



**AIDS in Africa
During the Nineties**

KENYA

A review and analysis of survey
and research results

**Office of the President, Kenya
National AIDS Control Council**

**Ministry of Health
Kenya National AIDS/STD/TB/Leprosy
Control Programme**

MEASURE *Evaluation*

**Population Services International
2004**

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AIDS in Africa During the Nineties: Uganda. A review and analysis of surveys and research studies. Uganda AIDS Commission, MEASURE Evaluation, Uganda Ministry of Health. 2003.

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Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal clinic
CBS	Central Bureau of Statistics
GOK	Government of Kenya
GPA	Global Programme on AIDS
HIV	Human Immunodeficiency Virus
IEC	Information, education, and communication
KDHS	Kenya Demographic and Health Survey
MICS	Multiple Indicator Cluster Survey
MOH	Ministry of Health
MTCT	Mother to child transmission
NACC	National AIDS Control Council
NASCOP	National AIDS and STD Control Programme
PSI	Population Services International
R/P	Rural and peri-urban
SES	Socio-economic status
STD	Sexually transmitted disease
STI	Sexually transmitted infection
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nation Children's Fund
VCT	Voluntary counselling and testing

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Chapter 1 Introduction

In Kenya, the first reported case of human immunodeficiency virus (HIV) occurred in the mid 1980s. Since then, the number of cases has risen, and by the end of the 1990s, the Kenyan Ministry of Health (MOH) estimated that a total of 2.2 million Kenyans were infected with HIV. At that time the prevalence rate among Kenyan adults was estimated at 13.5 percent, although the rate was much higher (18%) in urban areas. Furthermore, an estimated 1.5 million Kenyans had already died of acquired immunodeficiency syndrome (AIDS). Because most of the people dying of AIDS were between age 20–45, these deaths have had a profound impact on Kenya's demographic characteristics and its economy and have left behind many orphans (KMOH, 2001).

The purpose of this report is to present data and information from a variety of sources to document the changes in the epidemiology of HIV and in AIDS-related knowledge and behaviour that occurred during the 1990s.

Kenya's national response

In 1987, the National AIDS Control Programme was established. At that time, the focus was on creating AIDS awareness, establishing blood safety, and the clinical management of AIDS-related opportunistic infections. The program also focused on capacity building for the management of national AIDS control programmes. The government response increased in 1992 when it became apparent that HIV prevalence rates were steadily increasing. To stem the accelerated spread of HIV, the control of sexually transmitted infections (STIs) became a priority. In 1994, the Government borrowed US\$ 40 million from the World Bank specifically for the STI project to facilitate the implementation of STI prevention and control programmes. This led to the integration of sexually transmitted disease (STD) control with AIDS programmes, thus establishing the National AIDS and STD Control Programme (NAS COP) in 1994 (KMOH, 2001). In addition, the management of tuberculosis (TB) was incorporated into the NAS COP, because more than 40 percent of patients with TB are HIV positive (Kenya et al., 1998).

AIDS was recognized as a development setback. The Seventh National Development Plan and the Fifth District Development Plans of 1997–2001 addressed the AIDS problem (GOK, 1997). A policy framework and organisational structure was developed to guide programme implementation, supervision, monitoring, and evaluation HIV/AIDS prevention and care activities. This culminated in the parliamentary approval of *Sessional Paper Number 4 of 1997 on AIDS in Kenya* as the national AIDS policy (GOK/MOH, 1997). The goal of this policy is to provide a framework within which AIDS prevention and care efforts would be undertaken for the next 15 years and beyond.

In terms of interventions, the AIDS policy focuses on the management of STIs, behaviour change programmes, and voluntary counselling and testing (VCT) as key strategies to reduce the number of new infections. Key interventions include the following:

- HIV VCT, which has been shown to have a role both in preventing HIV infection and in serving as entry point to care for those infected
- Behaviour change communication promotes safer sex through condom use, partner reduction, and delay in sexual debut; and efforts to integrate AIDS education within the school curricula
- Health service delivery is focused on:

- Control and management of other STIs that are often coinfections with HIV Prevention of mother to child transmission (MTCT) through antenatal clinics
 - Provision of antiretroviral therapy
 - Safe blood supply
- Promotion of home-based care.

The AIDS policy prompted national debates and pronouncements about the causes and implications of the spread of HIV in Kenya. This led President Moi to publicly declare the disease a national disaster in November 1999:

AIDS is not just a serious threat to our social and economic development, it is a real threat to our very existence....AIDS has reduced many families to the status of beggars...no family in Kenya remains untouched by the suffering and death caused by AIDS...the real solution of the spread of AIDS lies with each and every one of us (KNACC, 2000).

This declaration provided the necessary impetus for the establishment of the National AIDS Control Council (NACC) aimed at strengthening the national response to the epidemic. The NACC developed a strategic plan for managing and coordinating the national AIDS programme. The strategic plan was linked to the Seventh National Development Plan (1997–2001) and the National Poverty Eradication Plan (1997–2001). The importance of the strategic plan lies in its multisectoral and decentralized approach, addressing key areas for the control of HIV/AIDS as well as mechanisms for the mitigation of the socioeconomic impacts at individual, family, community, and national levels. The strategic plan is based on the following five priority areas (KNACC, 2000):

- Prevention and advocacy
- Treatment, continuum of care, and support
- Mitigation of socioeconomic impacts
- Management and coordination
- Monitoring, evaluation, and research.

By focusing on the priority areas, the principle objective of the strategic plan is to slow the spread of the epidemic by:

- Reducing HIV prevalence in Kenya by 20–30 percent among people age 15–24 years by 2005
- Increasing access to care and support for people infected and affected by HIV/AIDS
- Strengthening response capacity and coordination at all levels.

The HIV/AIDS epidemic has also been recognized as a gender issue. The disease disproportionately affects women and adolescents who are socially, culturally, biologically, and

economically more vulnerable. This realization led to the development of the document *Mainstreaming Gender into the Kenya National HIV/AIDS Strategic Plan 2000–2005* (KNACC, 2002).

Key data sources

This report brings together the results of a decade of research on HIV/AIDS in Kenya. Since 1990, the MOH has been collecting HIV seroprevalence data at selected antenatal clinics (ANCs), which serve as sentinel surveillance sites. Prevalence of HIV throughout the country is estimated based on these data. Results from sentinel surveillance form the basis of Chapter 2, which focuses on the spread of HIV/AIDS in Kenya. This report also includes a review of the literature presenting the results of research studies conducted in Kenya over the last decade and of data from the 1979, 1989, and 1999 national population censuses.

In addition to these data sources, several cross-sectional, population-based national surveys were conducted in Kenya between 1989 and 2000. These include: the Global Programme on AIDS (GPA) survey conducted in 1989; the Kenya Demographic and Health Surveys (KDHS) conducted in 1989, 1993, and 1998; and two surveys conducted in 2000, one by Population Services International (PSI) and the Multiple Indicator Cluster Survey (MICS) by United Nations Children's Fund (UNICEF). These surveys gathered information about knowledge of HIV/AIDS, attitudes towards HIV/AIDS, sexual behaviours, and condom use. These data allow us to explore trends in key indicators related to HIV/AIDS in Kenya. Throughout the report, any relevant urban-rural and gender differences are highlighted.¹

These surveys were conducted by different organizations for different purposes. For this reason, the phrasing of questions sometimes differed, making comparisons difficult. In these cases, the data are either omitted or, if included, the differences in methodology are clearly stated. In addition, the sampling strategies differed among surveys and may have created a difference in the results. The background characteristics of the survey respondents are presented below, in Table 1.1 for women and Table 1.2 for men. The differences in the background characteristics of the samples should be considered when interpreting the results presented later in this report, but some reflect an actual difference over time.

¹ The data from these surveys are displayed in various tables and figures throughout the text.

Table 1.1 Background characteristics of female survey respondents, results presented as percentage of total sample

	1989 GPA	1989 DHS	1993 DHS	1998 DHS	2000 MICS	2000 PSI
Age						
15–19	19	21	23	23	21	29
20–24	18	18	22	20	20	23
25–29	21	19	16	17	18	20
30–34	13	14	14	13	14	16
35–39	14	13	10	13	12	11
40–44	8	9	8	8	9	--
45–49	7	6	6	6	5	--
Residence						
Urban	21	17	18	23	27	41
Rural	79	83	82	77	73	59
Education						
None	N/A	25	18	12	16	5
Primary		54	58	59	57	56
Secondary or above		20	24	29	27	39
Currently married²						
Yes	70	67	61	61	N/A	57
No	27	33	39	39		43
Province						
Nairobi	N/A	8	7	10	16	9
Central		16	15	11	13	17
Coast		7	10	8	9	10
Eastern		18	19	18	15	18
North Eastern		--	--	--	1	--
Nyanza		17	15	21	16	15
Rift Valley		21	21	22	20	18
Western		14	15	11	10	13
n (weighted)	1,482	7,150	7,540	7,881	10,530	1,294

² Total for 1989 GPA sample does not add up to 100% due to a small number of missing cases.

Table 1.2 Background characteristics of male survey respondents, results presented as percentage of total sample

	1989 GPA	1989 DHS	1993 DHS	1998 DHS	2000 MICS	2000 PSI
Age						
20–24	21	N/A	22	23	N/A	27
25–29	17		17	18		22
30–34	16		18	16		16
35–39	16		13	14		16
40–44	12		13	11		10
45–49	9		10	11		9
50–54	9		7	7		--
Residence						
Urban	24		24	30		39
Rural	76		76	70		61
Education						
None	N/A		8	4		4
Primary			54	51		45
Secondary or above			38	45		50
Currently married³						
Yes	75		71	69		48
No	23		29	31		52
Province						
Nairobi	N/A		11	13		11
Central			14	10		16
Coast			10	7		12
Eastern			17	19		17
North Eastern			--	--		--
Nyanza			12	19		12
Rift Valley			23	22		18
Western			13	11		14
n (weighted)	959		2,336	2,596		731

As the tables above show, most of the samples are comparable to each other in terms of geographic distribution, age distribution, and the education and marital status of the respondents. The 1998 DHS and 2000 PSI surveyed men younger than 15 to 19 years of age, while the others did not; for this reason, men younger than 20 years of age were excluded from the analysis (Waithaka, 2000). The 2000 PSI was designed to over-sample women age 15–19 in order to get a bigger sample for analysis of cross-generational sexual relationships. In addition, women age 15–39 and men age 15–49 were sampled (Waithaka, 2000). This sampling strategy would

³ Total for GPA sample does not add up to 100% due to a small number of missing cases.

explain why the 2000 PSI sample is younger. Another difference is that the 2000 PSI is more urban than the other surveys. These differences in age and type of place of residence may explain some of the other differences in background characteristics of the PSI sample, such as higher education and fewer married respondents. For this reason, the results from the PSI data should be cautiously compared with that of the other surveys. For example, even if there had been no change in knowledge of HIV/AIDS between 1998 and 2000, knowledge indicators calculated from the PSI data may be higher than that of other surveys simply because this sample represents younger, urban, and more educated respondents. Similarly, some differences in sexual behaviour indicators may result from the demographic differences in the PSI sample.

Chapter 2 The Spread of HIV in Kenya

The first case of HIV in Kenya was reported in the early 1980s. At that time, HIV/AIDS was not considered a serious issue. The infection spread unabated, and by 1992, there were about 730,000 people (700,000 adults and 30,000 children) infected with HIV in Kenya. Table 2.1 shows that in a short period of time HIV/AIDS became a devastating problem for Kenya. By 2000, it was estimated that more than 2 million people were infected with HIV.

Table 2.1 Estimated number of people infected with HIV, by year

Year	Total	Adults	Children
1993	760,000	730,000	30,000
1995	1,100,000	1,030,000	70,000
1999	2,100,000	2,000,000	100,000
2000	2,200,000	2,100,000	100,000

Source: Ministry of Health. AIDS in Kenya: Background, Projections, Impact, Interventions and Policy: 1994, 1996, 1999, and 2001.

This chapter provides a synthesis of trends in HIV incidence and prevalence based on sentinel surveillance data and relevant research studies. Where feasible, gender, regional, and urban-rural comparisons are provided. The rapid spread of HIV in Kenya is mainly through sexual contact, accounting for 90 percent of the infections, while MTCT and contact with infected blood account for 10 percent of transmission. Overall, adult HIV prevalence rose from 5.3 percent in 1990 to 13.5 percent in 2000. Generally, the differences based on region, urban-rural residence, sex, and age are as follows (KNACC, 2000):

- Prevalence is higher in urban areas (16–17%) compared with rural areas (11–12%)
- Adults age 15–49 make up 80–90 percent of infections
- Infection rates are higher among women age 15–19 and men age 35–49
- Children under 5 years of age make up 5–10 percent of infections
- Most AIDS deaths occur between age 25–35 for men and age 20–30 for women
- HIV prevalence varies markedly between regions.

Sentinel surveillance system in Kenya

NASCOP of the KMOH has conducted surveillance of HIV since 1990 among two population groups: pregnant women and people with STIs. The pregnant women studied were age 15–49 who attend an ANC for the first time during the current pregnancy. Each year, 200 to 300 women are tested for HIV at each site. The sentinel system started with 23 ANC sites in 1990, but the sites were reduced to 13 in 1992. All were located in urban centres. In 1996, six rural and peri-urban centres were included, bringing the total number of sites to 19. As of 2000, the system

operates in 14 urban and eight rural and peri-urban sites throughout the country. Men and women age 15–49 years seeking medical treatment for a current episode of an STI comprise the second group under surveillance. The first group, ANC attendees, represents the healthy, sexually active, and reproductive women in the population who have at least one antenatal visit, while the group with STIs represents a high-risk population (KMOH, 2001).

The difference between infection rates in ANC attendees, who represent the general population, and STI patients, who represent high-risk groups and who are suggestive of being a reservoir of the infection is evident in Table 2.2.

Table 2.2 HIV infection rates (%) among STI patients and ANC attendees, 1990–2000

Year	HIV Infection Rate	
	STI Patients (%)	ANC Attendees (%)
1990	16.0	6.2
1991	21.8	10.3
1992	29.2	14.4
1993	24.0	11.8
1994	26.5	20.1
1995	25.5	22.6
1996	21.8	11.3
1997	41.8	17.2
1998	32.3	20.1
1999	31.2	17.1
2000	33.9	17.7

Source: Baltazar, G. M., K. L. Chebet, C. Cheluget, L. Marram. 2003. HIV/AIDS Surveillance in Kenya. Kenya: MOH/NASCOP.

Estimates of the general HIV prevalence rate are based on the infection rates observed in the ANC population. The estimates assume that rates of HIV in pregnant women closely approximate the rates of HIV infection in the general adult population age 15–49. Note is taken of the fact that young women generally have higher rates of HIV infection than young men, but older men have higher rates of infection than older women.

Data provided by the surveillance system has been useful in facilitating the understanding of the magnitude of the problem as well as influencing major decisions about the control of the epidemic and monitoring of interventions. For example, in 1997, data from the surveillance system showed that HIV infection rates among pregnant women had increased more than two-fold in a period of about six years (from 6% in 1990 to 11% in 1996). This provided the basis for the government to launch its first comprehensive policy paper on AIDS, *Sessional Paper No. 4 on AIDS in Kenya 1997*.

HIV and AIDS epidemiological studies

In addition to national surveillance, the University of Nairobi under the STD/HIV Strengthening Control project, has undertaken HIV and STI surveillance in four clinics in Nairobi since 1991. The project includes training interventions in the management of STIs and peer education for behaviour change. A decline in HIV prevalence in Nairobi was observed, after a peak in 1997 (Figure 2.1). A decline in gonorrhoea and syphilis rates after 1997 was also observed (Figure 2.2).

Figure 2.1 HIV Sero-prevalence, Nairobi 1991–2002

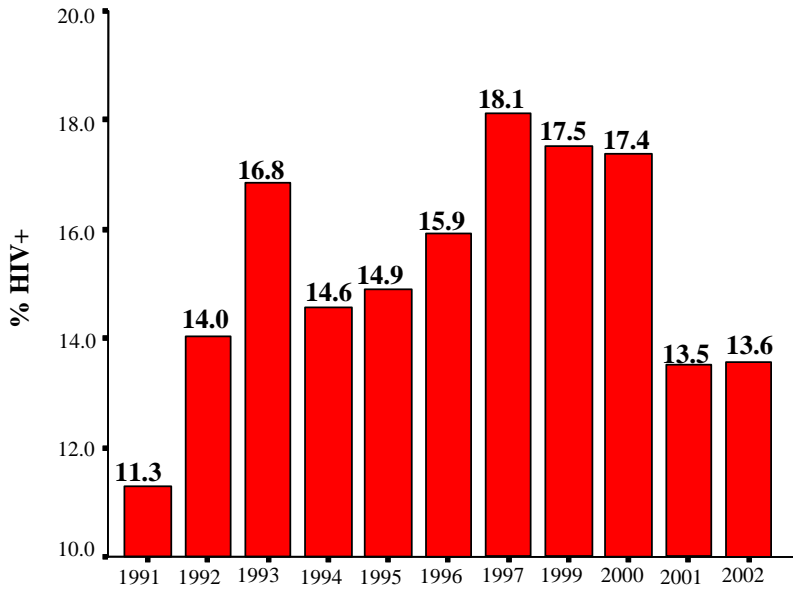
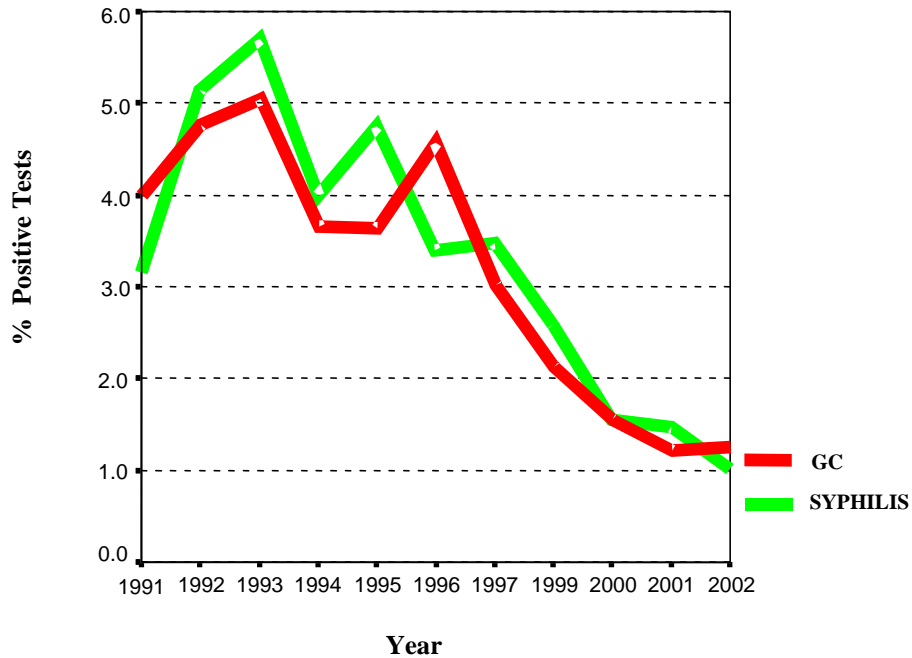


Figure 2.2 Percentage of pregnant women positive for gonorrhoea and syphilis, Nairobi 1991–2002



More specifically, between 1992 and 2001 infection rates in syphilis and gonorrhoea among pregnant women dropped from almost 5 to 1.5 percent. At the same time, HIV infection rates among young women, an approximate measure of new infections, dropped from 16 to 8 percent. This may be attributed to project interventions that focused on management of STDs and education (Ngugi, 2003).

Among risk groups, HIV prevalence is higher. One study found HIV prevalence among female sex-workers in Pumwani, Nairobi, to be 88 percent in 2000. This is a low social economic class of women who have an average of 3.5 clients a day (Ngugi, 2000).

HIV Infection and Poverty

- Within the Multicentre study (1996–97), the link between socio-economic status (SES) and risk of HIV infection in Kisumu, Nyanza, a town of high HIV prevalence, was examined. The finding was that new infections might be occurring fastest among women of low SES. There was a prevalence of 19.8 percent among males and 30.2 percent among females. The risk of infection among low SES women in the 15–25 age group was associated with early sexual debut and marriage, low condom use, high partner change, principally for material support, and high prevalence of STIs (Hargraves, 2003).
- In a baseline assessment for reproductive health needs in Kakamega, Western, poverty resonated in all the discussion groups as an underlying cause of behaviour that creates risks for STI/HIV/AIDS and of an inability to seek treatment promptly for any illness (Olenja, 2001).

The effects of AIDS on morbidity can be indirectly observed through analysis of trends in TB. It appears that many adults in Kenya carry latent TB infection, which is suppressed by a healthy immune system. When HIV weakens the immune system, it can no longer control the TB infection and overt TB can develop. In the absence of HIV, the number of new TB infections would be limited to about 0.2 percent of the total population. A study at Kenyatta National Hospital found that the proportion of patients admitted with TB among all admitted patients doubled from 8 to 16 percent between 1988/89 and 1997. Among the HIV infected patients seen at the hospital, the proportion that also had active TB infection rose from 18 to 27 percent over the same period. Co-infection with HIV and TB has led to increased mortality (KMOH, 2001).

Geographical distribution

The sentinel surveillance system has been established to provide nationally representative data on the HIV epidemic (Figure 2.3). The geographical distribution of sites allows for comparisons between areas. The appendix shows the percentage of women at ANC surveillance sites who tested positive for HIV from the years 1990 to 2000 for the urban sites and 1994 to 2000 for the rural and peri-urban (R/P) sites.

As seen in the appendix, by 1992 two urban sites close to Lake Victoria (Busia, Western and Kisumu, Nyanza) had high proportions (greater than 20%) of pregnant women who were HIV-positive. These urban areas have maintained high proportions of HIV-positive women with Kisumu recording the highest (35%) in 2000 and Busia (34%) in 1999. As soon as rural and peri-urban surveillance was initiated, the site in Kisumu registered high rates paralleling those seen in its urban counterpart. In 1992 Kitale, Rift Valley recorded more than 20 percent of pregnant women with HIV infection, but that level was not sustained in subsequent years.

Figure 2.3 Map of Kenya with sentinel sites



The epidemic seems to have spread eastward towards Central and Coast regions, with the urban sites of Nakuru, Rift Valley, and Thika, Central, having sustained percentages surpassing 20 percent in 1993 and Meru, Eastern, in 1997. Surveillance at the rural and peri-urban site of Kwale, Coast surpassed 20 percent in 1995.

Throughout the 1990s, Kajiado, Rift Valley, and Garissa, North Eastern, which are located in the pastoral/nomadic regions of Kenya, tended to have lower proportions (15% or less) of HIV infected pregnant women. Due to difficulties in accessing health services, women in the pastoral/nomadic regions do not normally attend health facilities for antenatal care. This could possibly account for the low levels of HIV incidence recorded.

Based on these ANC surveillance sites, it is estimated that the overall HIV prevalence rate in Kenya's urban areas has risen from 5.7 percent in 1990 to 17–18 percent in 2000 and from 3.1 to 12–13 percent in rural areas. Even though the rate is lower in rural areas, the actual number of persons infected with HIV is higher in rural areas than in urban areas, because 80 percent of the Kenyan population resides in rural areas. Of the approximately 2 million people infected with HIV in 2000, about 470,000 HIV-infected adults were in urban areas and about 1.5 million in rural areas.

Using these estimates for urban prevalence and the population data from 1989 and 1999 national censuses, the number of people infected with HIV is calculated by district (Table 2.3). For rural areas, prevalence was estimated as a certain proportion of the urban prevalence based on surveillance information from the R/P sites. Rural prevalence was assumed to be 40, 70, or 90 percent of the urban prevalence depending on the degree of isolation or integration of the rural and urban populations.

Table 2.3 Estimated numbers of HIV-infected adults age 15–49, by province, June 2000

Province	Prevalence (%)	Number HIV+
Central	13	240,000
Coast	10	135,000
Eastern	16	380,000
Nairobi	16	175,000
North Eastern	3	15,000
Nyanza	22	480,000
Rift Valley	11	390,000
Western	12	210,000
Total	13.5	2,025,000

Source: Kenya. Ministry of Health. AIDS in Kenya: Background, Projections, Impact, Interventions and Policy, Sixth edition, 2001.

Table 2.3 shows that Nyanza province has the highest prevalence of HIV in the country, accounting for nearly a quarter of the country’s HIV-infected individuals. Nairobi and Eastern provinces have the second highest prevalence, together contributing more than a quarter of the infections. The remainder of HIV-infected individuals comes from provinces with prevalence rates between 10 and 13 percent. North Eastern has the lowest prevalence, but this has to be interpreted with caution, noting that this is a geographically inaccessible region and, therefore, use of health facilities, including ANC, is minimal.

Age and sex differentials

Even though HIV prevalence by age and sex has not been well documented in Kenya, it is generally accepted that the infection levels for women are higher than for men. Analysis of data from Kisumu and Ndola under the World Health Organization (WHO) multicentre study found that in the 15–19 year age group infection rates for women are six times that of men, and in the 20–24 year age group infection rates for women are three times that for men (Population Council, 2002). However there is a tendency for rates to be similar in the 25–39 year age group where the ratio is close to 1. For men, high levels of HIV prevalence are maintained in the 40–49 age group (Table 2.4).

