho	urban	1.0	0.0	0.6	0.4	0.0	2.4	1.6	0.2	2.0	2.0	1.2	0.8
Volta	Hohoe	Semirural	2.0	0.0	1.2	2.1	0.0	0.0	1.6	0.6	2.0	1.6	0.6	2.0
Eastern	Koforidua	Urban	2.6	0.4	0.8	1.6	0.4	0.6	3.2	0.0	1.0	2.4	0.0	0.0
Eastern	Agomanya	Semirural	7.1	0.0	3.4	8.6	0.0	4.2	11.4	0.2	1.8	10.2	0.8	2.2
Ashanti	Kumasi	Urban	2.8	0.0	0.4	2.2	0.2	1.4	4.9	0.3	0.3	6.4	0.2	0.2
Ashanti	Mampong	Semirural	3.2	0.2	0.2	1.4	0.2	0.4	3.8	0.0	1.4	3.7	0.9	0.5
Western	Sekondi/Tako	Urban												
Western	Takoradi	Urban				3.8	0.2	0.2	3.4	0.2	0.2	3.0	0.0	0.0
Western	Eikwe	Semirural	0.0	0.0	5.6	4.7	0.2	0.8	5.4	0.0	0.4	5.2	0.0	0.6
Brong Ahafo	Sunyani	Urban	0.0	0.0	2.6	1.4	0.4	0.4	1.8	0.2	2.0	3.4	0.0	0.0
Brong Ahafo	Wenchi	Semirural	2.8	0.2	0.2	2.0	0.0	0.6	2.4	0.0	0.0	2.0	0.0	0.0
Northern	Tamale	Urban	0.8	0.0	0.2	1.4	0.0	0.2	1.0	0.0	0.0			
Northern	Bole	Semirural	1.3	0.7	0.7									
Northern	Nalerigu	Semirural	0.8	0.0	0.2	0.2	0.0	0.2	0.2	0.0	0.0			
Upper West	Wa	Urban	0.8	0.0	0.8	1.4	0.0	0.4	1.3	0.0	0.3	1.7	0.0	0.6
Upper West	Hamile	Semirural	3.4	0.8	4.2									
Upper West	Jirapa	Semirural	0.3	0.0	0.3	1.7	0.0	1.3	1.4	0.0	0.0			
Upper West	Nandom	Semirural	2.5	0.4	2.9									

Table B.2 Prevalence of HIV Infection among Antenatal Women by Region and Sentinel Surveillance Sites

REGION	LOCATION	RESIDENCE	1992	1994	1995	1996	1997	1998	1999	2000
Greater Accra	Korle-Bu	Urban					2.8	2.2	2.2	2.2
Greater Accra	Adabraka	Urban	1.2		1.3	2.2	2.1	3.4	2.0	4.0
Upper East	Bolgantanga	Urban		2.0	1.6	1.0	2.8	3.0	1.6	1.0
Upper East	Bawku	Semirural		2.4	2.4	1.2	1.6	3.6	1.6	1.6
Central	Cape Coast	Urban		3.5	2.4	2.6	0.8	3.4	3.2	3.0
Central	Assin Fosu	Semirural		2.5	1.2	1.6	1.2	3.6	2.0	2.4
Volta	Ho	Urban		2.4	1.6	2.8	3.8	4.0	5.2	4.2
Volta	Hohoe	Semirural		2.3	3.2	2.1	4.2	4.2	4.4	5.0
Eastern	Koforidua	Urban	3.2	2.4	3.8	2.6	4.2	2.4	1.0	2.8
Eastern	Agomanya	Semirural	18.0	9.4	10.5	12.8	13.4	13.2	8.2	7.8
Ashanti	Kumasi	Urban	4.6	2.4	3.2	3.8	5.5	6.8	4.9	3.8
Ashanti	Mampong	Semirural		2.0	3.6	2.0	5.2	5.1	3.4	1.6
Western	Takoradi	Urban		1.8		4.2	3.8	3.0	4.0	3.0
Western	Eikwe	Semirural		3.0	5.6	5.7	5.8	5.8	4.8	3.2
Brong Ahafo	Sunyani	Urban	4.0	4.1	2.6	2.2	2.0	3.4	2.8	2.1
Brong Ahafo	Wenchi	Semirural	4.0		3.2	2.6	2.4	2.0	2.2	1.0
Northern	Tamale	Urban		1.0	1.0	1.6	1.0		0.8	1.3
Northern	Bole	Semirural		3.8	2.7					
Northern	nalerigu	Semirural		1.0	1.0	0.4	0.2		0.6	1.4
Upper West	Wa	Urban	1.8	3.0	0.8	1.8	1.6	2.3	2.2	1.4
Upper West	Hamile	Semirural	0.4	4.3	4.2					
Upper West	Jirapa	Semirural		2.5	0.3	3.0	1.4		0.6	1.5
Upper West	Nandom	Semirural		2.0	2.9					