Table 2.4 HIV prevalence in Kisumu District, by age and sex, 1997

	Age groups (years)					Total
	15–19	20–24	25–29	30–39	40–49	
Women	22.3%	39.0%	38.6%	31.7%	19.4%	30.9%
Men	4.2%	13.4%	29.4%	34.0%	29.9%	21.0%
Ratio	5.3	2.9	1.3	0.9	0.6	1.5

Source: Kenya, P., S. A. Z. Mulindi, J. Onsongo, and M. Gatei. 1998. HIV/AIDS in Kenya: Situation Analysis. National AIDS and STD Control Programme. Ministry of Health: Nairobi, Kenya.

Cross Generational Relationships

A multicentre study (1996–1997) on factors determining the differential spread of HIV in Africa included Kisumu, Nyanza in western Kenya as one of the study sites. Sexual networking, involving older men for girls and to a lesser extent older women for boys, for material support was reported. However, in either case regular girlfriends or boyfriends were retained (Kimani, 1999)

Researchers for PSI conducted focus group interviews with 15–19 year-old women and individual interviews with men older than 30 who were in cross generational relationships (relationships in which the age difference between partners was 10 or more years) (Longfield, 2002). They found that

- Financial gain motivated women to enter into these relationships; sexual gratification motivated men.
- Women considered that their biggest risk of the relationship was violence from the man's spouse and HIV and STI as the lowest risk. Men also rated discovery of the relationship by their wives as the biggest risk and HIV and STI as the lowest risk.
- Both men and women stated that due to this low perception of risk of infection, condom use was low in these relationships.

ANC surveillance site data from 1996 to 2000 was broken down by age group (Table 2.5). Disregarding the 45–54 year age group in Table 2.5, there is a similar trend in HIV prevalence among pregnant women in Kisumu District (Table 2.4) and at all urban surveillance sites (Table 2.5) after 1997; the highest levels are seen in the 25–34 year age groups.

Table 2.5 Percentage of pregnant women testing HIV-positive by age group at urban sentinel sites, 1996–2000

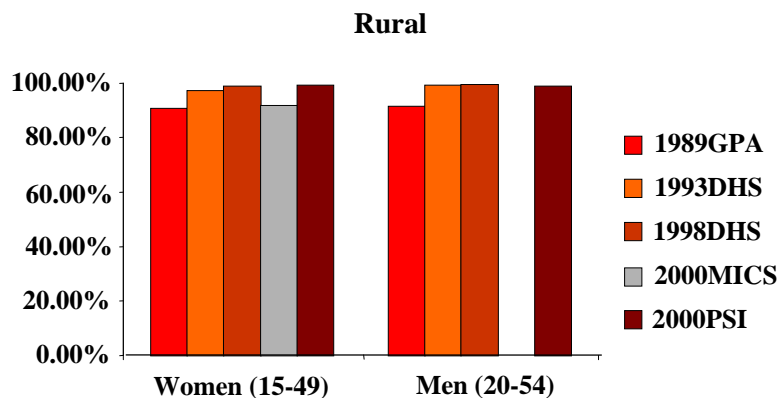
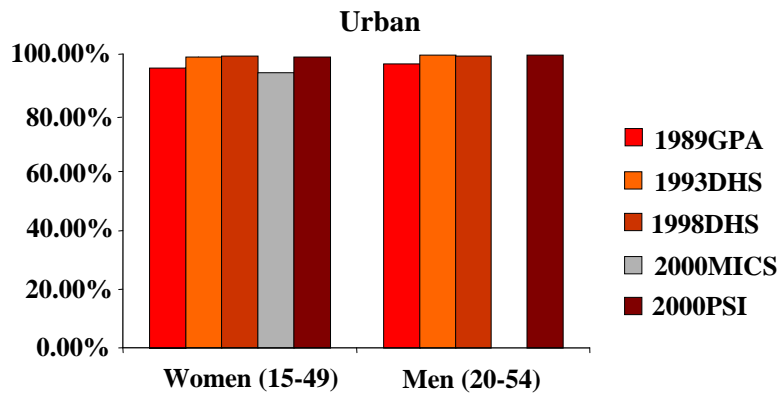
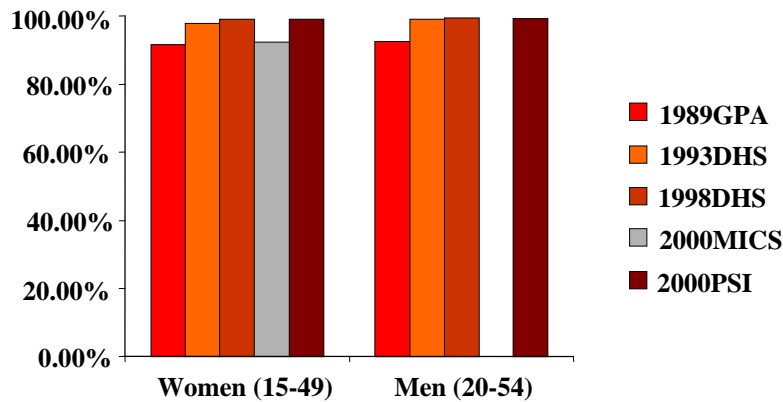
Age Group	1996 (%) (n = 3,064)	1997 (%) (n = 2,812)	1998 (%) (n = 4,431)	2000 (%) (n = 3,046)
15–19	10.7	19.1	17.7	14.6
20–24	12.9	23.0	19.1	17.3
25–29	15.1	24.1	17.8	19.7
30–34	19.0	22.8	21.4	20.1
35–44	18.6	19.3	17.7	17.4
45–54	30.8	37.5	16.7	17.4
All ages	14.0	22.2	18.7	17.9

Source: K’oyugi, B and J. Muita. 2002. The impact of a growing HIV/AIDS epidemic. The Kenyan Children in AIDS Public Policy and Child Wellbeing, edited by A. C. Giovanni. Florence.

Chapter 3 AIDS-related Knowledge and Attitudes

The earliest national, population-based data regarding HIV/AIDS knowledge and attitudes in Kenya is available from the GPA survey conducted in 1989 (Figure 3.1). At that time, about 92 percent of women and men had heard of AIDS, with slightly more urban residents than rural residents. By 1993 when this question was introduced to the KDHS, awareness of HIV/AIDS in Kenya was virtually universal; 98 percent of women and 99 percent of men in Kenya had heard of AIDS. Differences by place of residence (urban-rural) were no longer evident. For the rest of the decade, awareness of HIV/AIDS remained high.

Figure 3.1 Knowledge of AIDS



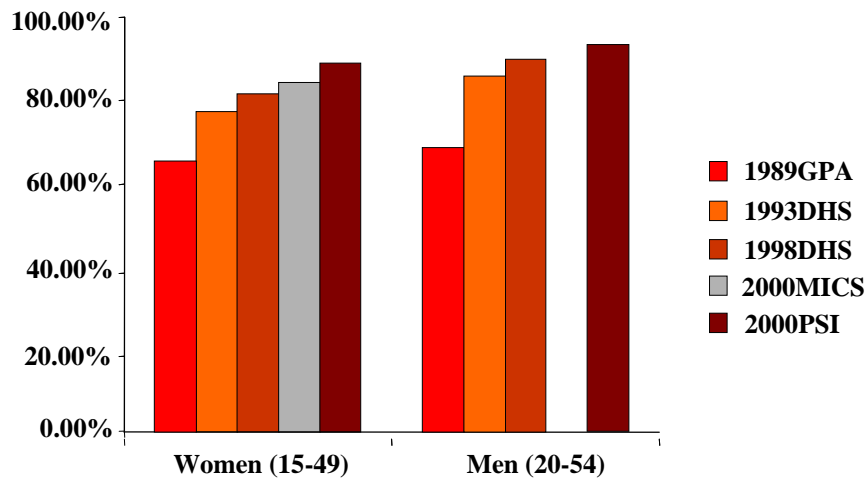
One of the key interventions of HIV/AIDS prevention programs has been education. Messages have focused on modes of transmission and ways to prevent HIV infection. The knowledge indicators are divided into two categories: those focusing on modes of transmission and those focusing on prevention.

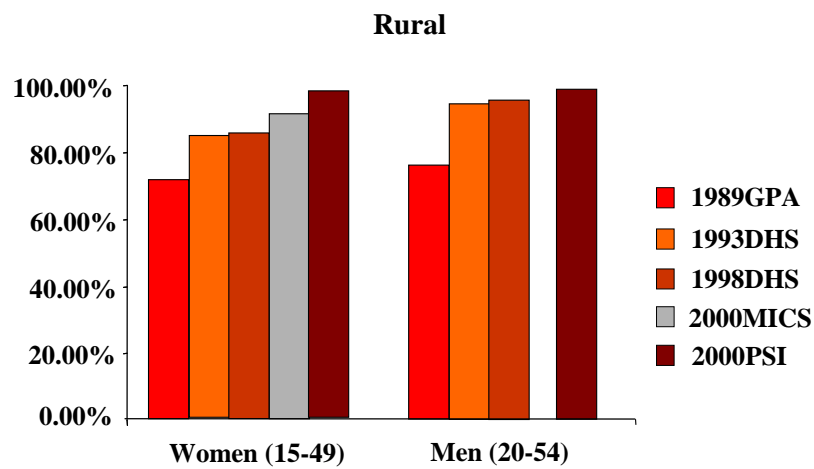
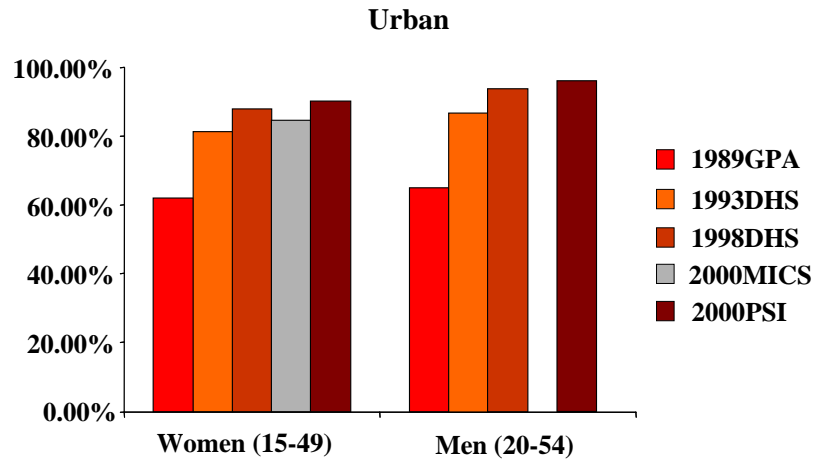
The last section of this chapter explores attitudes toward HIV/AIDS such as risk perception, knowing someone with HIV, and HIV testing (having been tested, wanting to be tested, and knowing a source of testing).

Knowledge that AIDS can be avoided

In 1989, the GPA survey asked respondents whether a person could avoid getting AIDS by changing his or her behaviour. At that time, about two-thirds of the respondents (65% of the women and 69% of the men) responded positively. As shown in Figure 3.2, during the 11 years that followed, the percentage of Kenyans believing that AIDS could be avoided grew steadily. The data collected by PSI in 2000 show that 89 percent of women and 93 percent of men knew that AIDS can be avoided. Generally, urban respondents were slightly more knowledgeable than rural respondents. Although most people know that AIDS could be avoided, unless they have correct knowledge about how HIV is transmitted and ways to prevent becoming infected, it is unlikely that they will take the necessary precautions to avoid infection.

Figure 3.2 Knowledge that HIV can be avoided





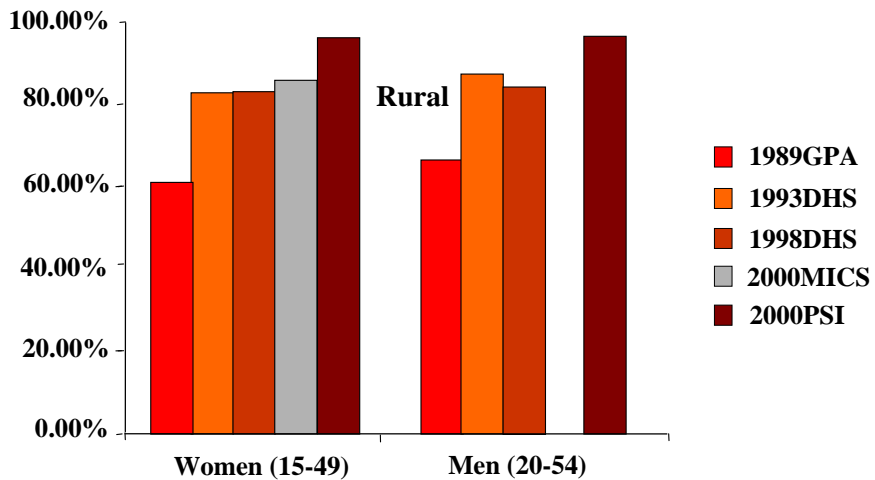
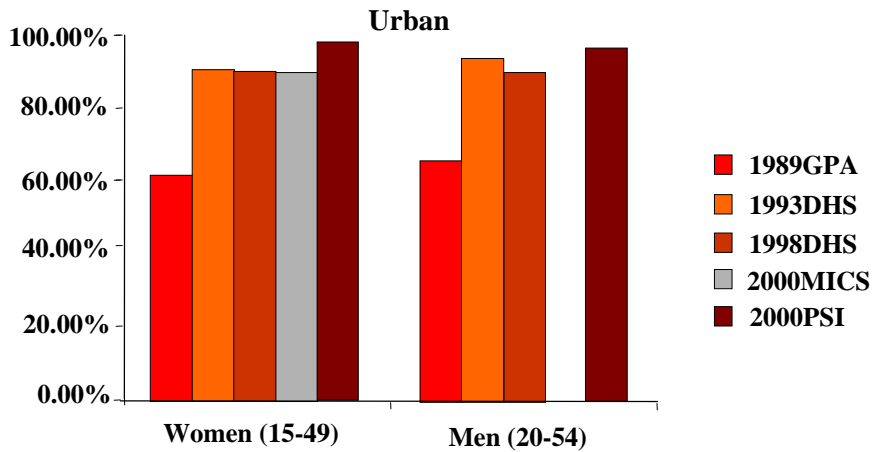
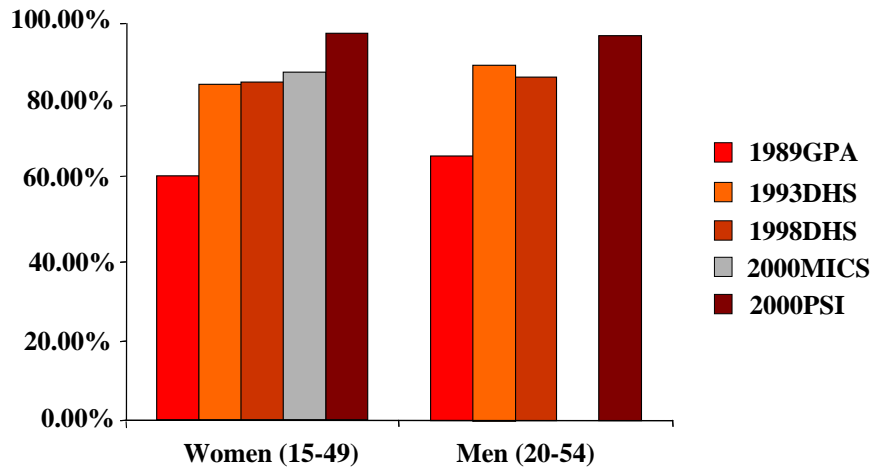
Knowledge about HIV transmission

In order to assess existing knowledge and identify widespread misconceptions about HIV, respondents were asked questions about modes of HIV transmission and questions pertaining to misconceptions about HIV. They were asked whether HIV could be transmitted from mother to child, whether a healthy-looking person can be infected with the AIDS virus, and whether HIV could be transmitted by insects or by sharing eating utensils with an HIV-infected person. A composite indicator (no incorrect beliefs about AIDS) measuring the percentage of all respondents who rejected the two misconceptions and knew that a healthy-looking person can be infected was also tracked. The Joint United Nations Programme on HIV/AIDS (UNAIDS) recommends that national AIDS programs monitor this composite indicator as one of two knowledge indicators (the second will be discussed below) (UNAIDS, 2000).

Mother to child transmission (MTCT)

At the time of the 1989 GPA survey, about 61 percent of women and 67 percent of men knew that HIV could be transmitted from mother to child. Knowledge of MTCT increased sharply early in the 1990s. By 1993, 85 percent of women and 90 percent of men were aware that HIV could be transmitted in this way. Throughout the rest of the decade, these figures remained virtually unchanged (Figure 3.3). The percentage of women who knew about MTCT was 85 percent in 1998 and 87 percent in 2000. However, whereas in 1989 there was little evidence of urban-rural differences regarding knowledge of MTCT, by 1993 more women in urban areas (90%) than those in rural areas (83%) knew about MTCT. This urban-rural difference was also evident among male respondents and persisted throughout the 1990s.

Figure 3.3 Knowledge that HIV can be transmitted from mother to child



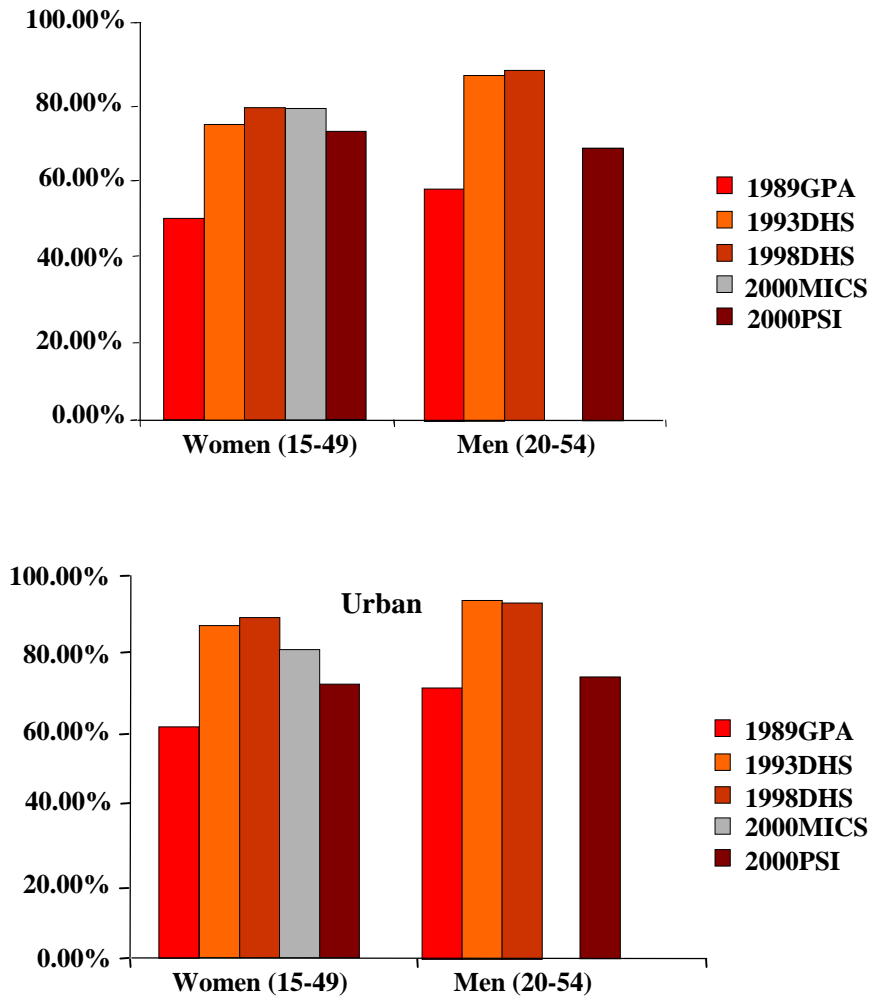
Healthy-looking person can be infected with HIV/AIDS

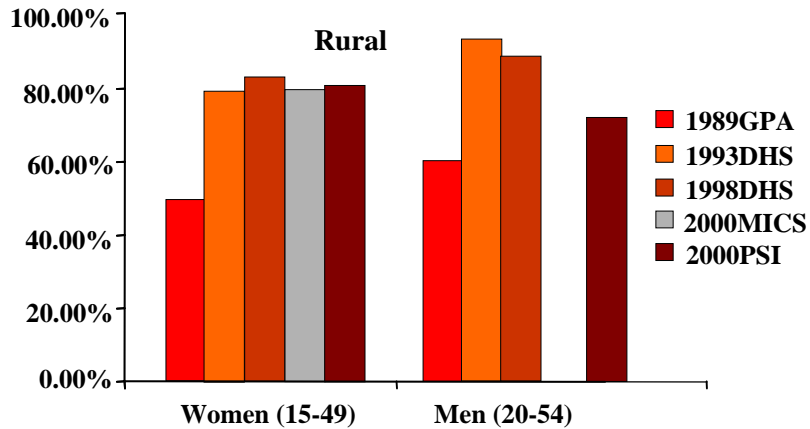
During the 1989 GPA survey, 50 percent of the women and 58 percent of the men knew that a healthy person could be infected with HIV (Figure 3.4). In the early 1990s, knowledge of this concept spread rapidly and by 1993, 74 percent of women and 87 percent of men knew that a healthy-looking person could be infected with HIV. Little changed between 1993 and 1998.

Among women, awareness increased slightly to 78 percent, while it remained virtually unchanged among men (88%). In 2000, 78 percent of the women who participated in the MICS survey knew that an infected person could appear healthy.

At the time of the 1989 GPA survey, about 25 percent more urban than rural women and men knew that a healthy-looking person could be infected with HIV. In 1993, awareness of this issue was still greater in urban areas, where 86 percent of women and 94 percent of men correctly responded to the question compared with 71 percent of women and 85 percent of men in rural areas. In 1998, 75 percent of women in rural areas compared with 89 percent in urban areas knew that a healthy-looking person could be infected with HIV. Among men, 93 percent in urban areas and 86 percent in rural areas were aware that healthy-looking people could be infected with HIV. In the late 1990s, the trend in urban areas was slightly different than in rural areas. Among urban women, knowledge seems to have declined between 1998 and 2000; 89 percent of urban women in 1998 knew that a healthy-looking person could be infected, while 81 percent did in 2000. In rural areas, knowledge of this issue among women increased slightly between 1998 and 2000. As a result, urban rural differentials narrowed toward the end of the decade.

Figure 3.4 Knowledge that a healthy-looking person can be HIV infected





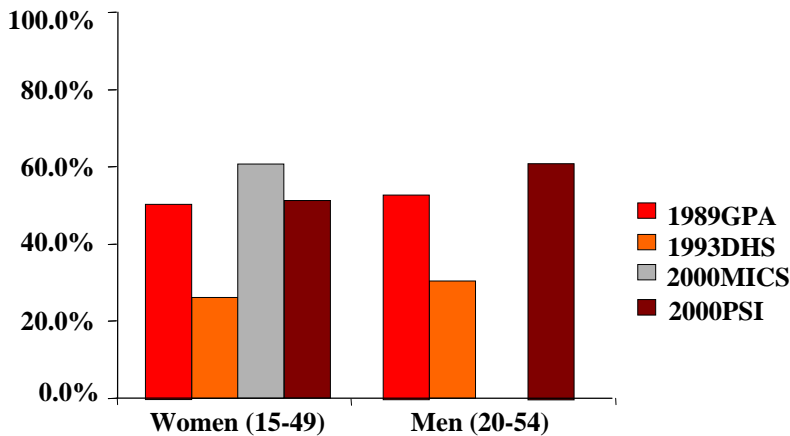
In 2000, the PSI survey asked respondents whether they thought they could recognize someone with HIV just by looking at him/her. Because the wording of this question differs significantly from that of the other surveys, the responses to this question are not comparable to those in earlier surveys. Seventy-two percent of women and 68 percent of men in the 2000 PSI survey said they could not recognize someone with HIV just by looking at him or her.

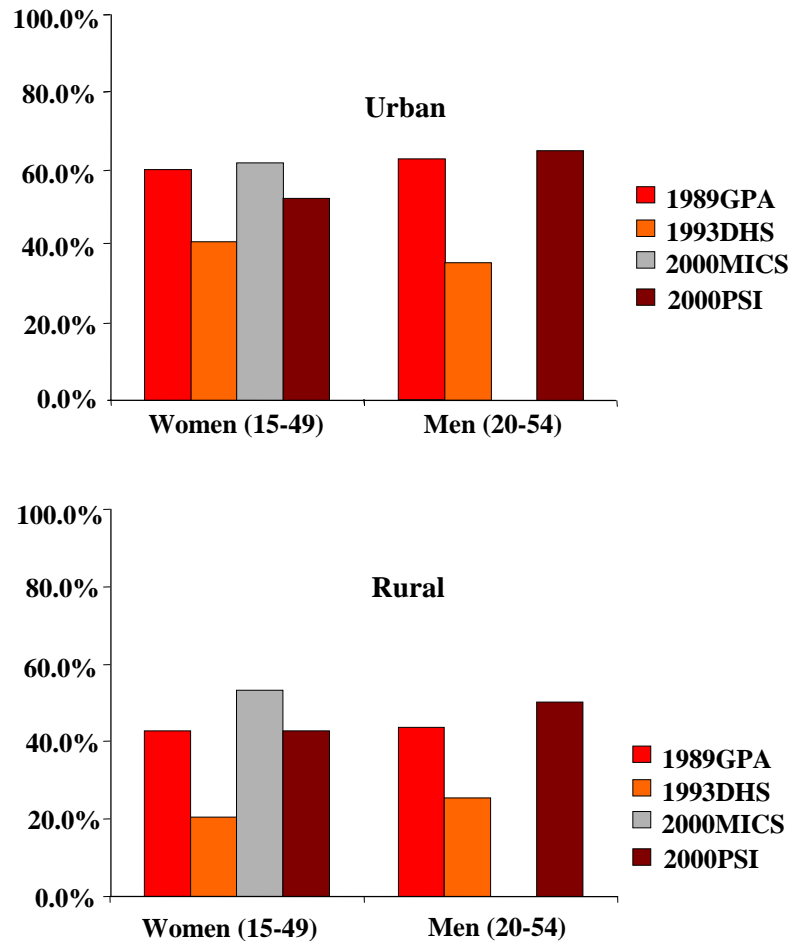
While most people are knowledgeable about vertical transmission and asymptomatic infection, many have misconceptions about HIV transmission. The presence of misconceptions may undermine efforts to encourage behaviour change. This is especially true if the misconceptions perpetrate the idea that HIV infection occurs at random (e.g., via mosquito bites).

HIV is not transmitted by mosquitoes

The results from the four surveys that asked questions about transmission via mosquitoes do not show a distinct trend in knowledge over the 1990s, as the results from the 1993 KDHS are much lower than those at the beginning of the decade (1989 GPA) and at the end (2000 MICS and 2000 PSI) (Figure 3.5). Subtle differences in the wording of the question may not explain the pattern. The 1989 GPA and 1993 KDHS asked about transmission of AIDS and the 2000 MICS and PSI asked, more precisely, about the transmission of the AIDS virus. In addition, the two earlier surveys listed other insects in addition to mosquitoes, while the later two asked only about mosquitoes.

Figure 3.5 Knowledge that HIV cannot be transmitted by mosquitoes





In 1989, nearly half of women (46%) and men (48%) knew that mosquitoes or other blood-sucking insects did not transmit AIDS. In 1993, only 24 percent of the women and 28 percent of men reported that mosquitoes, fleas, or bedbugs could not transmit AIDS. Twice as many urban as rural women reported that mosquitoes and other insects do not transmit HIV (41% urban vs. 21% rural). Among men, knowledge was also higher in urban areas, where 36 percent of men correctly answered this question compared with 26 percent of those in rural areas.

As Figure 3.5 shows, there seem to have been some gains in knowledge from the beginning to the end of the decade. During the 2000 MICS and PSI surveys, 56 and 47 percent of women, respectively, were able to reject this misconception. This is still fewer than the percentage of respondents who knew about MTCT and asymptomatic infection at the end of the 1990s.

By the end of the decade, urban-rural differences remained. During the 2000 PSI survey, for example, 53 percent of the women and 65 percent of the men in urban areas rejected the misconception about HIV transmission via mosquitoes, whereas only 43 percent of women and 50 percent of men in rural areas did the same.

HIV is not transmitted by sharing eating utensils

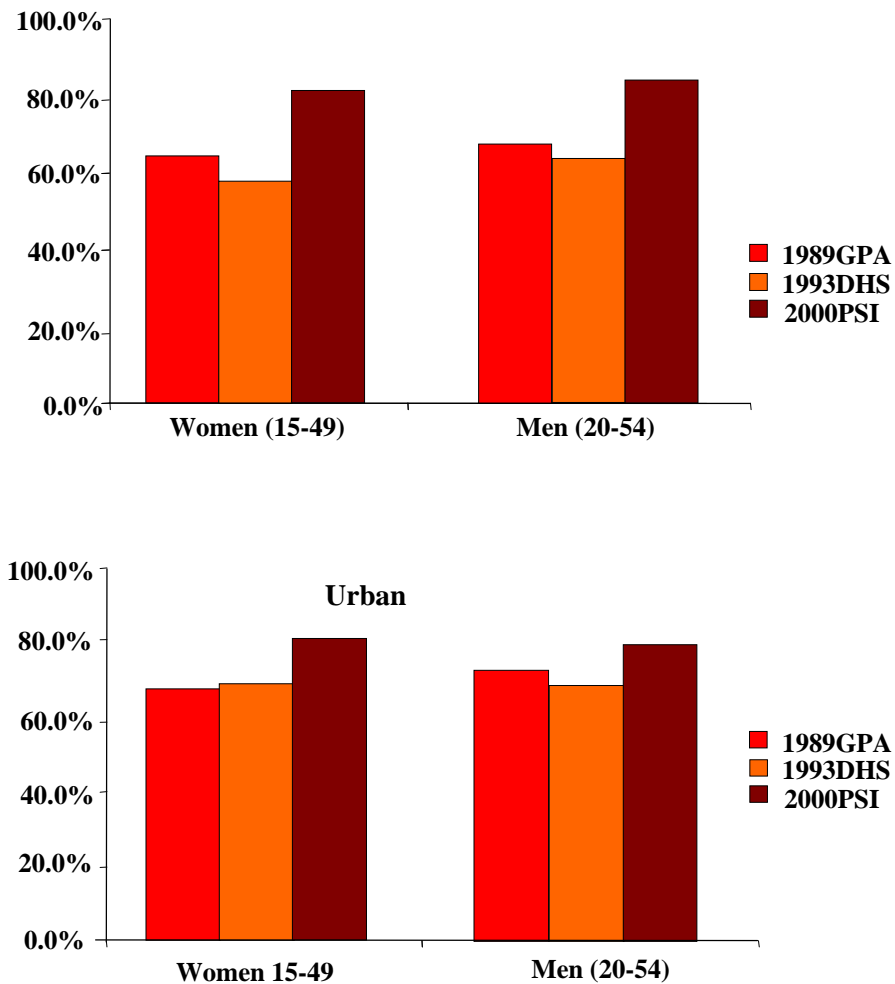
At the time of the 1993 KDHS, a little more than half (53%) of the women and 58 percent of men knew that HIV could not be transmitted by sharing eating utensils with an infected person. Throughout the decade, more people became aware that HIV could not be transmitted in this way (see Figure 3.6). Results from the 2000 PSI survey show that by the end of the decade, about

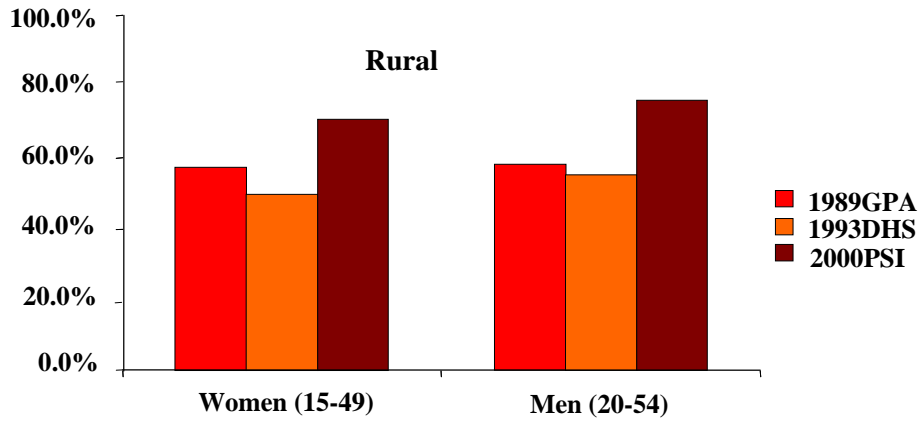
three-fourths of the respondents (75% of women and 77% of men) were able to reject this misconception. Differences in this indicator between urban and rural residents were evident early in the 1990s. In 1993, about 69 percent of women and men in urban areas compared to 50 percent of women and 55 percent of men in rural areas had correct knowledge regarding this form of transmission. While at the end of the decade some of these differences remained, the levels of knowledge in rural areas were approaching those in urban areas.

Composite indicator: no incorrect beliefs about AIDS

Reductions in misconceptions may be as important an outcome of information, education, and communication (IEC) campaigns as increases in knowledge. For this reason, UNAIDS developed a composite knowledge indicator that measures the proportion of people who correctly reject the two most common local misconceptions and also know that healthy looking people can be HIV positive (UNAIDS, 2000). Combining the correct responses to the three questions mentioned above (whether HIV could be transmitted by: a healthy-looking person; mosquitoes or other insects; or shared eating utensils) provides a sense of how many people have no misconceptions about HIV transmission.

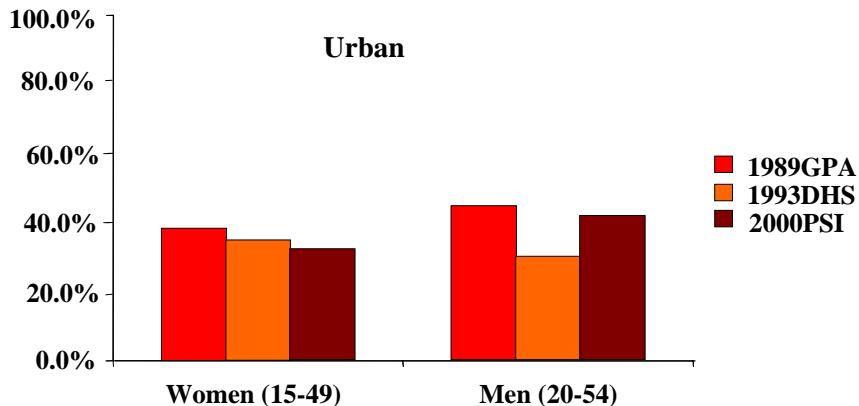
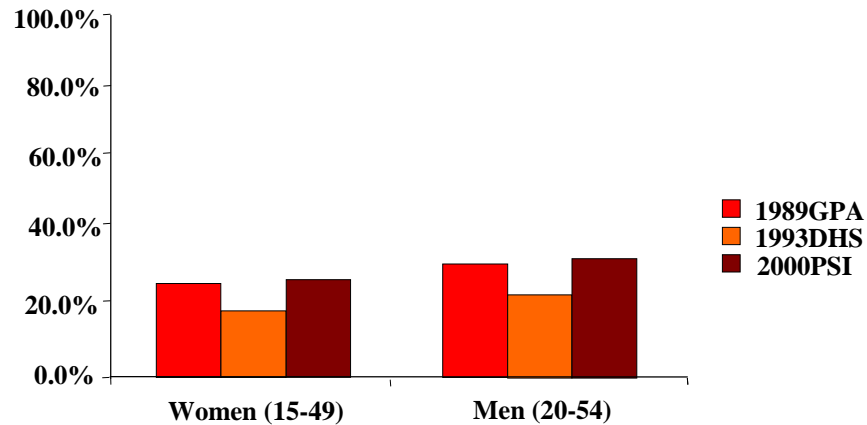
Figure 3.6 Knowledge that HIV cannot be transmitted by sharing eating utensils

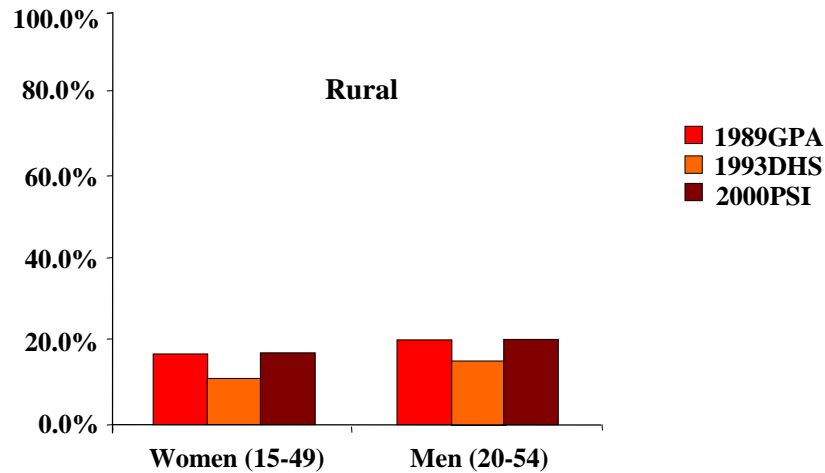




As seen for knowledge about transmission via mosquitoes (and probably a direct result of that data), there is no discernable trend in this indicator (Figure 3.7). Knowledge appears to have remained unchanged from the beginning to the end of the 1990s, with a decline in the population in 1993. The trends in levels of knowledge differed by place of residence and gender. Between 1989 and 2000, the percentage of urban women who could correctly answer all three questions declined, while the percentage of rural women who did so increased, substantially narrowing the gap between the two groups. Similarly, among men, decreases occurred in urban areas and remained unchanged in rural areas. These decreases may not reflect real changes in one population, but rather, trends in survey methodology.

Figure 3.7 Composite knowledge: No incorrect beliefs about AIDS





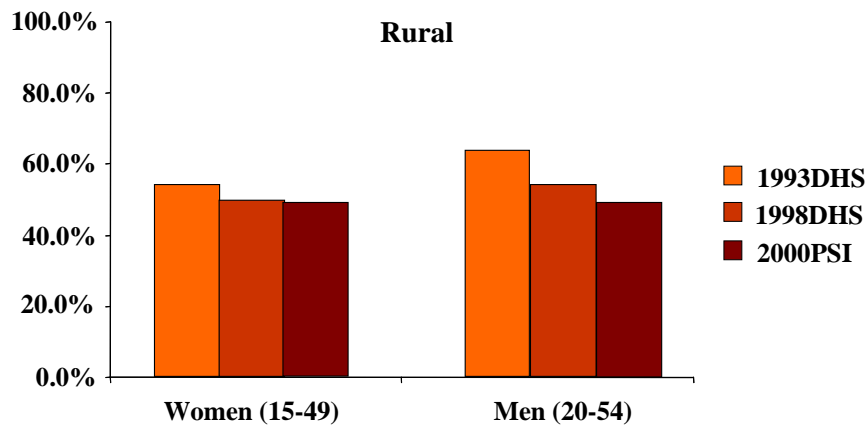
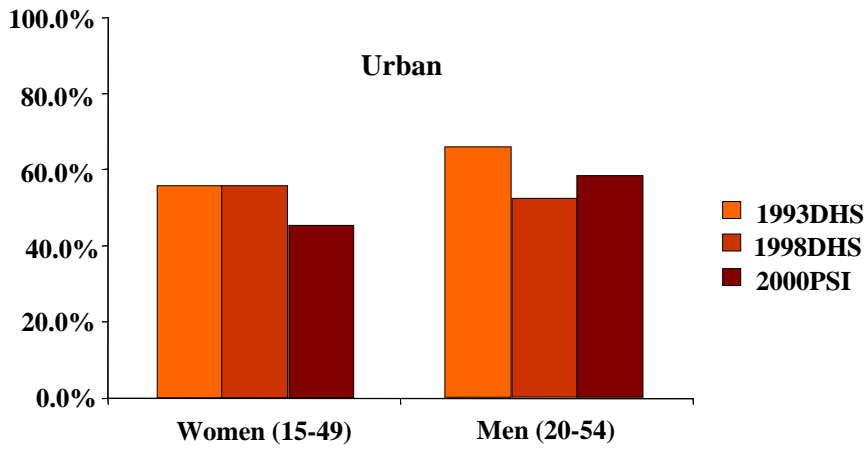
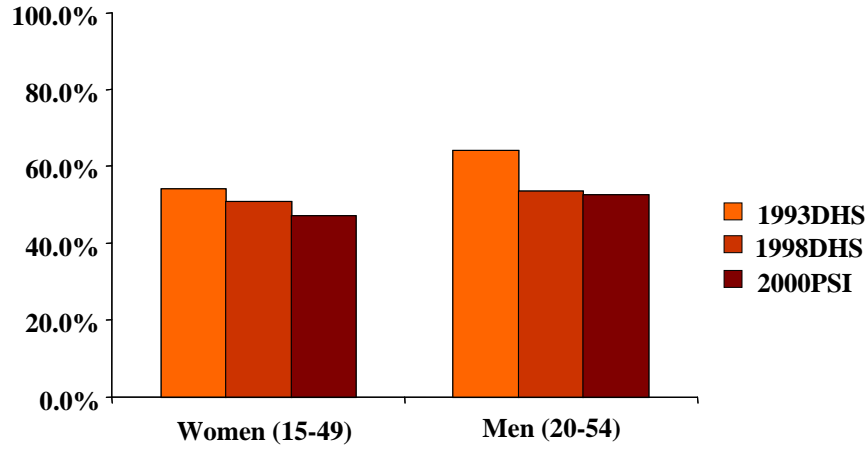
Knowledge of AIDS prevention

In Kenya, HIV is spread primarily through heterosexual contact (KMOH, 2001). Because every sex act carries a risk of HIV transmission, limiting sexual contact is one way of limiting the spread of HIV. To determine whether people know how to protect themselves against HIV infection, respondents were asked whether AIDS could be avoided (results presented earlier) and if so, how. Presented below are the percentages of respondents who mentioned each of the following AIDS prevention methods: limiting the number of sex partners, using condoms as means to protect themselves against HIV infection, and a composite of the two.

Limiting the number of sex partners

The wording of the question related to limiting the number of sex partners to prevent HIV infection varied among surveys. Here, we consider three surveys that phrased the question similarly: the 1993 and 1998 KDHS and the 2000 PSI survey. Knowledge of avoiding AIDS by limiting the number of sex partners seems to be declining (see Figure 3.8). In 1993, 54 percent of women and 64 percent of men mentioned limiting the number of sex partners as a way to avoid AIDS. By 1998, fewer respondents mentioned this method (51% of women and 53% of men). Furthermore, between 1998 and 2000, while the percentage of men who mention this method remained the same, among women, the proportion declined further, reaching 47 percent. The trend was similar for all women and for rural men. Among urban men, there is evidence of a reversal of this trend. The percentage of urban men who mentioned limiting the number of sex partners declined from 66 percent in 1993 to 52 percent in 1998, but increased slightly by 2000 to 58 percent. Part of this may be due to an increased and correct belief that having even one partner leaves one vulnerable to HIV.

Figure 3.8 Knowledge that AIDS can be avoided by limiting number of sex partners (spontaneous)

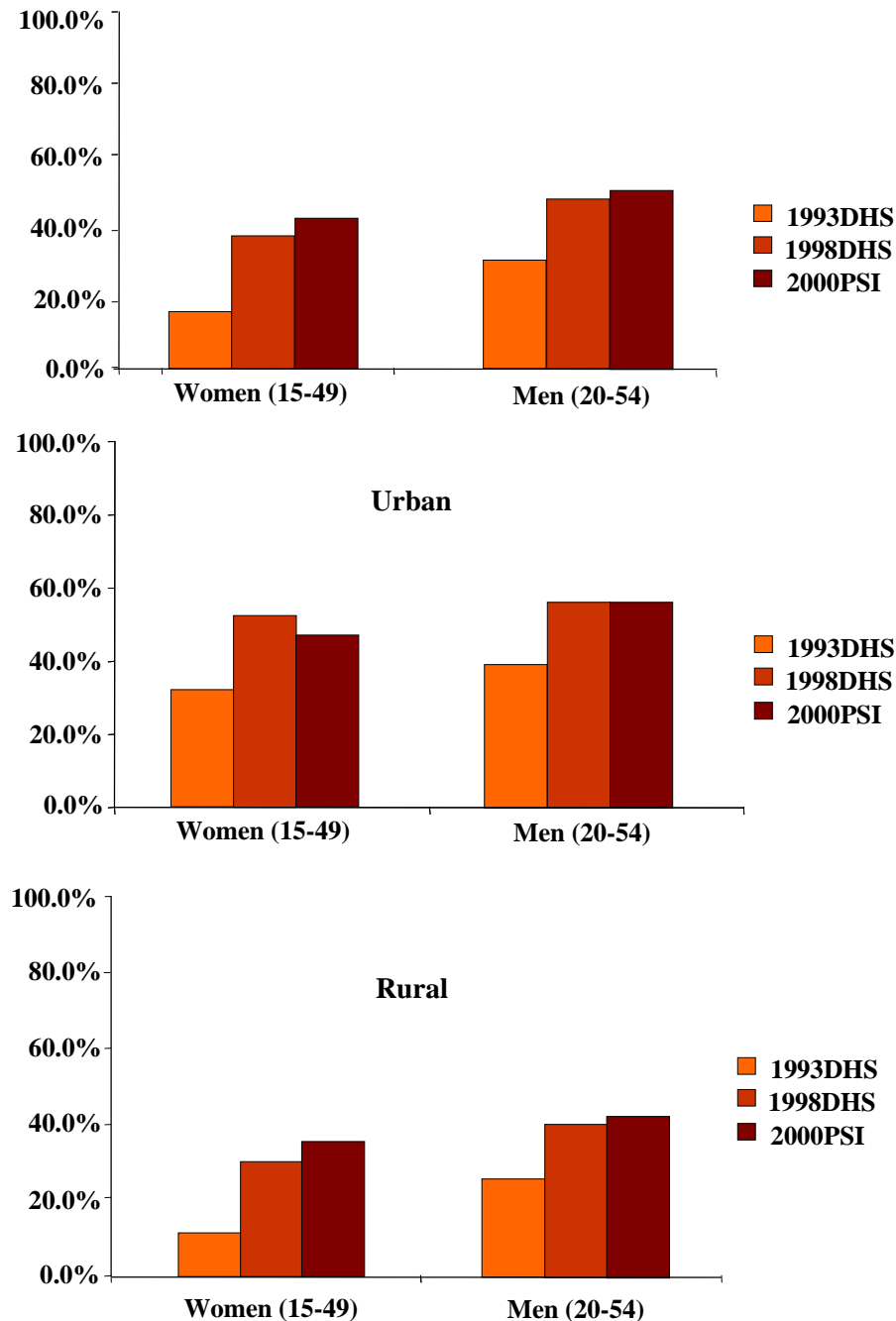


Using condoms

One of the key HIV interventions supported by the MOH has been to promote the availability and use of condoms via mass media campaigns. While knowledge about limiting sexual partners seems to be on the decline, the percentage of people who spontaneously mention condoms as a

way to prevent HIV/AIDS rose steadily throughout the decade (see Figure 3.9). Between 1993 and 1998, the proportion of respondents who spontaneously mentioned condoms as a way to prevent HIV more than doubled among women (from 16% to 37%), while it increased by 17 percentage points among men (from 31% to 48%). During the 2000 PSI survey, 42 percent of female respondents and 50 percent of the male respondents spontaneously mentioned condoms as a way to protect against HIV infection. Although the trend was similar regardless of gender and place of residence, between 1998 and 2000, the percentage of urban women who spontaneously mentioned condoms declined, while the percentage of rural women who did so increased, thus narrowing the urban-rural gap.

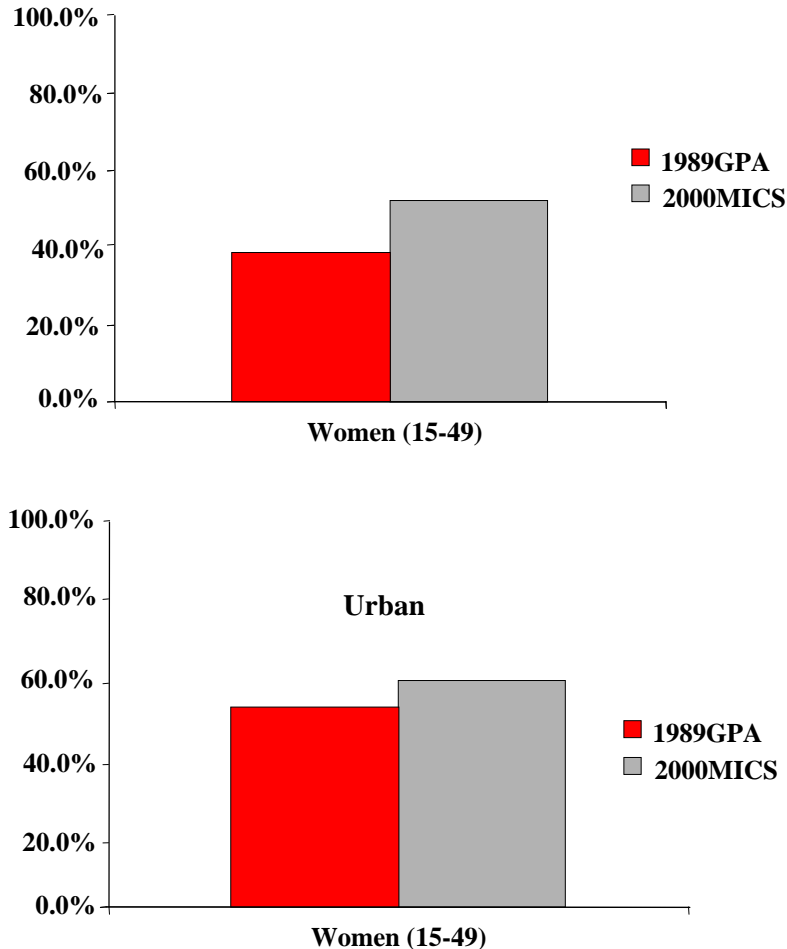
Figure 3.9 Knowledge that AIDS can be avoided by using a condom (spontaneous)

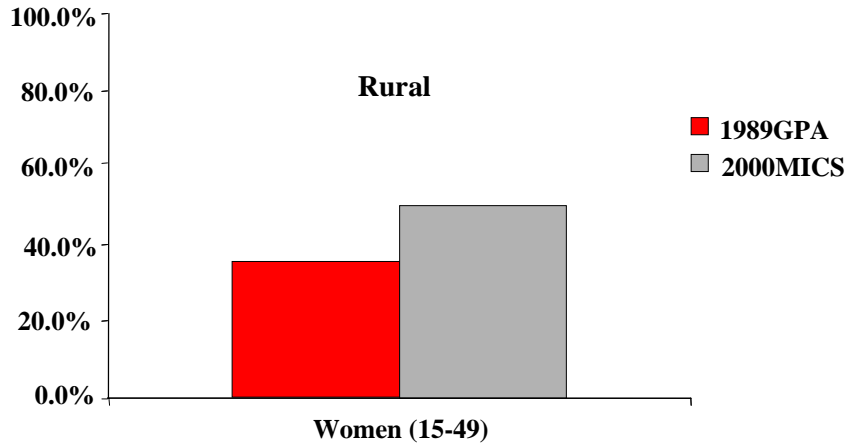


The 1989 GPA and 2000 MICS surveys also included questions about condom knowledge. However, rather than asking respondents to spontaneously mention ways to protect against HIV infection, both surveys probed for condom knowledge by directly prompting respondents for 'yes' or 'no' answers to whether people can protect themselves by using a condom. Higher levels of knowledge are to be expected when probing in this way. For this reason, the results from the GPA and MICS surveys are not directly comparable to those of the KDHS and PSI surveys, but they are comparable to each other.