Table C.1. Trends in knowledge about AIDS among women and men, Ghana 1993-98

	DHS 1993	DHS 1998
Has heard of AIDS		
Women	95	97
Men	96	99
Knows ways to avoid HIV		
Women	na	81
Men	na	88
Heard of Other STDs		
Women	56	62
Men	70	74
Heard about Aids through electronic/print media		
Women	70	80
Men	83	87
Knows HIV can be transmitted mother to child[1]		
Women	82	88
Men	85	89
Knows infected person can appear healthy		
Women	70	75
Men	77	82
Knows that HIV cannot be transmitted by mosquitoes		
Women	20	
Men	28	
Avoid mosquitoes bites		
Women		0.41
Men		na
Knows AIDS can be avoided by sticking to one partner		
Women	na	63
Men	na	60
Thinks one can get AIDS by not using a condom[2]		
Women	84	na
Men	89	na
A person can avoid AIDS by using a condom[2]		
Women	na	22
Men	na	40
Feels that they are at risk for HIV transmission[1]		
Women	na	32
Men	na	32
Feels that they are at risk for other STDs[3]		
Women	na	33
Men	na	33

1 Includes individuals who have heard of AIDS
2 Question for 1993 was prompted, while that for 1998 was not prompted
3 Includes individuals who have heard of other STDs

Table C.2. Proportion of women and men reporting knowledge and use of condoms, Ghana 1988-98

	1988 DHS	1993 DHS	1998 DHS
Aware of condoms			
Women	48	80	87
Men	na	85	93
Knows where to get condoms			
Women	38	54	66
Men	na	na	77
Thinks condom can be used more than once[1]			
Women	na	na	na
Men	na	12	na
Has ever used condoms[2]			
Women	5	14	16
Men	na	36	40
Used condom in the last four weeks[3]			
Women	na	na	na
Men	na	17	14

1 Includes individuals who have heard about condoms
2 Includes sexually active individuals
3 Includes those who had sex in the last four weeks

Table C.3. The proportions of men and women engaging in recent sexual behavior, Ghana 1988-98

	1988 DHS	1993 DHS	1998 DHS
Sexual Abstinence			
No sex during the past month[1]			
Women	63	54	59
Men	na	48	58
No sex during the past year[1]			
Women	28	25	30
Men	na	21	34
Had premarital sex during past year[2]			
Women	40	49	32
Men	na	46	24
Multiple partnership			
One or more non-regular partners in the past year[3]			
Women			na
Men			37
Two or more non-regular partners in the past year[3]			
Women			na
Men			13
Four or more non-regular partners in the past year[3]			
Women			na
Men			2
Sex with person other than spouse in the past year[4]			
Women			na
Men			24

1 Includes all individuals
2 Includes never-married individuals aged 15-24
3 Includes sexually active individuals
4 Includes individuals in a cohabiting union (married and living together)

Table C.4. Trends in knowledge about AIDS among women and men by residence, Ghana 1993-98

	DHS 1993		DHS 1998	
	Urban	Rural	Urban	Rural
Has heard of AIDS				
Women	99	92	99	95
Men	99	94	100	98
Knows ways to avoid HIV				
Women	na	na	88	77
Men	na	na	92	86
Heard of other STDs				
Women	66	48	72	57
Men	78	65	80	71
Heard about AIDS through electronic/print media				
Women	79	64	91	74
Men	90	79	93	84
Knows HIV can be transmitted mother to child[1]				
Women	90	77	93	86
Men	94	80	93	87
Knows infected person can appear healthy				
Women	81	63	84	70
Men	86	71	87	79
Knows that HIV cannot be transmitted by mosquitoes				
Women	23	18		
Men	35	25		
Avoid mosquitoes bites				
Women			0.34	0.44
Men			na	na
Knows AIDS can be avoided by sticking to one partner				
Women	na	na	65	57
Men	na	na	63	59
Thinks one can get AIDS by not using a condom[2]				
Women	91	80		
Men	94	86		
A person can avoid AIDS by using a condom[2]				
Women			26	18
Men			44	36
Feels that they are at risk for HIV transmission[1]				
Women	na	na	39	28
Men	na	na	37	29
Feels that they are at risk for other STDs[3]				
Women	na	na	37	30
Men	na	na	37	31

1 Includes individuals who have heard of AIDS
2 Question for 1993 was prompted, while that for 1998 was not prompted
3 Includes individuals who have heard of other STDs

Table C.5. Proportion of women and men reporting knowledge and use of condoms by residence, Ghana 1988-98

	1988 DHS		1993 DHS		1998 DHS	
	Urban	Rural	Urban	Rural	Urban	Rural
Aware of condoms						
Women	63	41	90	73	93	83
Men	na	na	93	80	97	90
Knows where to get condoms						
Women	51	31	69	45	80	59
Men	na	na	na	na	90	69
Thinks condom can be used more than once[1]						
Women	na	na	na	na	na	na
Men	na	na	8	14	na	na
Has ever used condoms[2]						
Women	9	3	23	9	23	13
Men	na	na	50	28	52	33
Used condom in the last four weeks[3]						
Women	na	na	na	na	na	na
Men	na	na	23	13	16	14

1 Includes individuals who have heard about condoms
2 Includes sexually active individuals
3 Includes those who had sex in the last four week