During the GPA survey in 1989, 38 percent of women correctly answered when asked whether condoms can prevent someone from getting AIDS. By the time of the MICS survey in 2000, 52 percent of women knew that condoms could protect against HIV infection. In both surveys, urban respondents were more likely than rural residents to have correct knowledge; however, among women, the knowledge gap seems to have narrowed. Whereas in 1989 the difference in the percentage of urban and rural women who answered correctly was about 17 percentage points, it narrowed to about 9 percentage points in 2000 (Figure 3.10).

Figure 3.10 Knowledge that AIDS can be avoided by using a condom (probed)

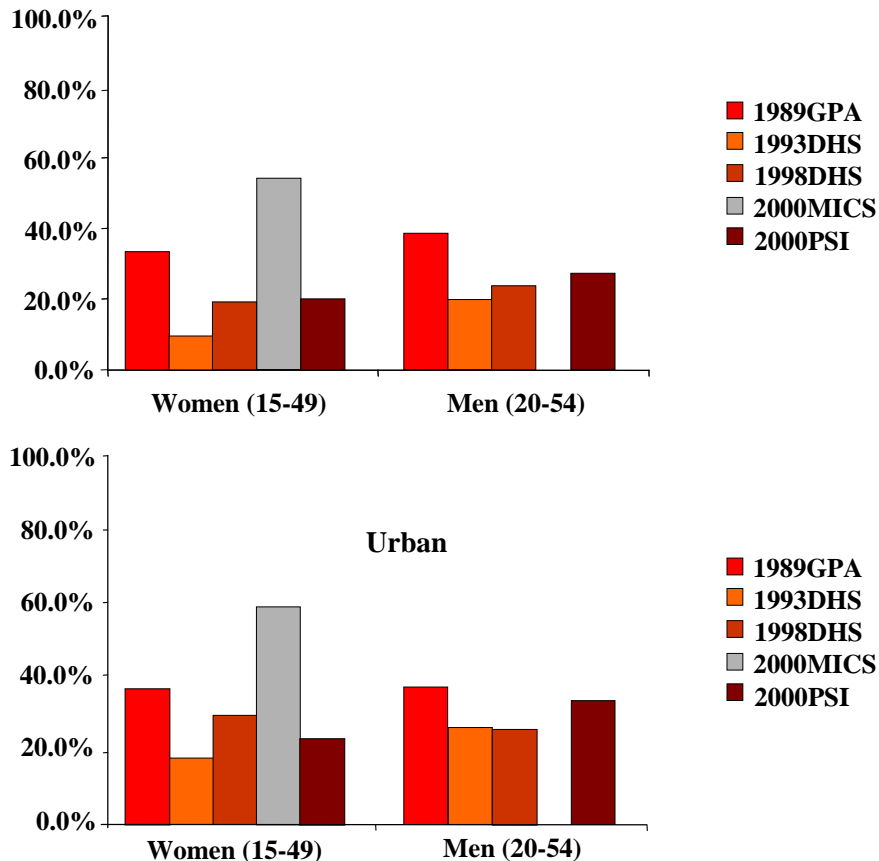


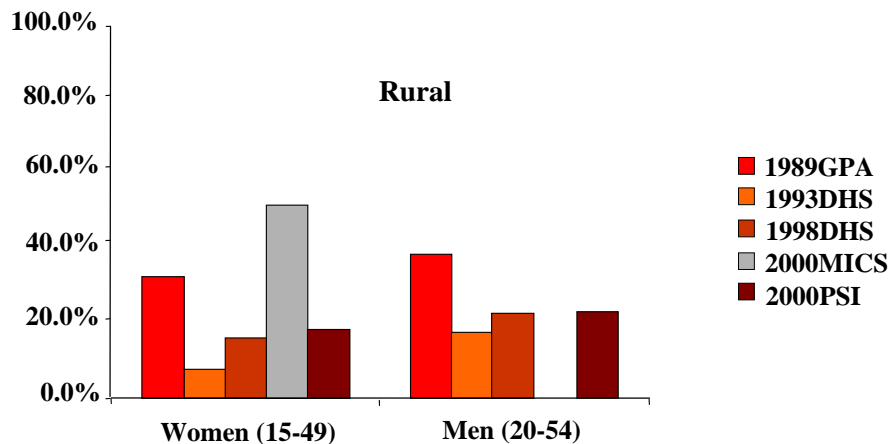


Composite indicator: limiting sex partners and using condoms

This indicator combines the previous two indicators to measure the percentage of respondents with correct knowledge about limiting the number of sex partners and using condoms. Because the 1993 and 1998 KDHS and 2000 PSI surveys measured spontaneous knowledge, which is slightly different from what UNAIDS recommends, they can still provide a snapshot of knowledge throughout the decade. The 1989 GPA and 2000 MICS surveys measured prompted knowledge. Though presented in the same Figure 3.11, the trends will be discussed separately for these two survey methods.

Figure 3.11 Combined knowledge: Knows that AIDS can be avoided by limiting the number of partners and by using condoms





The percentage of people who spontaneously mentioned both AIDS prevention methods rose, but the level remained relatively low. In 1993, about 10 percent of women and 20 percent of men spontaneously mentioned both ways of avoiding HIV. Knowledge among women almost doubled to about 19 percent by 1998 and remained at that level in 2000. Among men, knowledge increased by a modest seven percentage points (to 27%) between 1993 and 2000. Urban respondents were more likely than rural to have correct knowledge about both ways to protect against HIV. Knowledge among women in urban areas increased by two-thirds (from 18% to 30%) between 1993 and 1998, but the trend was reversed as levels dropped to about 23 percent by 2000. In rural areas, knowledge among women doubled between 1993 and 1998 (from 8% to 16%) and continued to rise throughout the end of the decade reaching 18 percent in 2000. Among men in urban areas, there was no change in knowledge from 1993 to 1998; about 26 percent knew both methods. By 2000, however, the percentage of urban men who spontaneously mentioned both methods rose to 34 percent. The trend was different in rural areas, where increases in knowledge among men were seen between 1993 and 1998 (18% to 23%) and levelled off at that point.

If we consider prompted rather than spontaneous knowledge of condoms among women, the trends were similar. In 1989, results of the GPA survey showed that one-third of the women knew both AIDS prevention methods. This increased to 54 percent by the time of the 2000 MICS survey. Trends were similar in rural and urban areas. Because the 2000 MICS survey did not interview men, trend data are not available for prompted responses among men.

Risk perception

A person's perceived risk of becoming infected with HIV may play a role in his or her decision to change behaviour. For this reason, we explore trends in perceived risk of becoming infected with HIV. Results of the GPA survey showed that in 1989, 28 percent of women and one-third of men felt they were at some risk of becoming infected. This includes respondents who thought the chance of becoming infected was very small. At that time, there was no difference by place of residence.

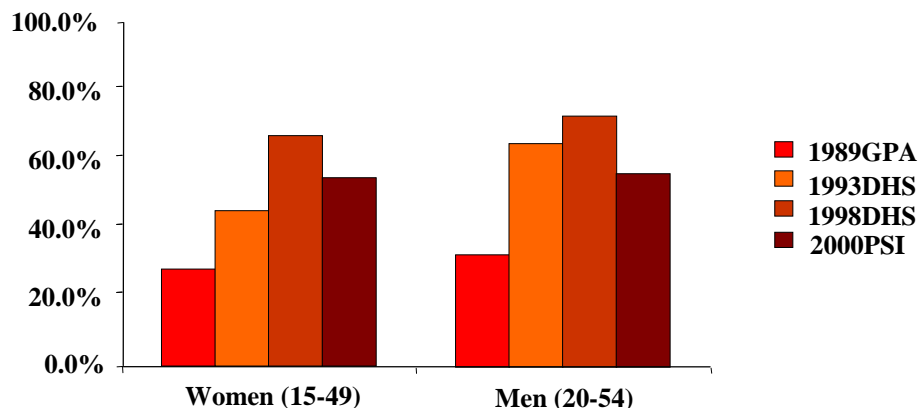
Risk Perception in STI Patients

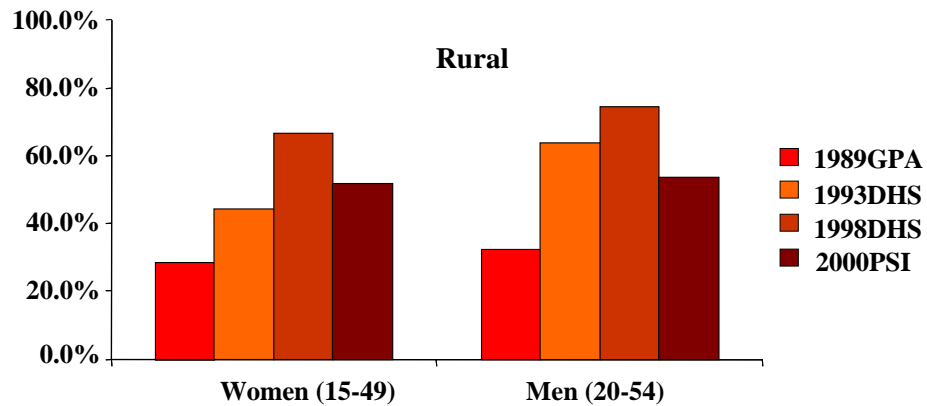
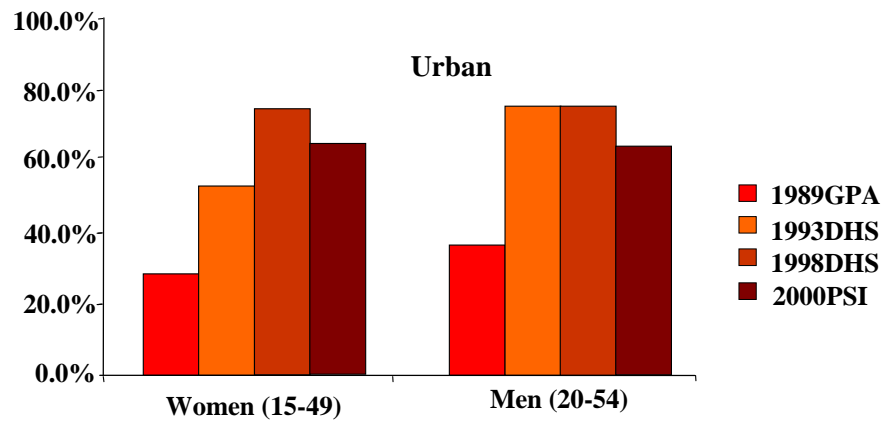
A cross-sectional study of 787 men age 17–54 who presented with genital ulcer disease in a referral clinic in Nairobi assessed their sexual behaviour and their perceived risk of HIV/AIDS (Tyndall, 1994).

- Whereas awareness of HIV was nearly universal in this population, only 8 percent thought that they were personally at risk of contracting HIV.
- Except for a modest increase in condom use, there was no significant difference in sexual behaviour between the group who considered themselves to be at risk for HIV and those who did not consider themselves at risk
- Twenty-four were infected with HIV.

As the number of HIV infections and AIDS deaths grew, more people began to feel at risk of infection (see Figure 3.12). In 1993, 45 percent of women and 65 percent of men thought that they were at some risk (small, moderate, or great) for HIV. By 1998, this figure had risen to about two-thirds (67%) of women and almost three-quarters (73%) of men. The increase in risk perception took place earlier in urban areas than in rural areas as demonstrated by differences evident in the early 1990s. In 1993, half of the women in urban areas believed they were at risk compared to 44 percent of women in rural areas. By 1998, the difference between urban and rural women was no longer evident (69% urban and 67% rural). Between 1993 and 1998, men in rural areas grew more likely to feel at risk for HIV transmission (64% in 1993 vs. 75% in 1998). During the same period, the percentage of men in urban areas who believed they were at some risk for HIV remained unchanged. So by 1998, men in rural areas were somewhat more likely to report feeling at risk than those in urban areas (75% rural vs. 70% urban in 1998).

Figure 3.12 Feel they are at risk for HIV transmission

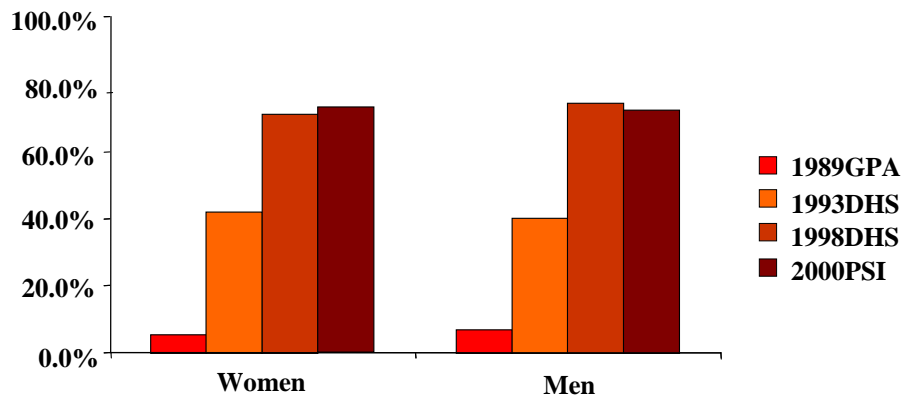


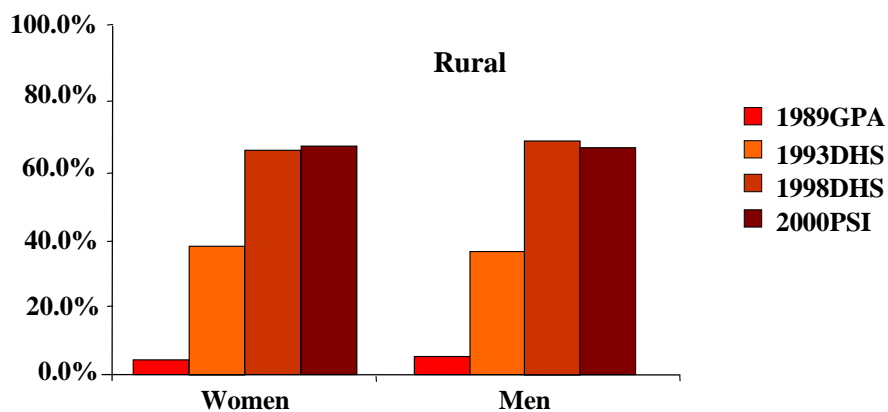
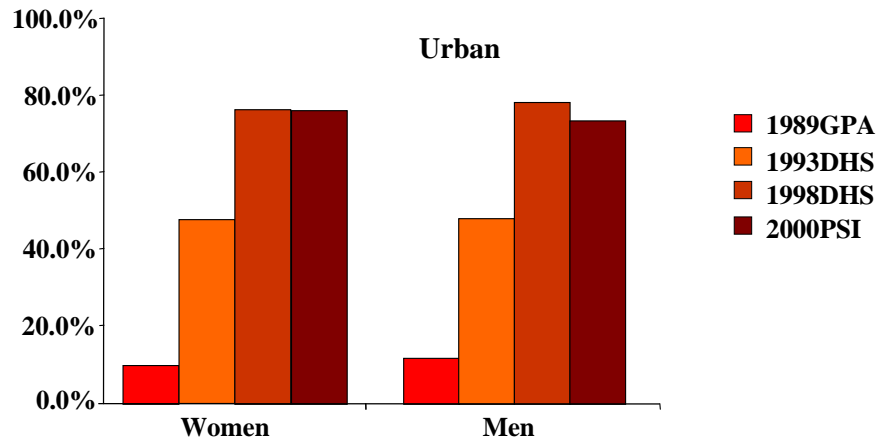


Knows someone with AIDS

During the 1989 GPA survey, very few respondents (6% of women and 7% of men) personally knew someone with AIDS. As the AIDS epidemic worsened, many people were personally touched by it (see Figure 3.13). The number of respondents who knew someone with HIV or who had died of AIDS grew to about two-fifths of respondents (42% of women and 40% of men) in 1993 and soared to almost three-fourths of respondents (71% of women and 74% of men) by 1998. Between 1998 and 2000, there was little change. The trend was similar in both urban and rural regions, although a slightly greater proportion of urban residents than rural residents knew someone living with HIV or who had died of AIDS.

Figure 3.13 Knows someone with HIV or who has died of AIDS





Voluntary Counselling and Testing in Kenya

- In late 1989, Liverpool VCT and Care Kenya started operating three pilot VCT sites: one urban site in Nairobi and two rural sites in Thika district.
- An 1998 inventory of HIV/AIDS counselling, testing, care, and support services in Nairobi found 31 sites where HIV counselling and testing services were available. The majority of these sites were private and public medical laboratories, offices, clinics, and hospitals; one was a research site. In the majority of cases, HIV counselling and testing services was one of many medical services provided at the site. The Kenya Association of Professional Counsellors VCT Centre Kariobangi Counselling Centre was the only stand-alone counselling and testing site (Population Council and Family Health International, 1998).
- Official, national VCT guidelines were not developed and published until 2001. This launched rapid HIV testing in 35 VCT centres. Three hundred sites are proposed to cover the needs of the country. Two models of service are available: integrated VCT services for women and men who attend government and NGO health facilities; and “stand-alone” services mainly for young people, men, and healthy people who do not visit government or NGO facilities.

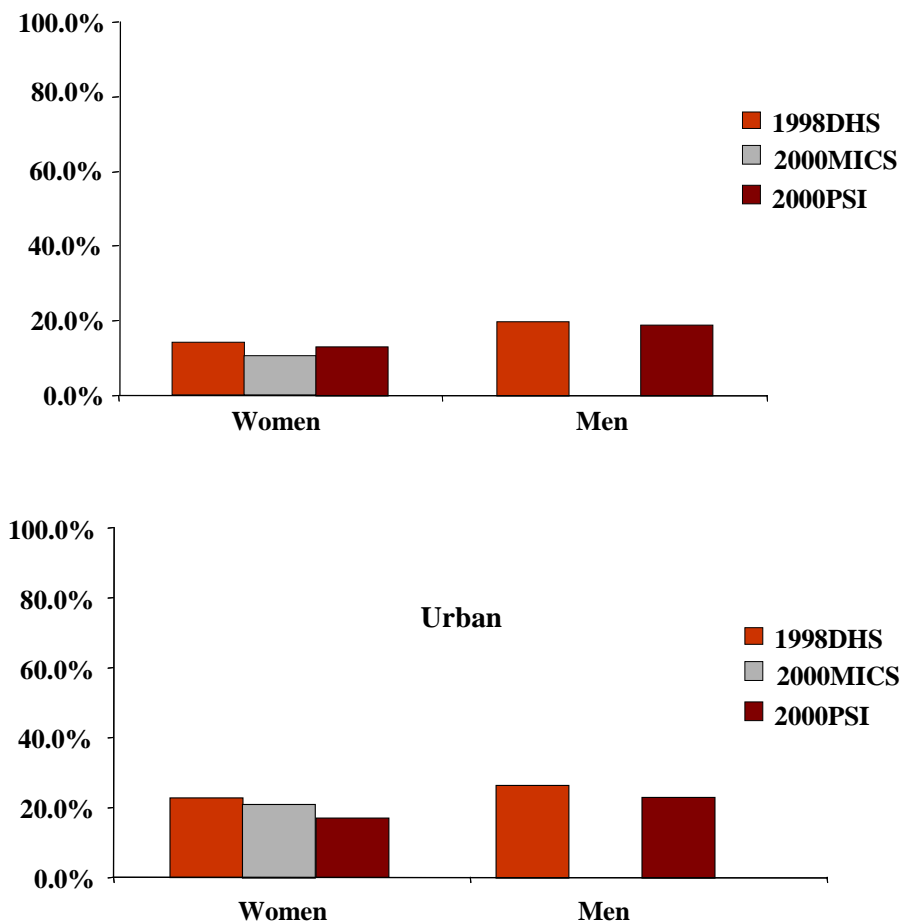
HIV testing

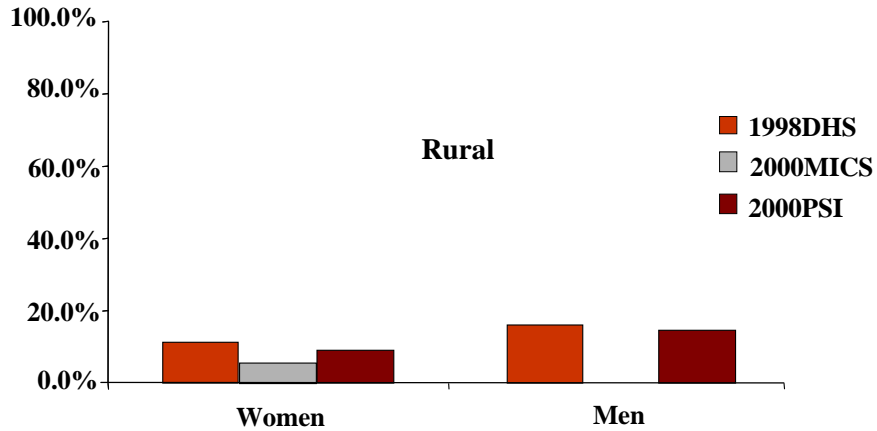
HIV tests

The earliest data available regarding HIV testing is from the 1998 KDHS. Respondents were asked whether they had ever been tested for HIV and those who had not been tested were asked whether they would like to be. In 1998, 14 percent of women and 20 percent of men had been tested for HIV (see Figure 3.14). Testing was more common in urban areas where 25 percent of women and 29 percent of men had been tested for HIV compared with 11 and 16 percent of women and men, respectively, in rural areas. There was little change in this indicator between 1998 and 2000. Results from the PSI survey show that in 2000, 13 percent of female respondents and 19 percent of male respondents had been tested for HIV. About 11 percent of female respondents to the MICS survey had been tested. In each case, a greater proportion of urban respondents than rural respondents had been tested for HIV.

It is important to remember that people who express a desire for testing on a survey may not actually want the test when there is a realistic opportunity. Thus, the gap reported between desire for testing and people who have had a test may be explained by the gap in theoretical versus actual desire for testing.

Figure 3.14 Ever tested for HIV

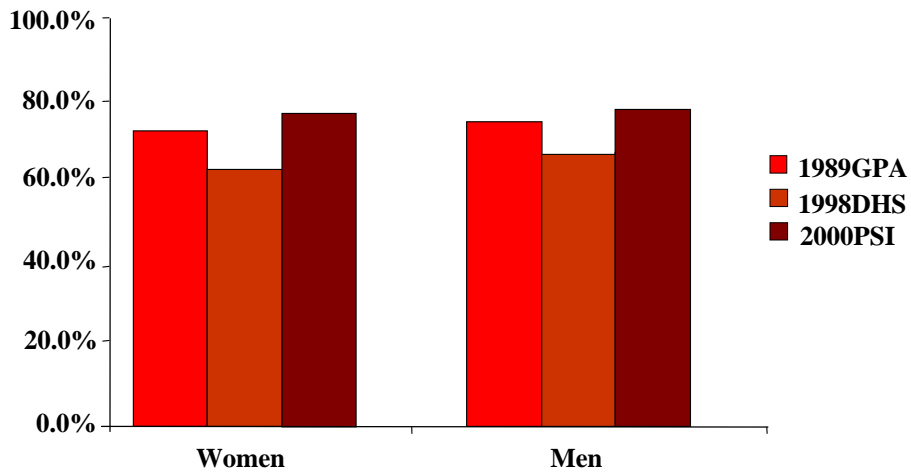


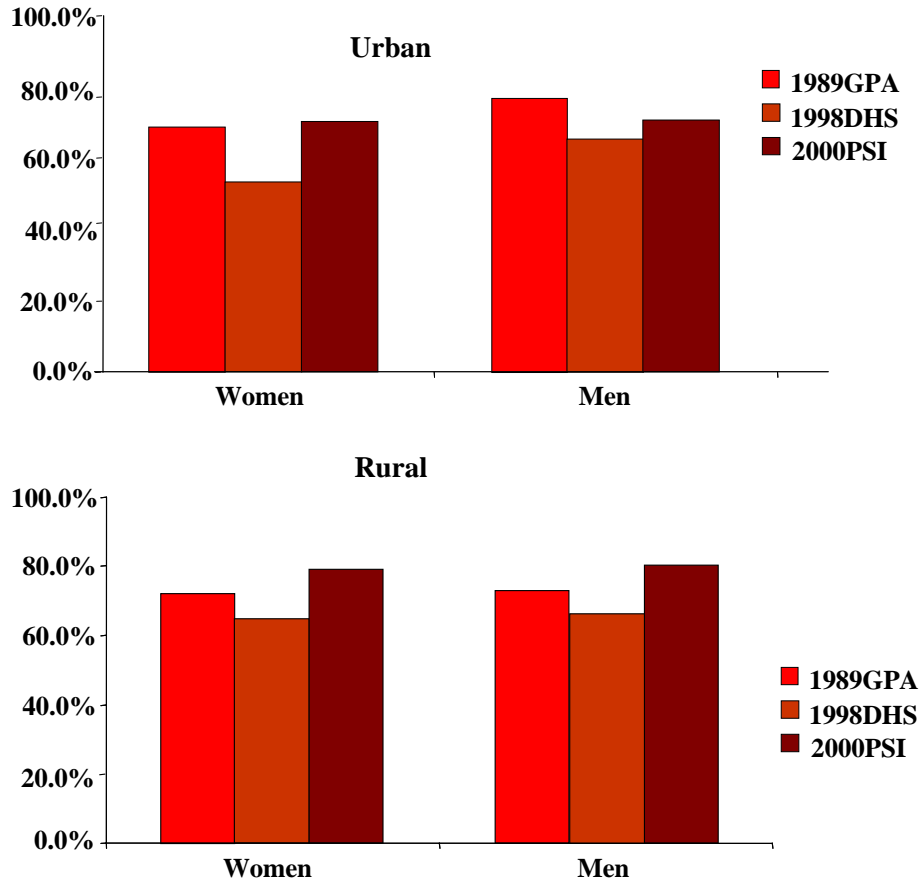


Want to be HIV tested

There is, however, a discernible gap between the number of people getting tested and the number who say they would like to be tested, which persisted in the late 1990s. In 1998, among respondents who had not been tested at the time of the survey, approximately two-thirds of women (62%) and men (66%) said they'd like to be tested for HIV (see Figure 3.15). In 2000, about three-fourths of respondents said they would like to be tested. Each survey revealed that rural women and men were more likely than urban respondents to want to be tested. This could be due to better access to HIV testing in urban areas so that a greater proportion of urban respondents who would have liked to be tested have already been tested. This is probably explained by the difference in access.

Figure 3.15 Would like to be tested for HIV (percentage of those who have not been tested)

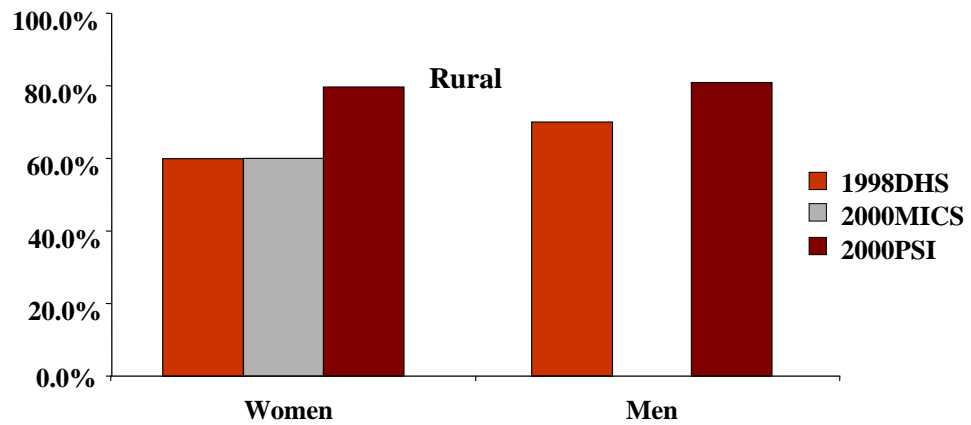
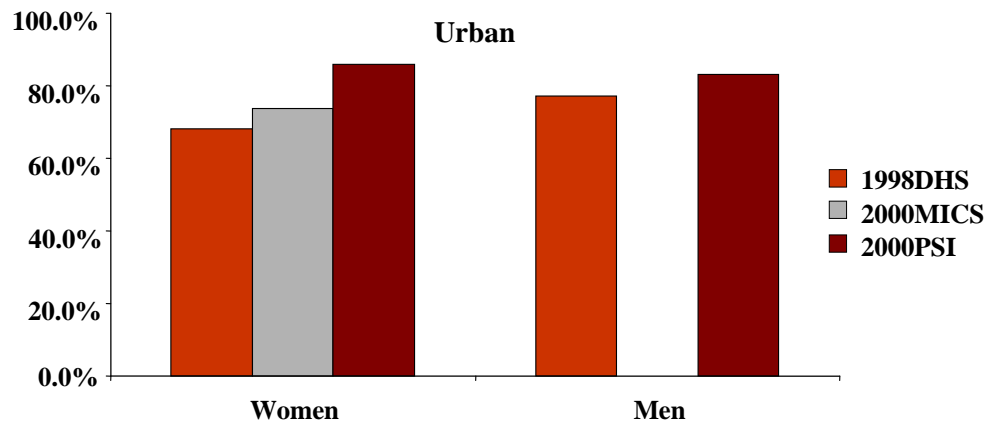
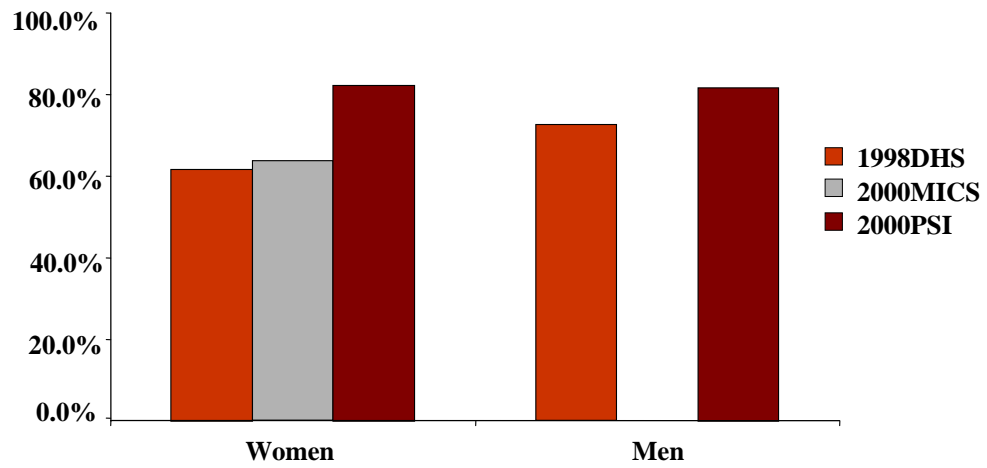




Knowledge of HIV testing

In 1998, respondents were asked if they knew where they could go for HIV testing. The majority of respondents (62% of women and 73% of men) knew where to go for an HIV test (see Figure 3.16). It is unclear whether or not there was a change in this indicator. Results from the MICS survey in 2000 show that there was little change in the percentage of respondents who knew where to go for testing, whereas results of the PSI survey conducted in the same year suggest that many more people (about 82% of respondents) know of a place to go for HIV testing. This may be due to differences in sampling. All three surveys consistently show that respondents in urban areas were more likely to know a source for testing than those in rural areas.

Figure 3.16 Knows source for HIV testing



Chapter 4 Sexual Behaviour

A reversal in the AIDS epidemic in Kenya will require widespread behaviour change. Where the last chapter explored important indicators of knowledge related to HIV/AIDS prevention, this chapter reviews the trends in key sexual behaviour indicators, such as, abstinence, multiple partnerships, extra-marital sex, and premarital sex. Data regarding time since last sex is required to calculate many of the indicators in this section. The KDHS surveys include data on time since last sex, but the 2000 MICS and PSI surveys did not. In the 1989 GPA survey, respondents who had not heard of AIDS and those who said they knew little or nothing about AIDS were not asked about their sexual behaviour. These respondents totalled 15 percent of the sample, and thus render the results incomparable to those in other years. For this reason, the GPA data were not included in this section. The only source of many indicators presented in this section is the KDHS.

Age at first sex among young people

The delay of sexual debut affects the spread of HIV by reducing the total amount of time that people are sexually active and exposed to HIV infection. In Kenya, the MOH encourages young people to delay sex until marriage via the integration of HIV/AIDS education into the school curricula and mass media and IEC campaigns. The trend in median age at first sex is presented below. This indicator is calculated from a combination of current status and recall data using the life-table approach (Kenya NASCOP, 2003).

There is little difference in the median age at first sex among 15–19 year-old respondents from one survey to another. The median age at first sex for women was 17.5 years in 1989 and 17.7 years in 1998. Among men age 20–24, the median age at first sex was 16.2 years in 1989 and 16.5 years in 1998. There were not any large differences between urban and rural residents (Kenya NASCOP 2003).

Age at first sex is but one indicator of sexual activity among youth. The *AIDS in Africa during the Nineties Young People in Kenya* focuses on trends in HIV/AIDS indicators among youth in Kenya. The companion report provides an analysis of trends in sexual behaviour among youth, therefore the sections that follow present sexual behaviour data for all respondents without special attention to youth.

Early Sexual Debut

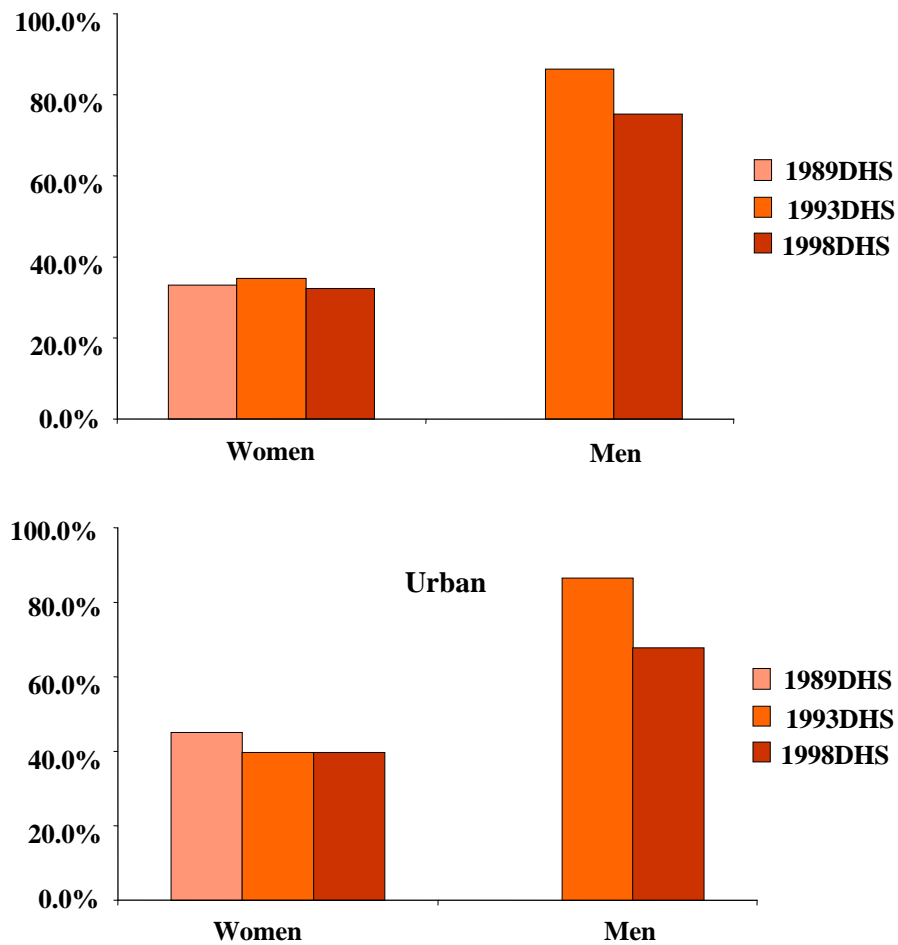
A multicentre study (1996–1997) on factors determining the differential spread of HIV in Africa included Kisumu, Nyanza in western Kenya as one of the study sites. In the qualitative component of the study age at first intercourse was discussed. Sexual debut was as early as 12 years for both boys and girl. (Kimani, 1999).

Premarital sex

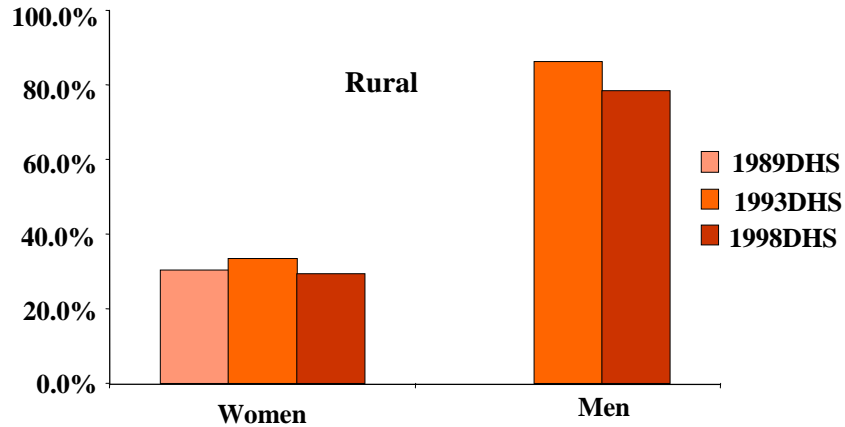
Because every sexual relationship carries with it the risk of HIV infection, it is important for people to minimize their exposure to the risk of infection by reducing the number of sexual relationships they have. To get a sense of how many young adults are heeding the message to delay sex until marriage, we looked at sexual activity among young, never-married respondents. There was little change in the proportion of never-married women age 15–24 who had premarital sex during the year preceding the survey (33% in 1989, 35% in 1993, and 32% in 1998). While

there was little change among women, the percentage of young men (20–24 years) who reported having premarital sex in the year preceding the survey declined from 86 to 75 percent between 1993 and 1998.⁴ In all three surveys, urban women were more likely than rural women to have had premarital sex the previous year. However, the percentage of young urban women who had premarital sex declined from 45 to 40 percent between 1989 and 1993 and remained at that level throughout the latter part of the 1990s. In 1993, there was no difference between the percentage of urban and rural young men who had premarital sex. However, as Figure 4.1 demonstrates, the decline seen between 1993 and 1998 was sharper in urban areas so that by 1998, urban, single men age 20–24 were less likely than their rural counterparts to have had premarital sex the previous year (68% urban vs. 79% rural).

Figure 4.1 Sexual behaviour: Premarital sex (never-married women 15–24 and men 20–24)



⁴ Men were not interviewed during the 1989 KDHS. During the 1993 KDHS, these data were only collected from men age 20–24. In order to ensure comparability, the male samples used in the trend analyses for premarital sex was limited to men age 20–24 at the time of the survey.

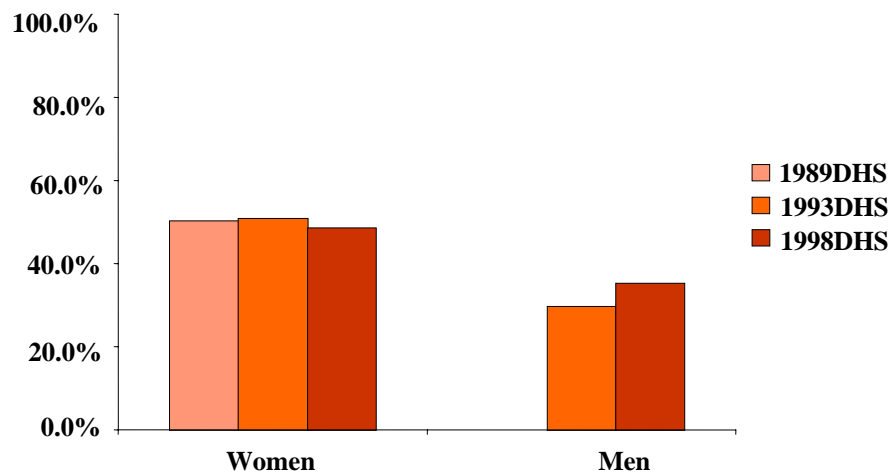


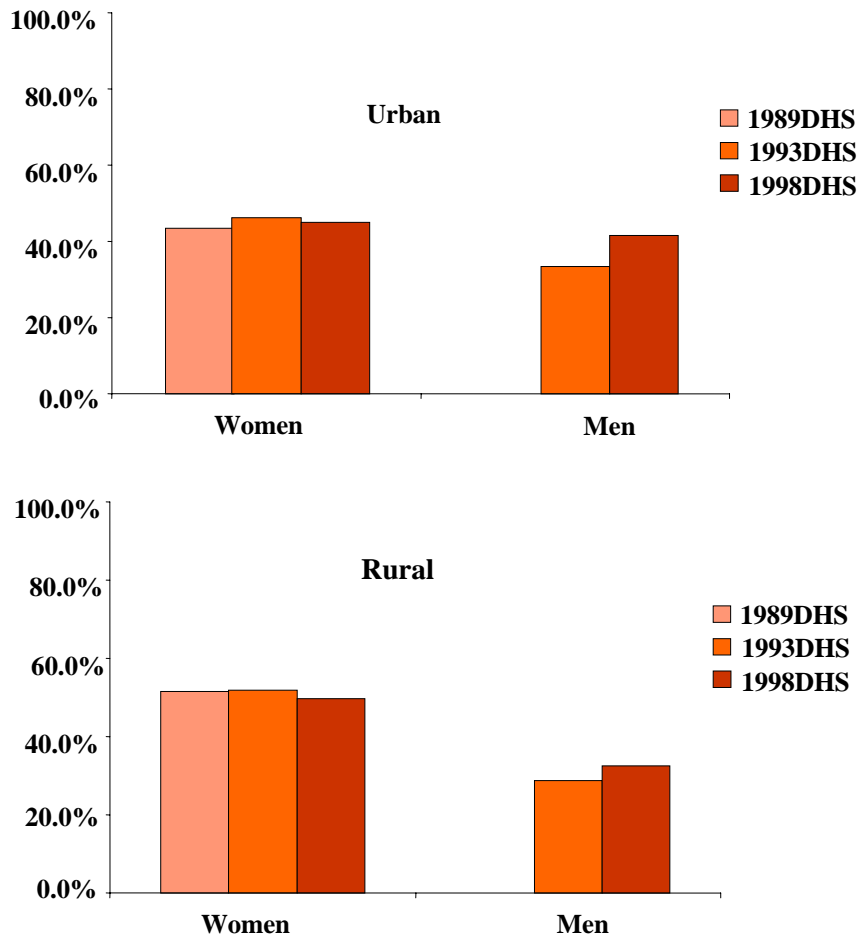
Abstaining from sex

Abstinence for one month

Nearly half of women reported abstaining from sex in the month preceding each of the three KDHS surveys (Figure 4.2). This includes sexually experienced women who abstained from sex during the previous month as well as those who had not yet become sexually active. Throughout the 1990s, there was virtually no change in the level of this indicator among women. In each of the surveys, rural women were more likely than urban women to have abstained from sex for the previous month; however, the differences were small. Men were much less likely than women to have abstained from sex in the previous month, but the trend suggests that more men are choosing abstinence. In 1993, about 30 percent of men reported abstaining for one month; 35 percent did so in 1998. In 1993, urban men were more likely to have abstained from sex during the month before the survey compared with rural men. During the 5 years that followed, the increase in one-month abstinence rates were greater among urban men (from 33% to 42%) than among rural men (from 29% to 33%). This resulted in a wider gap between urban and rural male one-month abstinence rates toward the end of the decade.

Figure 4.2 Sexual behaviour: No sex during past month

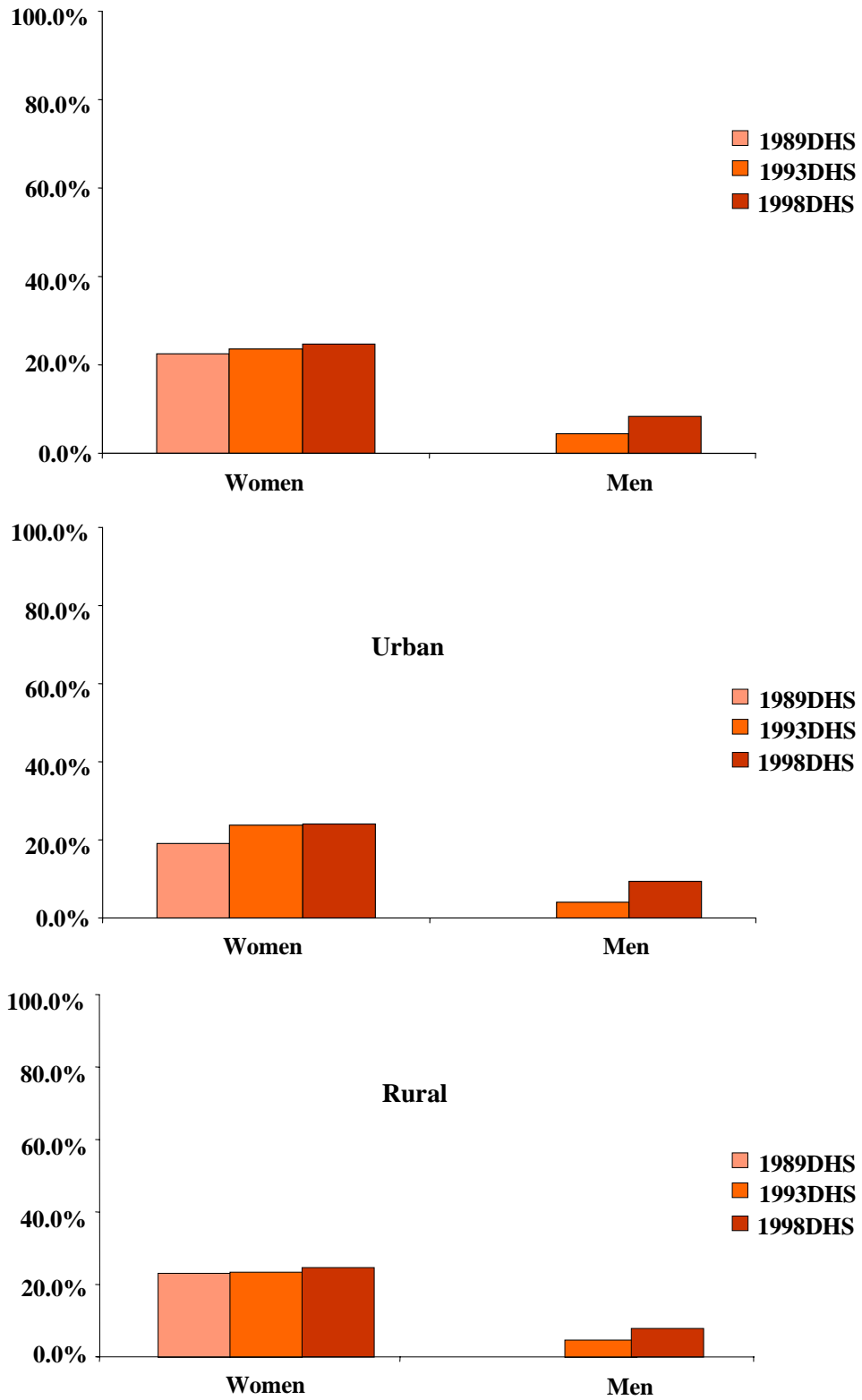




Abstinence for one year

Among women, there was little change over time in the percentage that had abstained from sex during the year preceding the survey (22% in 1989, 24% in 1993, and 25% in 1998—Figure 4.3). On the other hand, the percentage of men who abstained from sex for one year prior to the survey, while much lower than women, showed a slight increase between 1993 and 1998 (from 4.5% to 8.3%). In 1989, rural women were slightly more likely than urban women to have abstained from sex during the year before the survey (26% rural vs. 18% urban). However, throughout the 1990s, the increases in abstinence rates among urban women were greater than among rural women, so that by 1998, there was no difference between the percentage of urban and rural women who abstained from sex. There is not much difference in one-year abstinence rates among men by place of residence, although results of the 1998 KDHS suggest that perhaps abstinence rates may be increasing more sharply among urban men than among rural men. However, with only two data points, this is difficult to assert.

Figure 4.3 Sexual behaviour: No sex during past year



High risk sexual behaviour

Assessing trends in risky sexual behaviour can provide insight into whether people are changing their sexual behaviour to avoid HIV/AIDS. It is important to explore whether the increases in knowledge about AIDS prevention have been accompanied by behaviour changes necessary to curb the epidemic. We looked at the percentage of respondents engaging in each of the following high-risk sexual behaviours: sex with nonregular partners, multiple sexual partnerships, and extramarital sex.

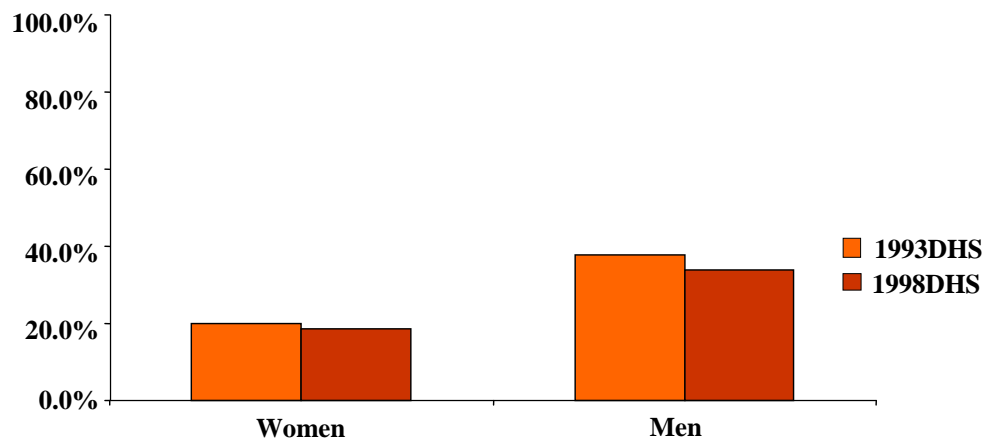
Due to differences in the questionnaires, the definition of nonregular partner varies slightly between the surveys. For indicators derived from the KDHS, nonregular refers to any nonmarital, noncohabiting partner. For data derived from the PSI survey, nonregular refers to any partner other than a spouse (for married respondents) or regular sex partner (for nonmarried respondents).

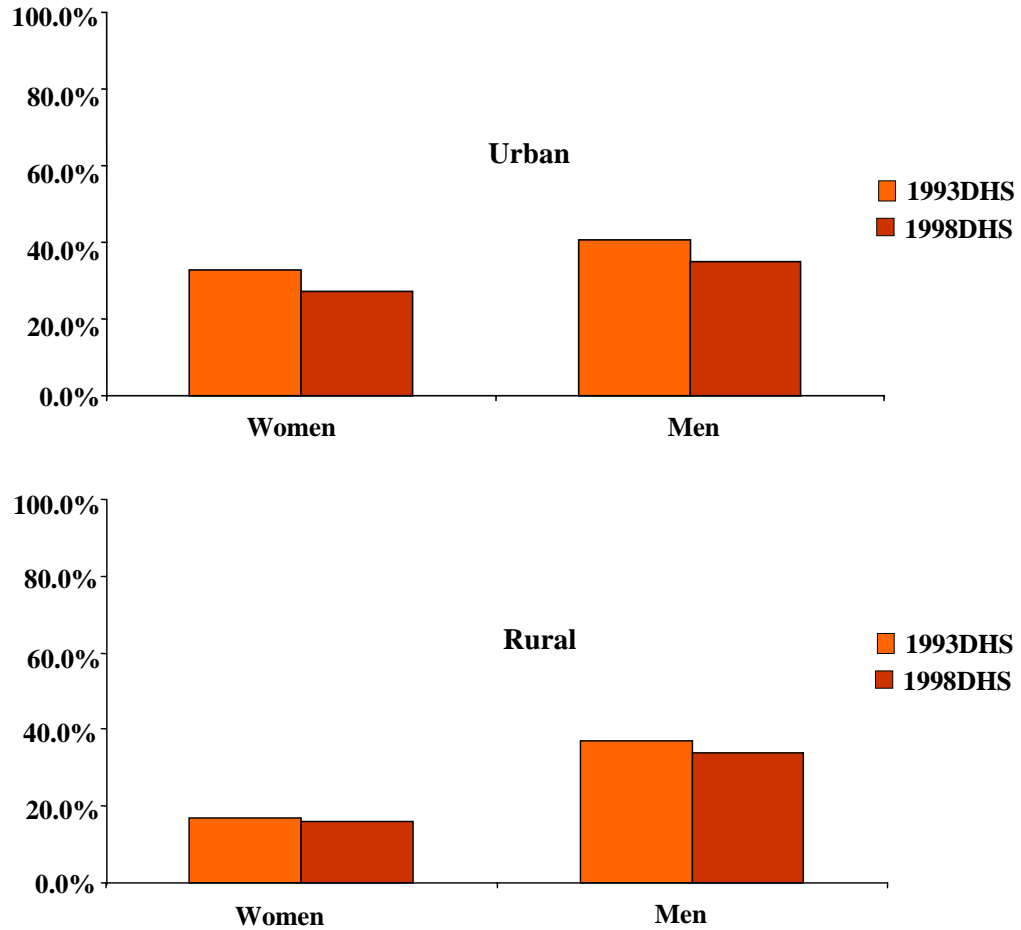
Sex with at least one nonregular partner in the six months preceding the surveys

Since the time period for recall differed among surveys, the surveys that asked about sex with at least one nonregular partner in the six months (1993 and 1998 KDHS) and the 12 months (1989 GPA, 1998 DHS, and 2000 PSI) preceding the survey are discussed separately. The UNAIDS definition of its 'higher risk sex in the last year' asks for a 12-month recall period (UNAIDS, 2000).

As Figure 4.4 shows, in 1993 and 1998 about one in five sexually active women reported having at least one nonregular partner in the previous six months (20% in 1993, 19% in 1998). Nonregular partnerships are almost twice as common among sexually active men than women. In 1993, 39 percent of men reported this behaviour in the previous six months, while 35 percent did so in 1998. During this period, while there was no change in the percentage of sexually active rural women engaging in this behaviour, there were changes among women and men from both urban and rural areas. Among urban women, the percentage reporting at least one nonregular partnership in the preceding six months declined from 33 percent to about 27 percent. Among men, the percentage reporting this behaviour declined from 42 to 36 percent in urban areas and from 38 to 35 percent in rural areas.

Figure 4.4 One or more nonregular partners in the past six months

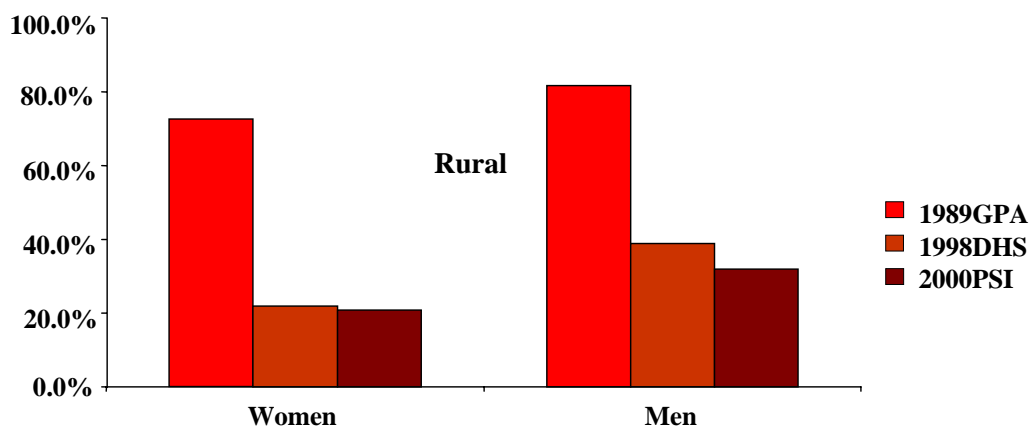
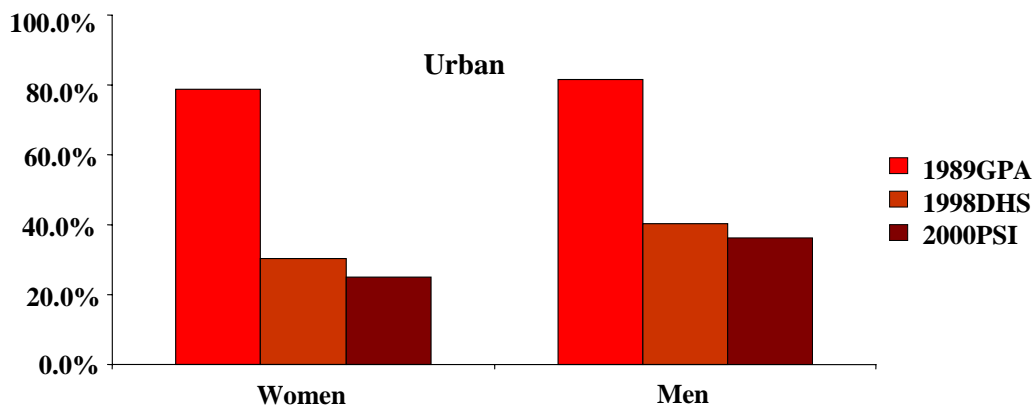
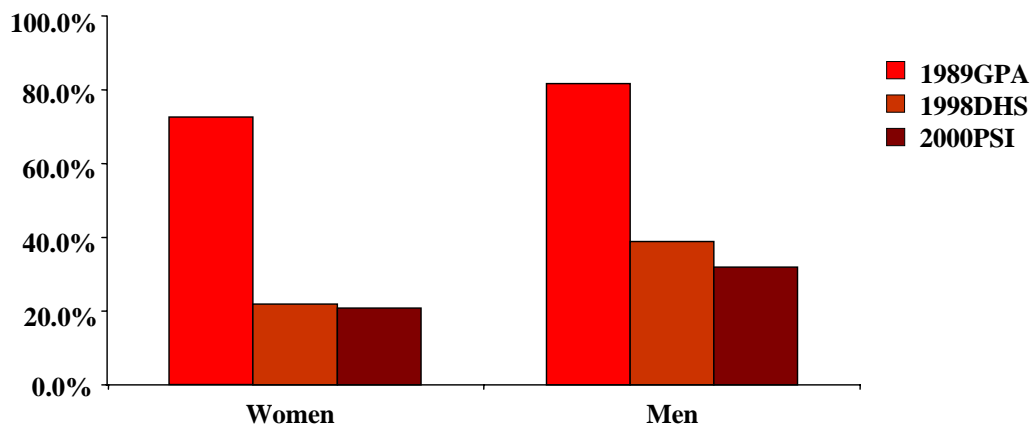




Sex with at least one nonregular partner in the 12 months preceding the surveys

In 1993, the percentages of respondents who reported nonregular partnerships in the 12 months prior to the survey were only slightly higher than those who reported this behaviour in the shorter, six-month period (see Figure 4.5). Among sexually active respondents, 22 percent of women and 39 percent of men reported at least one nonregular sex partner in the 12 months before the survey. Among women, those living in urban areas were more likely than rural women to report sex with a nonregular partner (30% urban vs. 19% rural). The PSI data from 2000 suggest that the percentage of rural men and urban women engaging in nonregular sexual activity declined slightly. Seven percent of rural men reported nonregular partnerships in the year before the survey and 5 percent less urban women reported this behaviour in 2000 compared with 1998.

Figure 4.5 One or more nonregular partners in the past 6–12 months



Multiple, nonregular partnerships

While there has been little change in the percentage of people reporting nonregular partnerships, there was a decline in the percentage of respondents reporting multiple, nonregular partners in the year prior to the survey (Figure 4.6). In 1993 and 2000, few women (3% and 2% of women, respectively) reported at least two nonregular partners. Men were much more likely to report multiple, nonregular partners. However, the percentage of men who did so declined from 28 to 9 percent between 1993 and 2000. The difference in this indicator between urban and rural residents was minimal in 1998 and had virtually disappeared by 2000. Very few respondents reported four or more nonregular partners (less than 1% of women and between 5 and 6% of men) in each of the surveys (Figure 4.7).

Figure 4.6 Two or more nonregular partners in the past year

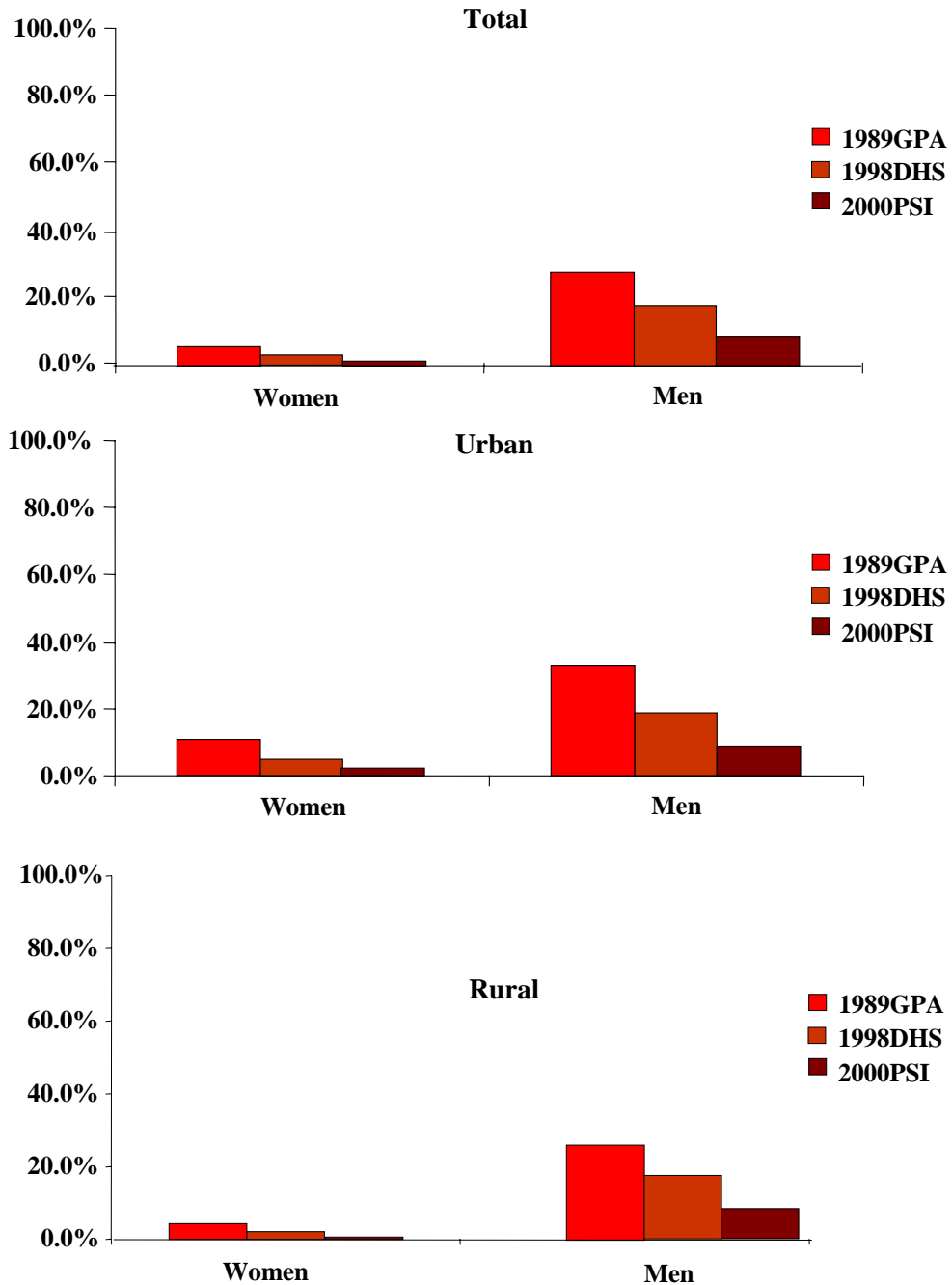
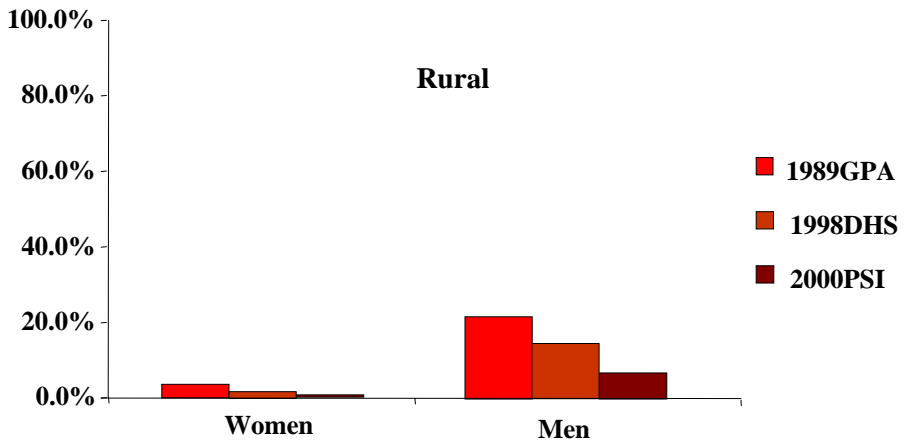
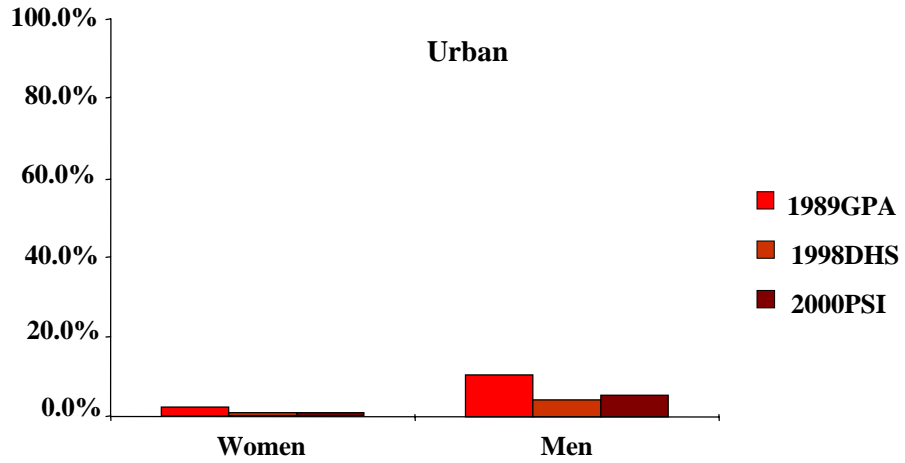
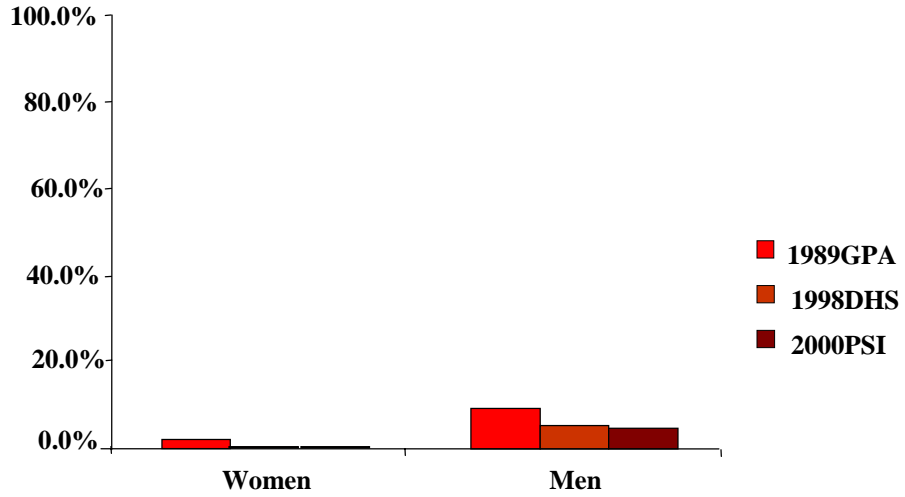


Figure 4.7 Four or more nonregular partners in the past year



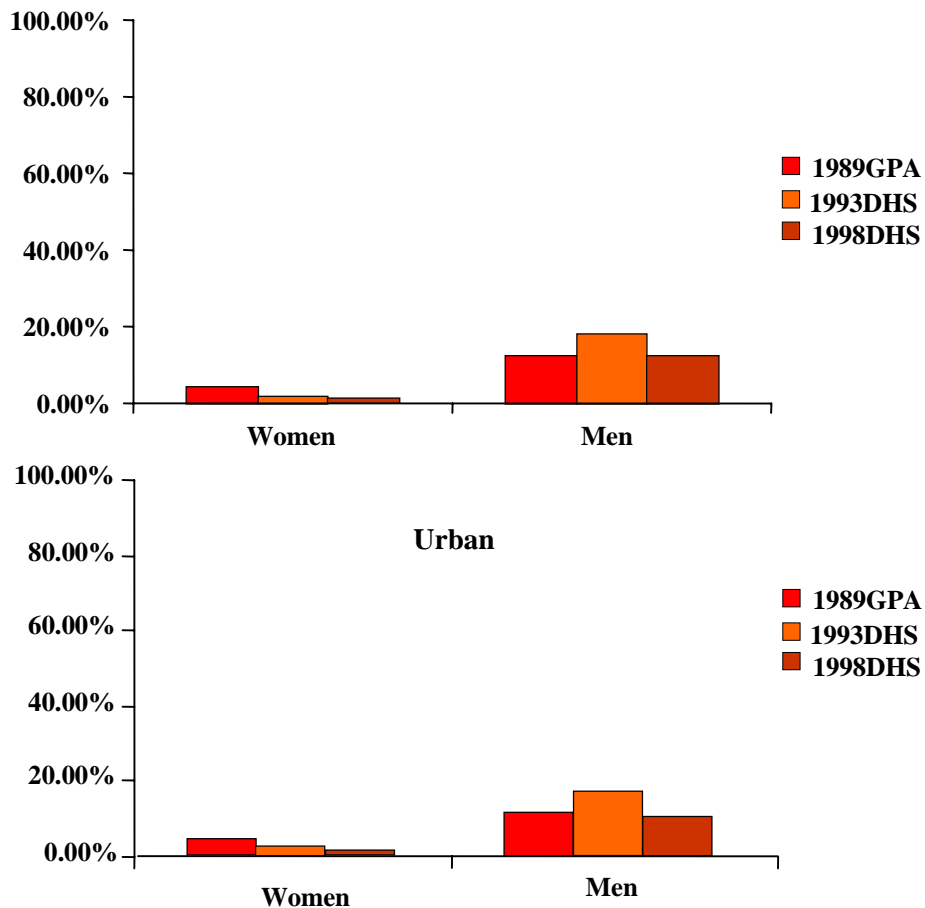
Multiple partners and the risk of STI

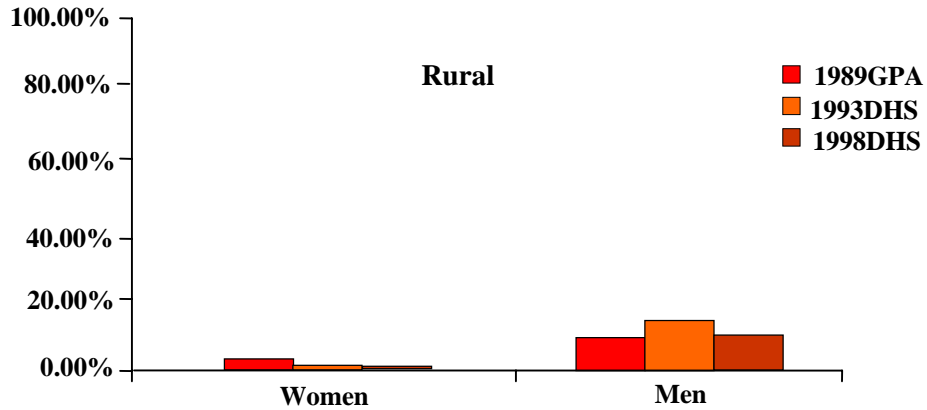
- Data was collected from clients with STIs attending a health facility and through a community survey in Nairobi under the STD/HIV project in 1991. The spread of STIs was used as a predictor of HIV spread. The study found that the rate at which individuals change partners and the extent of mixing among individuals of different sexual activity levels determines to a large extent the rate at which infection spreads and the proportion of the population affected (Moses, 1994a). Delay in seeking treatment for an STI, particularly among women, was also observed to increase the spread of STI and widen the opportunity for HIV infection (Moses, 1994b).

Extramarital sex

Married or cohabiting men were much more likely than their female counterparts to have had sex with someone other than their spouse in the six months preceding the survey (see Figure 4.8). The percentage of married or cohabiting women who reported having extramarital sex in the six-month period was very low (2.0% in 1993 and 1.2% in 1998). The percentage of married or cohabiting men who had sex with someone other than a spouse during the same recall period was much higher, but showed evidence of decline between 1993 and 1998 (18% in 1993 and 13% in 1998). Although men in urban areas were slightly more likely than rural men to have had extramarital relations, the declines between 1993 and 1998 were similar in both areas.

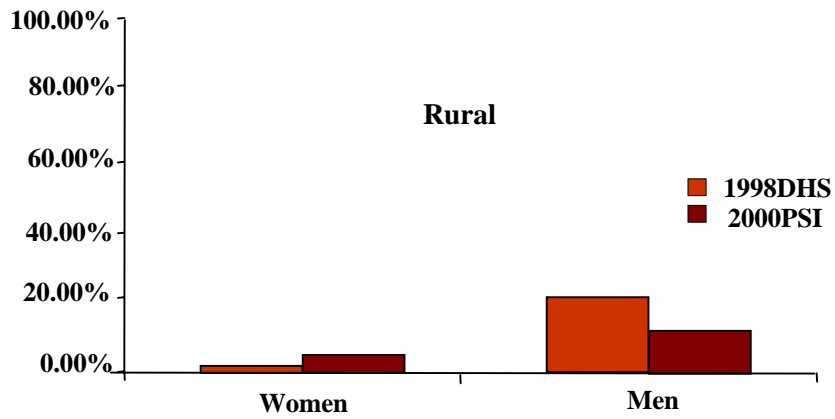
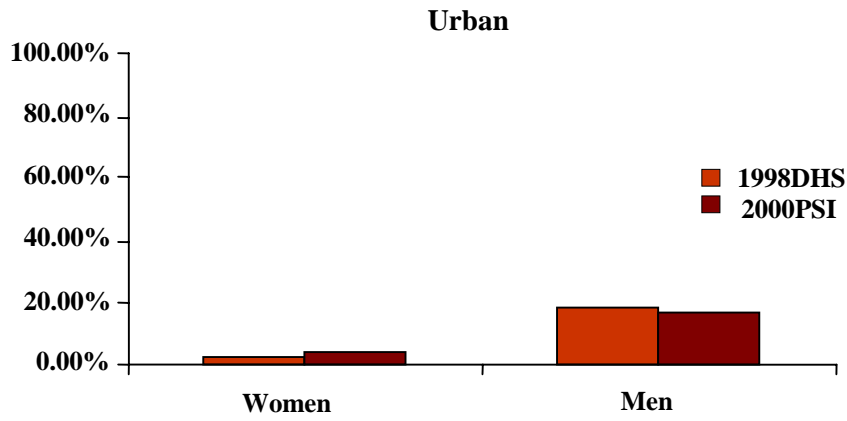
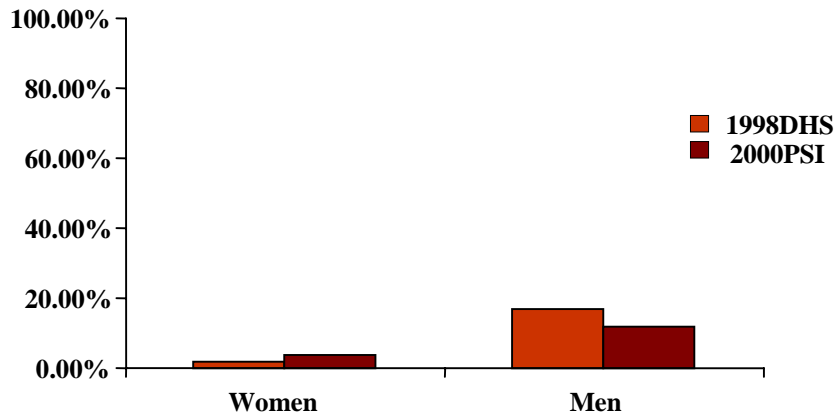
Figure 4.8 Sex with person other than spouse in the past six months (married/cohabiting women and men)





The 1998 KDHS and 2000 PSI surveys collected data that allowed a calculation of the percentage of respondents who reported extramarital sex within the last year. As with the nonregular partnership indicator, increasing the recall period to 12 months results in a slightly larger percentage of respondents reporting extramarital sex (Figure 4.9). About 1.7 percent of women and 17 percent of men reported extramarital sex in the year prior to the 1998 KDHS. While between 1998 and 2000 extramarital sex declined to 12 percent among married men, it rose slightly to about 4 percent among married women. There was no difference observed by place of residence among women, but almost twice the men in urban areas had extramarital sex in the 12 months before the survey when compared with those in rural areas (16% urban vs. 9% rural).

**Figure 4.9 Sex with person other than spouse in past year
(married/cohabitating women and men)**



High Risk Sexual Behaviour and Alcohol Consumption

A study conducted in several sites of Thika, Central province interviewed 502 women practicing commercial sex (Ngugi, 1999a). Findings documented that:

- They had frequent partner change (an average of 3 clients a day).
- 62% of male customers refused to use condoms, and only 29% of women always used condoms
- 63% of these women had suffered an STD 3 months prior to the interview

Although alcohol use was not studied, available information suggested that the majority of these women drink alcohol either in bars, nightclubs, or brothels where clients are found. One of them told the investigators, “You have to be under the influence of alcohol or something to sleep with as many clients as we sleep with- it is hard”. It is also possible that under intoxication they forget or are unable to negotiate male condom use.

Findings from 182 respondents at a National Youth Service camp, ranging in age between 19–45 years included:

- Frequent partner changes three months prior to the study
- 18% of males had sex with a prostitute and 40% had sex with wives as well as girlfriends
- 10% used a condom
- 24% used alcohol
- Rates of STI were 32% within the last twelve months

The investigators conclude that the ground is laid for the spread of HIV, given the combination of commercial sex, alcohol, and low condom use. (Ngugi, 1999b)

Cultural Practices and the Risk of HIV

- The cultural institution of widow inheritance and cleansing rituals may contribute to the spread of HIV. The cleansing ritual often involves sex that is likely to transmit HIV. The widow who is being cleansed may be HIV positive because her spouse died of AIDS, or the cleanser may be HIV (Kimani, 1999 and Okeyo, 1994).
- Community members feared that entrenched traditional practices such as polygamy, widow inheritance and funeral rites (Obukoko in Kakamega) are fuelling the spread of these infections. In both men and women, there was a clear perception of risk, but the sense of helplessness regarding protection was overwhelming (Olenja 2001).

Chapter 5 Knowledge and Use of Condoms

Because people are still engaging in high-risk sexual behaviour, it is important for them to use condoms to avoid spreading HIV. The MOH along with other stakeholders have made efforts to increase awareness of the protective benefits of using condoms and where they can be obtained (either free of charge or commercially) and also to encourage people to use condoms regularly. This chapter reviews the trends in awareness of condoms, knowledge of condom sources, ever use of condoms, and condom use at last sex.

Condom Distribution in Kenya

The public sector and social marketing schemes are the primary sources of condoms in Kenya.

- The GOK distributes condoms free of charge (primarily through family planning clinics), while social marketing schemes distribute condoms to retail outlets to sell them at low cost.
- The number of condoms distributed annually nearly doubled from 41 million to 74 million between 1997 and 2000. Approximately 20% of these figures come from social marketing schemes.
- Until recently international donors were the main source of funding for procurement and distribution of public sector and social marketing condoms. As part of the World Bank-financed DARE project, a large-scale HIV/AIDS program also underway in Kenya, the GOK committed US\$10 million to purchase 300 million condoms between 2001–2004.

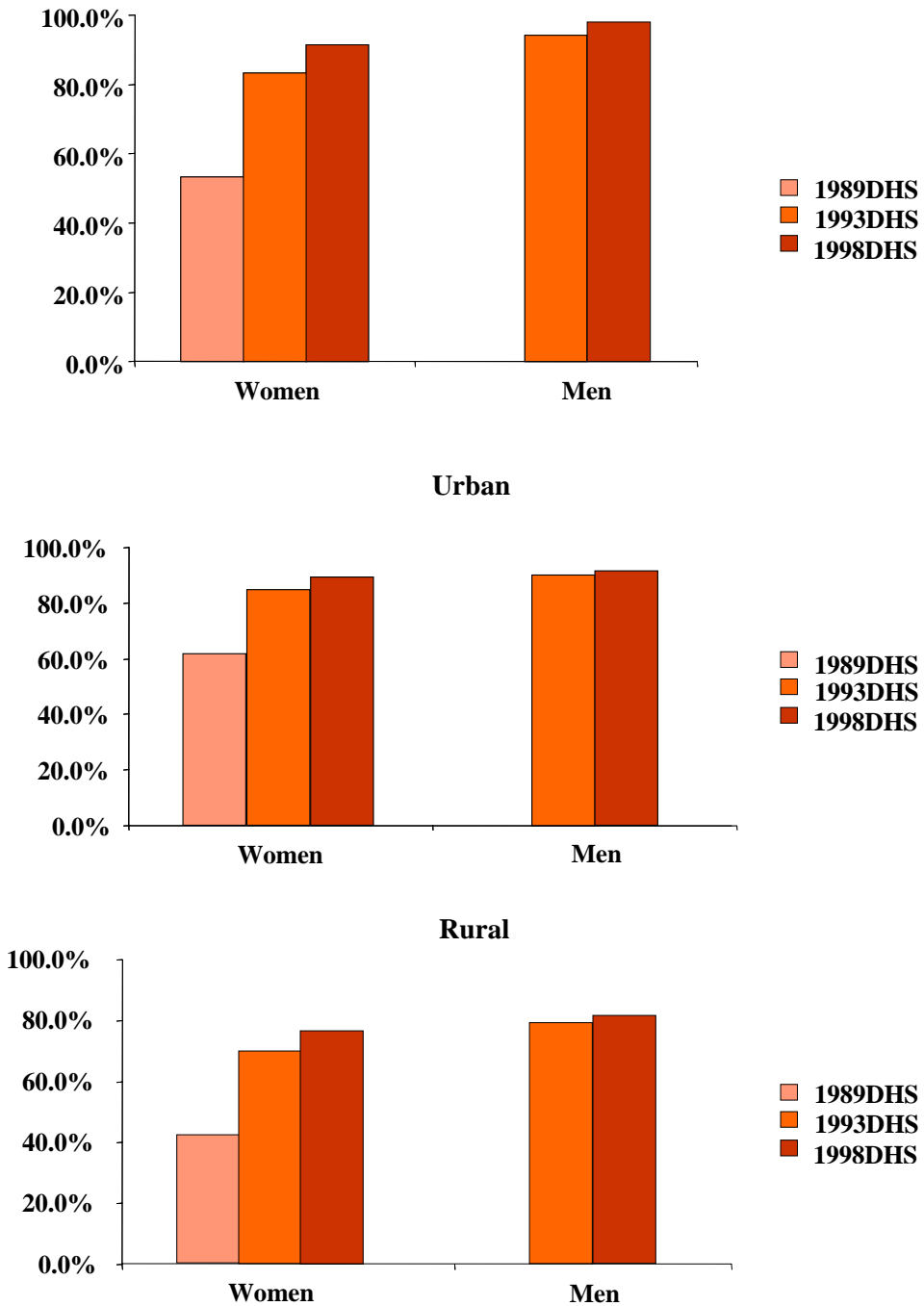
(KMOH/NACC, 2001)

Knowledge of condoms for family planning and/or STI prevention

During the three KDHS surveys, respondents were asked whether they had heard about condoms in the context of family planning. In addition to this question, respondents who participated in the 1998 KDHS were also asked if they had heard about condoms for STI prevention. Although the 1989 GPA survey asked about knowledge of condoms, it only asked it of people who were aware of AIDS. Therefore, the GPA data are not included in this analysis.

Knowledge of condoms increased steadily throughout the 1990s and reached very high levels (see Figure 5.1). In 1989, only 53 percent of women knew of condoms as a family planning method. This rose to 86 percent in 1993 and reached 92 percent by 1998. Including women who knew about condoms for STI prevention in addition to those who knew about condoms for family planning, in 1998, 94 percent of women knew about condoms. Among men, knowledge of condoms for family planning was first measured in 1993. At that time, knowledge was already quite high (91%), and increased to 96 percent by 1998. Condom knowledge among men for either family planning or STI prevention was virtually universal (98%). This upward trend in knowledge did not differ by place of residence although levels were higher in urban areas. In 1989, 67 percent of urban women compared with 51 percent of rural women knew of condoms for family planning. By 1998, knowledge of condoms for family planning was very high among both urban (96%) and rural (90%) women. Including respondents who had heard of condoms for STI prevention, virtually all urban women (98%) and 93 percent of rural women knew about condoms. Similarly, in 1998, men's knowledge of condom for either family planning or STI prevention was virtually universal in both urban (>99%) and rural (98%) areas.

Figure 5.1 Knowledge of condoms for family planning



Knowledge of condom sources

As discussed above, most people in Kenya were aware of condoms for family planning or STI prevention. However, people need to know where to obtain condoms if they are to use them consistently. Respondents were asked whether or not they knew where to obtain condoms. This question was asked of all women during the 1989 and 1998 KDHS and of all respondents, male and female, during the 2000 PSI surveys. Due to differences between the 1993 KDHS questionnaire and the others, the 1993 figures may overestimate the percentage of respondents who knew of condom sources. In the 1993 DHS, respondents were asked if they knew of a

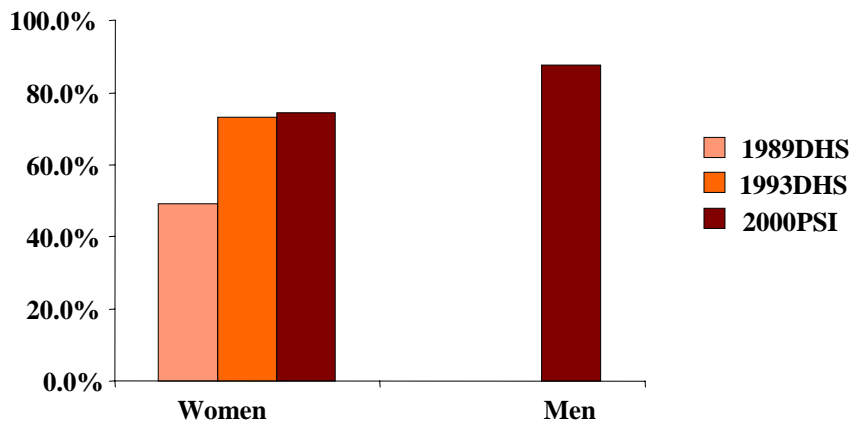
source of condoms. In the 1989 and 1998 KDHS and 2000 PSI, however, respondents were asked to name a source of condoms; only those who did so were considered to have correct knowledge of condom sources. Additionally, in the 1998 KDHS, the question was only asked of sexually experienced respondents. Therefore, the trends in knowledge of condom sources for all respondents excluding the 1998 KDHS data are presented first, and then for sexually experienced respondents including the 1998 KDHS.

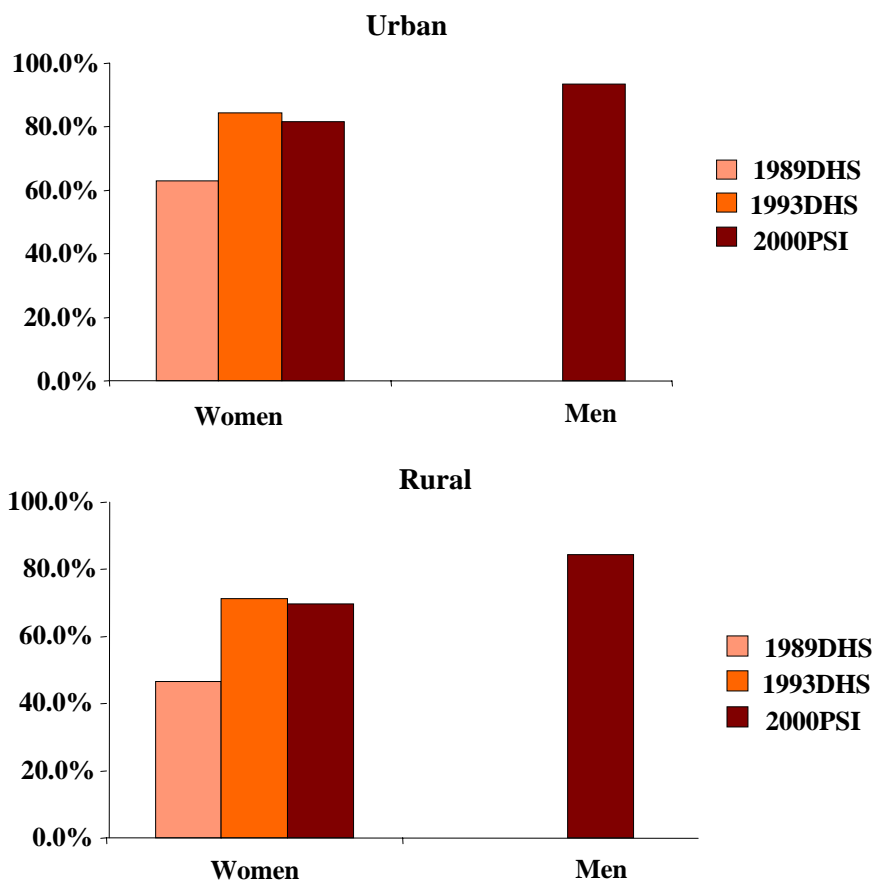
All respondents

In 1989, only 49 percent of women knew where to obtain a condom (see Figure 5.2). Encouragingly, early in the 1990s there was a substantial rise in the percentage of respondents who knew a source of condoms. By 1993, almost three-quarters of the women (73%) knew where to get condoms. However, this trend levelled off, and by the 2000 PSI survey, the proportion of women who knew where to get a condom remained the same (74%). The difference in the 1993 KDHS questionnaire makes it difficult to determine whether the greatest increase in the percentage of people who know a condom source may have occurred in the early or late 1990s. There are no comparable data to show a trend in the knowledge of sources for condoms among men, but the 2000 PSI survey shows that men (88%) were more likely than women (74%) to know of a source for condoms.

In all three surveys, urban residents were more likely than rural residents to name a source, but the trend toward increased knowledge was similar in both areas. At the end of the decade, the urban rural differences remained; 82 percent of women and 93 percent of men in urban areas knew a source of condoms, while 70 and 84 percent of rural women and men, respectively, knew where to obtain a condom. From these data, it is not possible to determine if rural residents are less knowledgeable about the condom sources that are available or if this finding reflects limited availability of condoms in rural areas relative to urban areas.

Figure 5.2 Knowledge of where to get condoms (all respondents)

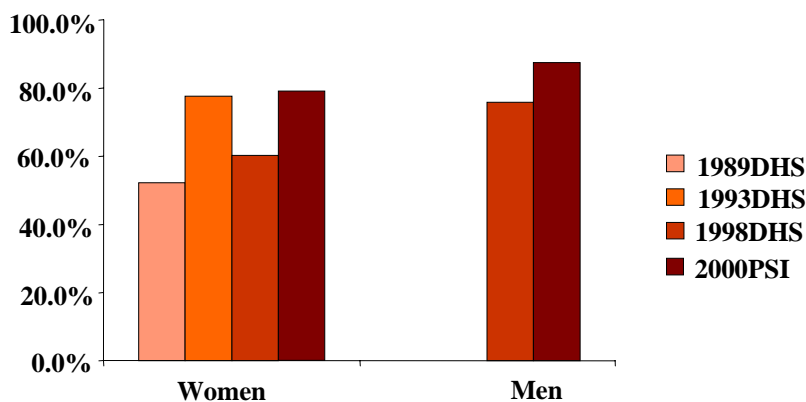


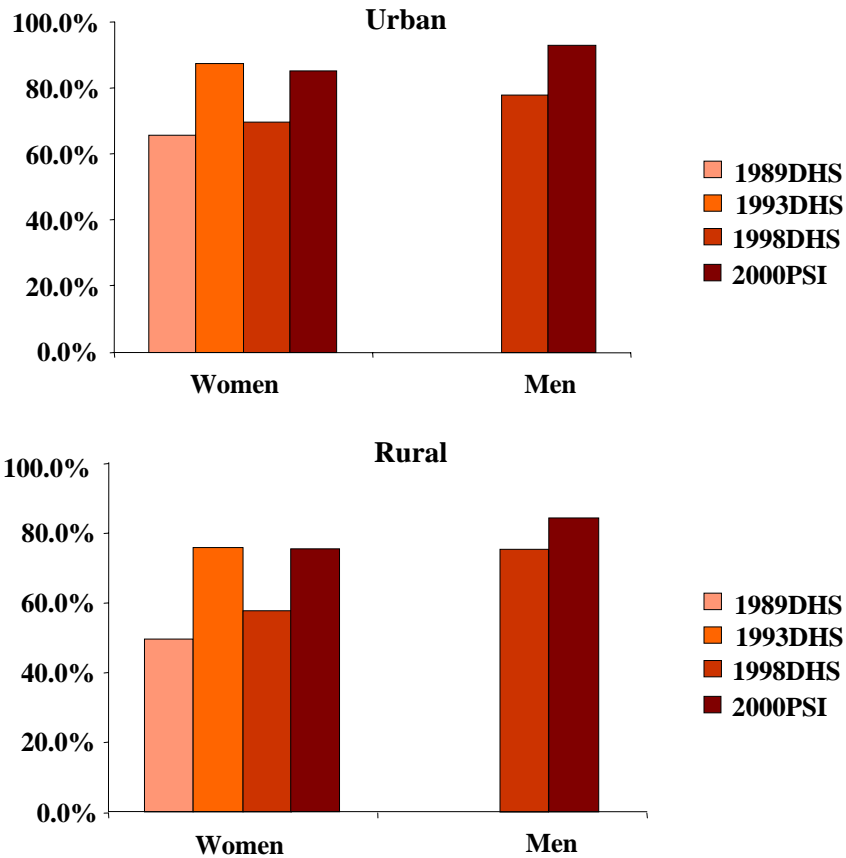


Sexually experienced respondents

Among sexually experienced women, knowledge of condom sources was higher than among all women and increased steadily throughout the decade (see Figure 5.3). The percentage of women who could name a source of condoms increased from 52 percent in 1989 to 60 percent in 1998 and reached 79 percent by 2000. In 1998, 76 percent of sexually experienced men knew where to obtain condoms with little difference between those in urban and rural areas. By 2000, a greater percentage of sexually experienced men were able to name at least one condom source (88%), compared with 1998. Similar trends were seen in both urban and rural areas, although urban respondents were consistently more likely to mention a source than rural residents (93% urban vs. 84% rural in 2000).

Figure 5.3 Knowledge of where to get condoms (respondents who have ever had sex)





Condom use

Knowledge of condoms as a family planning or STI prevention method and where to obtain them increased over the decade. As for any health intervention, to be effective, knowledge needs to translate into practice. More people know about condoms than use them for either family planning or STI prevention. Two indicators are used to explore this behaviour among sexually active respondents⁵: ever use of condoms and condom use at last sex.

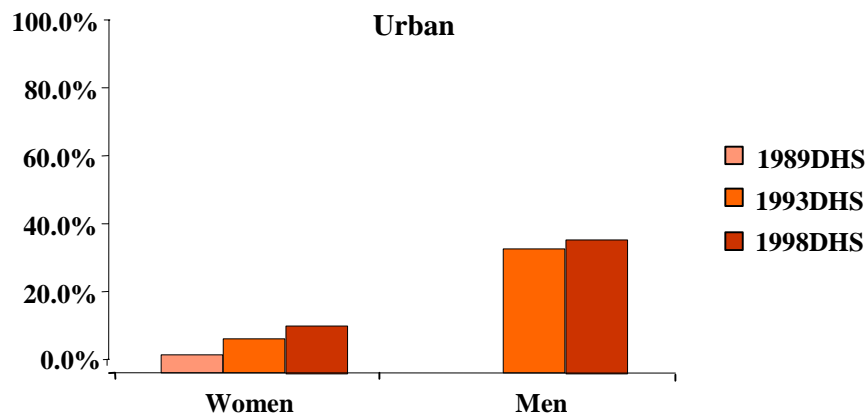
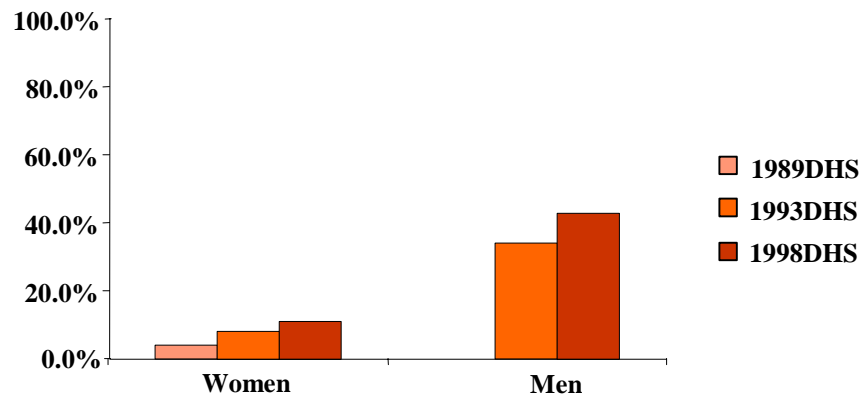
Ever use of condoms

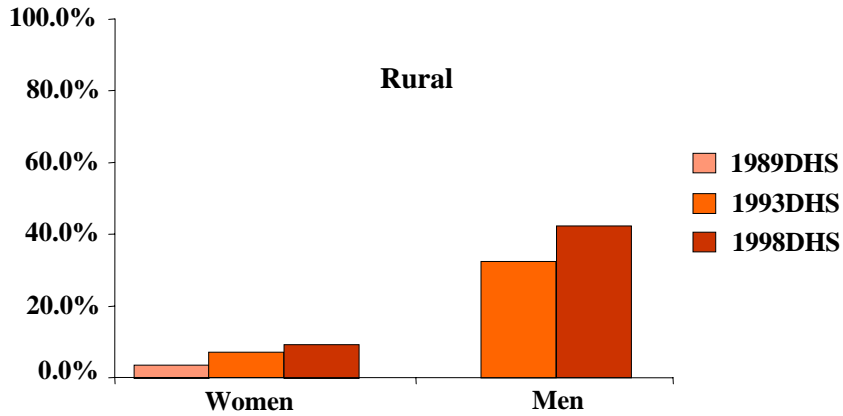
The primary source of data for the indicators related to ever use of condoms is the three KDHS. The 1989 KDHS did not ask about condom use for STI prevention so it is not included in the analyses of those data. Because 1989 GPA respondents who had not heard about AIDS or who did not know anything about AIDS were not asked questions about condom use, the results of the survey were not included. In the 2000 PSI, a third of respondents had missing data in these questions. Therefore, results from the 2000 PSI were not included in the analysis of condom use for contraception. They are included in the analysis for STI prevention because another question asked if a condom had ever been used without reference to purpose.

⁵ For the purposes of this analysis, sexually active refers to respondents who reported sexual activity within the recall period (12 months).

The percentage of sexually active respondents reporting ever use of condoms increased somewhat during the 1990s, but the levels of use remain low, especially among women. Results of the 1989 KDHS show that only 4 percent of sexually active women had ever used a condom for family planning (Figure 5.4). This figure increased to 8 percent in 1993 and 11 percent by 1998. Urban women were nearly twice as likely as rural women to have ever used a condom for family planning, a difference that persisted throughout the decade. Early in the 1990s, men were about four times as likely as women to have used a condom for the purpose of family planning, and throughout the decade condom use increased among men as well. In 1998, 43 percent of men had used a condom for family planning, up from 34 percent in 1993. Men in urban areas were more likely than those in rural areas to have used a condom. In 1993, about one and a half times as many sexually active urban men when compared with those in rural areas used a condom (47% urban vs. 30% rural). During the five-year period, condom ever use for family planning increased more sharply in rural than in urban areas, so that by 1998 the gap between urban and rural men had narrowed (51% urban vs. 40% rural).

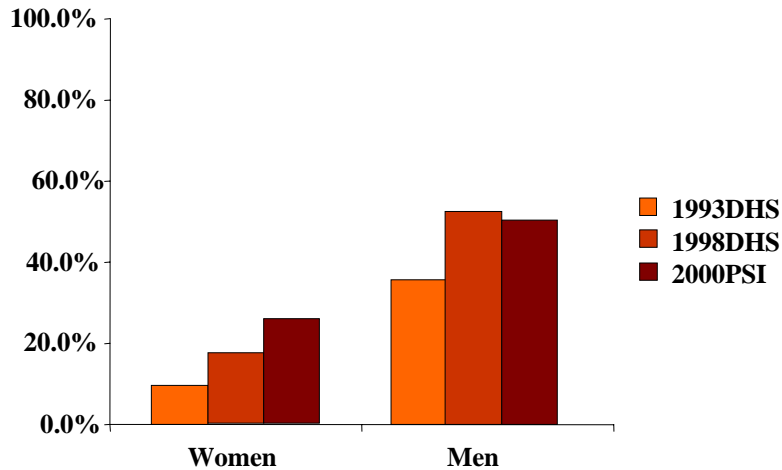
**Figure 5.4 Has ever used condoms for family planning
(respondents who have ever had sex)**

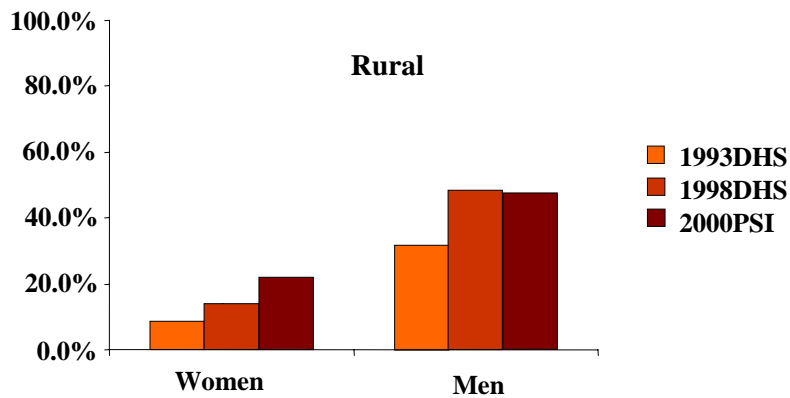
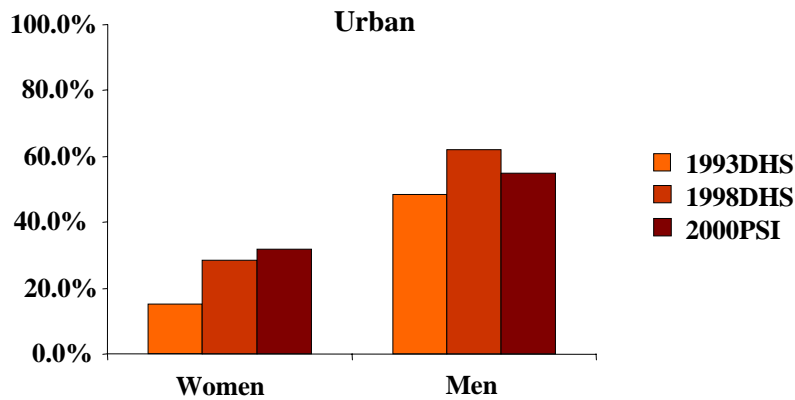




The percentage of sexually active respondents who had ever used condoms, regardless of whether it was for family planning or STD prevention was examined (see Figure 5.5). Throughout the 1990s, two to three times as many men as compared with women used a condom for either purpose. About one-third of sexually active men (36%) compared with 10 percent of sexually active women had ever used a condom at the time of the 1993 KDHS. By 1998, condom use for either purpose had increased to 53 percent among men and 17 percent among women. Even toward the end of the decade, condom use continued to rise among women. By 2000, 26 percent of sexually active women reported having used a condom for either family planning or STI prevention. Among men, there was a slight decline in condom use between 1998 and 2000. Condom use was consistently higher in urban areas than in rural areas, but the trends over time were similar.

Figure 5.5 Has ever used condoms for family planning or STI prevention (respondents who have ever had sex)



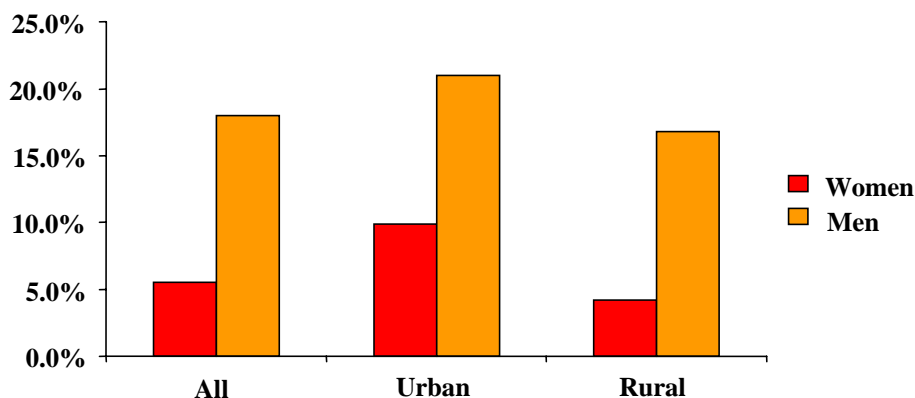


Condom use at last sex

Condom use must be consistent in order to effectively prevent HIV transmission. The increases in ever use of condoms are a positive sign, but people must use condoms consistently to reduce their chances of becoming infected. To get a sense of the percentage of people who were regularly using condoms, sexually active respondents were asked whether a condom was used during their most recent sexual encounter. Condom use at last sex does not measure consistent condom use, but, as regular use of condoms rises, the percentage of people who used a condom at last sex should also rise. This allows us to estimate trends in regular condom use.

Because these data are only available from the 1998 KDHS, it is not possible to discuss trends, but these results are discussed. At that time, three times as many men as women used a condom at last sex (18% and 6%, respectively). As Figure 5.6 shows, condom use was higher with urban women than among those in rural at last sex (10% urban and 4% rural). Men in urban areas were also more likely than those in rural areas to have used a condom at last sex (21% urban and 17% rural).

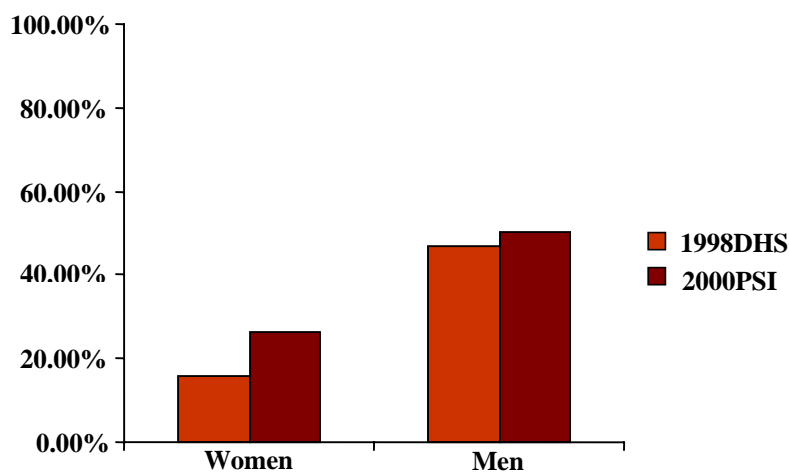
Figure 5.6 Used condoms during last sex in last 12 months (respondents who had sex in the last 12 months)—1998 KDHS only

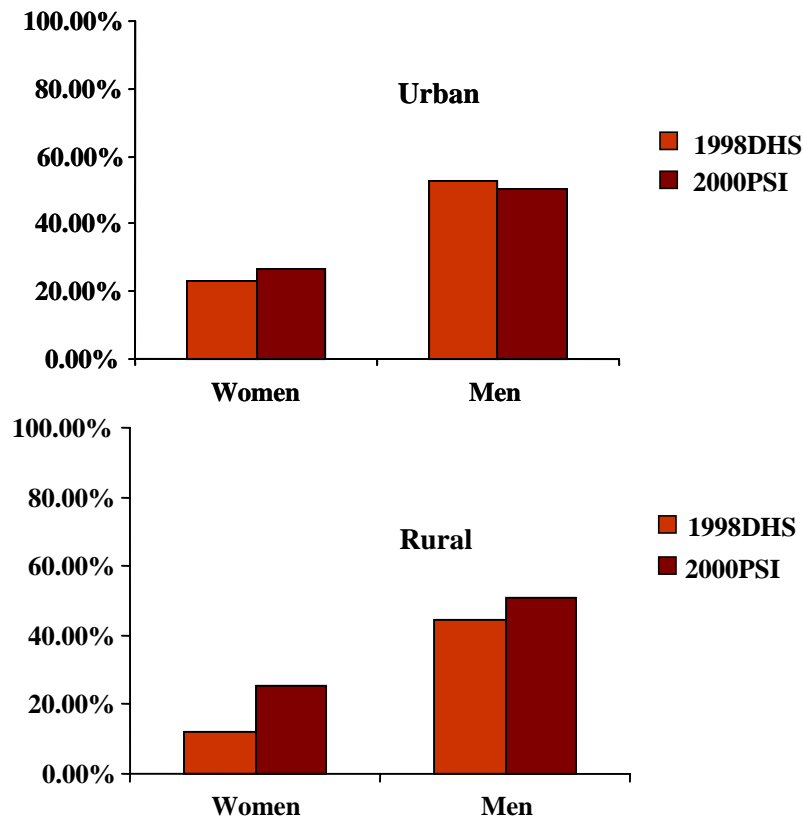


Regular condom use is most important during high-risk sex acts such as sex with a nonregular partner. The data needed to calculate condom use with a nonregular partner is only available from the 1998 KDHS and the 2000 PSI survey, but the two surveys are not comparable. The 1998 KDHS asked about condom use during the last sexual experience with a nonspouse or noncohabitating partner. The 2000 PSI did not ask about condom use at last sex. Despite these differences, the results are presented in Figure 5.7. For reference sake, UNAIDS defines a sexual behaviour indicator for ‘Condom use at last higher risk sex’ as “the percent of respondents who say they used a condom the last time they had sex with a nonmarital, noncohabitating partner, of those who have had sex with such a partner in the last 12 months” (UNAIDS, 2000).

In 1998, respondents were asked about their last sexual encounter with a nonregular partner in the 12 months before the survey and whether or not a condom was used. Overall, condom use is higher during sex with nonregular partners than with other partners. Similar to the results for condom use at last sex, men are more likely than women to have used a condom during their last encounter with a nonregular sex partner. In 1998, about 16 percent of sexually active women and 47 percent of sexually active men used a condom the last time they had sex with a nonregular partner. While in 1998 urban residents were more likely than rural residents to have used a condom at last sex with a nonregular partner, these differences were not present in 2000, by which time 26 percent of women and 50 percent of men had used a condom at last sex with a nonregular partner, regardless of place of residence.

Figure 5.7 Used condoms during last sex with nonregular partner in last 12 months (respondents who had sex with nonregular partner)





Condom Use

In the WHO multicentre study, a qualitative component, using focus group discussions, was conducted among youth (Kimani, 1999). Findings about youth attitudes towards condoms are as follows.

- Condoms were not very popular, and for this reason, boys would only have sex without a condom with girls they trust. The number of sexual partners did not seem to matter; rather, the type of partner did. Most boys reported non-use of condoms with their regular girlfriends. However, they stated that they use them with girls who they meet for the first time and easily agree to have sex. They particularly emphasized that condoms are used when they have sex with prostitutes. For example, one respondent noted that he has two regular girlfriends, but he does not use condoms with either of them even though he does not know whether they have other partners. Condom use is associated with promiscuity and prostitution where the risk for infection is apparently evident.
- Girls gave their boyfriends a chance to choose whether to use a condom or not.
- For most girls, the concern that a man will think she is infected if she suggests the use of a condom mitigates against condom use.

In an eight-district study, condom use was reported to be low. Condom use was reported to be greater in youth than men, but both groups acknowledged multiple sexual partners (Muia, 2001).

In situations where peer education has taken root, there is an increase in condom use. Peer-led health promotion through self-help groups led to consistent use of condoms by 80 percent of the commercial sex workers always and 100 percent some of the time (Ngugi, 2003).

Chapter 6 Demographic Impact of the HIV Epidemic: Mortality and Orphans

Mortality

With the onset of the HIV/AIDS epidemic from the early 1980s, Kenya's demographic patterns have experienced reversals (Table 6.1). Mortality rates, which had been declining, are now increasing. Life expectancy from birth, which had been increasing, has fallen. Child mortality indicators have worsened. These changes in demographic parameters have coincided with increasing rates of HIV/AIDS.

Table 6.1 Mortality trends in Kenya, 1989–2000

Mortality Indicator	1979 Census	1989 Census	1989 DHS	1993 DHS	1998 DHS	1999 Census
Crude Death Rate	14	10	-	-	-	12
Male Life Expectancy	52.3	57.5	-	-	-	52.8
Female Life Expectancy	55.1	61.4	-	-	-	60.4
Combined Life Expectancy	-	-	-	-	-	-
Infant Mortality Rate	88	66	61	62	74	77
Under-5 Mortality Rate	157	113	90	96	112	116

Sources: Kenya. Central Bureau of Statistics. 1979, 1996 and 2002 and Kenya. Central Bureau of Statistics and Macro International Inc. 1990, 1994, and 1999.

At the end of the 1970's, mortality had remarkably declined to a crude death rate of 14 per 1,000. It further declined to 10 per 1,000 by the end of the 1980's. In 1999 a reversal was seen with a crude death rate of 12 per 1,000 reported.

The incidence of HIV/AIDS is also negatively affecting life expectancy. The Central Bureau of Statistics (CBS) estimated that in the absence of AIDS, life expectancy at birth would currently be 65 years, but life expectancy has been reduced to about 47 years (KMOH, 2001). According to census figures, life expectancy has been reduced from 57.5 to 52.8 years for men and 61.4 to 60.4 years for women between the 1989 at 1999 census.

HIV/AIDS has also affected child survival. Generally, between 30 to 40 percent of children born to HIV-infected mothers will also be infected with HIV. Most of these babies develop AIDS and die before their second birthday. A very small proportion survives to five years of age. AIDS appears to be the major contributor to child death and exacerbates the influence of other known serious causes of child mortality such as malaria and measles.

Whereas indicators of child mortality had been improving prior to 1990, KDHS data shows a reversal during the 1990s (Figure 6.1). Neonatal mortality was virtually unchanged during that time period (approximately 27 deaths per 1,000 live births), indicating that deaths were occurring later in childhood. Under-5 mortality worsened from 89.8 per 1,000 in 1989 to 111.5 in 1998. The 1989 and 1999 inter-censal data show that there were provincial differences in under-five mortality. In Table 6.2, those data are combined with 2000 HIV prevalence rates to determine if there is an association between under-five mortality and HIV prevalence. Though there are no obvious associations, three of the four provinces that had under-five mortality less than 100 per 1,000 had the highest changes in under-five mortality. The four provinces with under-five mortality greater than 100 per 1,000 did not see as much of a worsening in that rate between the

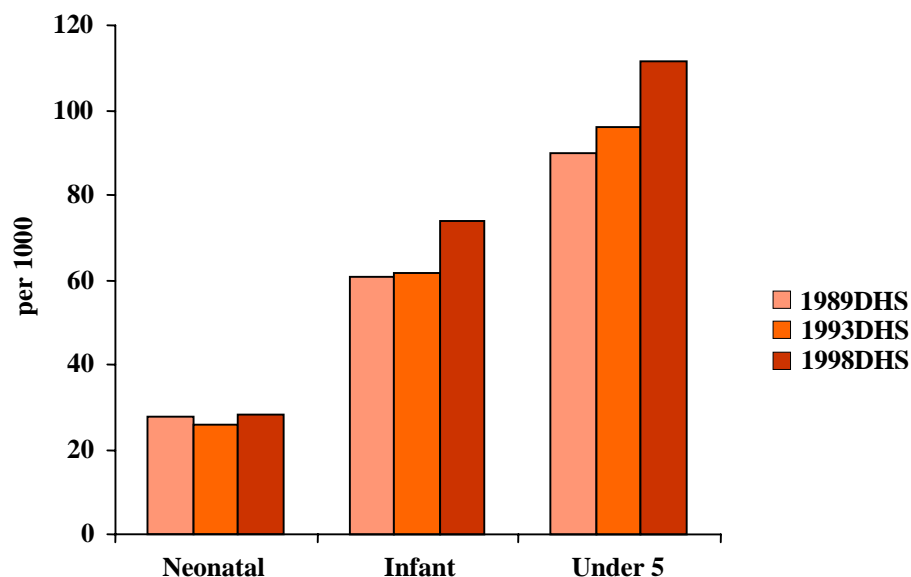
two time periods. In fact, the province with the lowest HIV prevalence had the largest improvement in under-five mortality. This apparent low under-five mortality and HIV-prevalence in North Eastern province has to be interpreted with caution as elements of under-reporting of infant deaths, age misreporting, and wrong dating of deaths as well as the limited screening of ANC clients at health facilities may exist in some districts where physical access limits use of health facilities.

Table 6.2 Inter-censal under-five mortality trends (1979–89 and 1989–99) and HIV prevalence, by province

Province	1979–1989 (deaths per 1,000)	1989–1999 (deaths per 1,000)	Percentage change in under- five mortality (%)	2000 HIV Prevalence (%)
Central	50	66	32	13
Eastern	72	79	10	16
Nairobi	75	93	24	16
Rift Valley	92	86	-6	11
Coast	131	139	6	10
North-Eastern	131	103	-21	3
Nyanza	179	192	7	22
Western	155	159	2	12

Source: Kenya. Central Bureau of Statistics. 1996 and 2002 and KMOH, 2001

Figure 6.1 Child mortality

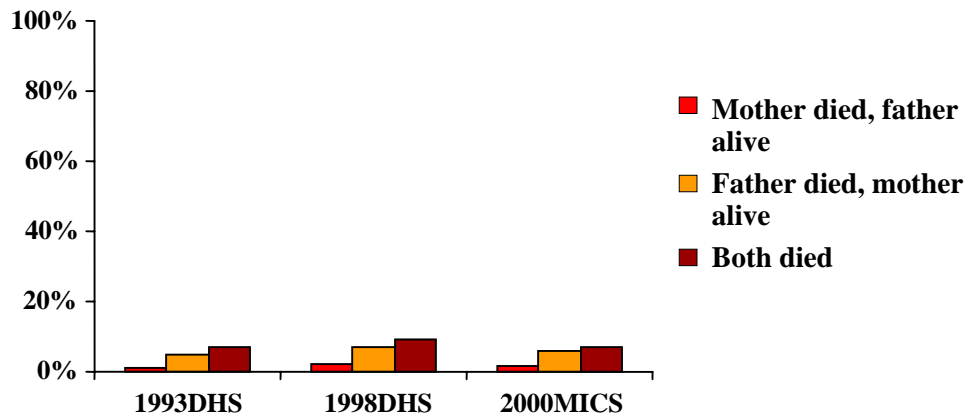


AIDS orphans

According to 1993 and 1998 KDHS and 2000 MICS data, the proportion of children under age 15 living in surveyed households who had lost a parent has increased during the 1990s (Figure 6.2). Most of orphans had lost either a father or both parents. These household surveys underestimate the proportion of orphans in the population, as orphans not living on the street would not have

been included. The MOH has defined an orphan as a person age 15 and below who has lost a mother to AIDS (KMOH, 2001). Deaths due to AIDS have led to increased numbers of orphans in Kenya. The number of orphans in 1996 was estimated at 300,000 (Forsythe, 1996) and was expected to have risen to 900,000 in 2000 (KMOH, 2001). This is only a fraction of the population of children affected by AIDS. More children have withdrawn from school to care for a sick relative or have become breadwinners to replace the income of a sick parent (Csete, 2001).

Figure 6.2 Percentage of children who are orphans



The state of being orphaned lends itself to a myriad of problems. The *Common Country Assessment* published in 2000 by the United Nations agencies in Kenya noted that the escalating population of children orphaned by AIDS has led to an increase in child-headed households and inevitably in child labour. Orphans who have lost both parents have to fend for themselves, sometimes becoming custodians of their younger siblings. In such situations, the older orphan becomes the head of household. Some of household heads are as young as 10–12 years of age. In some situations, orphans are living completely outside a family structure, usually in the street or in orphanages.

Poverty, insecurity, and natural disasters aside, HIV/AIDS exacerbates the social conditions that produce and reproduce poverty. The predicament of AIDS orphans is such that broken families mean more children on the streets. For girls, prostitution becomes an option (Olenja, 2001). A WHO/UNICEF report in 1994 concluded that in Kenya, AIDS perpetuates a vicious circle, putting children at many kinds of risks, including the risk of HIV infection itself:

AIDS has become another factor pushing children onto the streets, as parents die and relatives are unable or unwilling to provide care...their level of sexuality is high, bringing the risk of sexually transmitted diseases, including AIDS. (World Health Organization, 1994).

UNICEF's 1999 study on child labour in Kenya surveyed children working on commercial tea and coffee plantations in Kiambu and Nyeri districts in Central province where HIV prevalence is estimated to be above 30 percent in the adult population. In the sample population, more than 10 percent of the 264 children had grandparents as their primary care-givers and a majority lived in single-parent households. Though it was not possible in all cases to link deaths in the family to AIDS, the researchers concluded that AIDS deaths are a key determinant of children's need to work in these districts. (UNICEF-ESARO, 1999).

Girls have had to bear the brunt of the effects of HIV/AIDS more than boys. The rate of HIV infection in girls and young women from 1–19 years old is about six times more than their male counterparts. Besides biological reasons that make girls more vulnerable to HIV infection, it may be concluded that girls in this age group are catching the virus from older men, in many instances as a result of sex in which they engage to survive economically (Johnston, 2001). This was also the case in Kisumu, Kenya where 23 percent of girls age 15–19 were infected compared with 8 percent of boys of the same age (UNAIDS, 1999).

In terms of education, a study on Rusinga Island, Suba district revealed that out of the 72 AIDS orphans, girls were less likely to be in school than boys (Johnston, 1999). Similarly, data collated by UNICEF from 1994 to 1999 shows that there exist systematic differences in enrolment between children with both parents dead and those with both parents alive. In the former case 72 percent of the children age 10–14 were in school, while 93 percent of the latter were in school (World Bank 2000b cited in Egero, Hammarskjold and Munck 2000).

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Appendix

Percentage of pregnant women testing HIV positive at sentinel surveillance sites, by district and by urban (1990–2000) and rural (1994–2000)

District		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Central												
Urban	Thika	3	10	3	28	40		13	19	33	18	21
Urban	Nyeri	3	4	9	3	6		9	7	17		14
P/R	Nyeri								5	4		9
P/R	Muranga								11	7		10
Coast												
Urban	Mombasa	10	17	11	17	11	16	12	17	16		12
P/R	Kwale					17	24			33	23	14
Eastern												
Urban	Kitui	1	5	2	8	20	4	4	6	10	9	14
Urban	Meru	3			2	11	9	16	14	23	30	35
P/R	Embu					2	10		27	12		
Nairobi												
Urban	Nairobi		12	13	17	15	16	16			17	
North Eastern												
Urban	Garissa	5		5	4	15	6	5	8	6	6	
Nyanza												
Urban	Kisii	2	4	0	3	9	4	16	16	15	12	16
Urban	Kisumu	19	19	20	20	30	25	27	33	29	27	35
P/R	Kisumu						21	27		37	26	31
Rift Valley												
Urban	Kajiado						6	7	10	8		
Urban	Kitale	3	6	21	8	11	10	12	13	10	18	17
Urban	Nakuru	10	13	13	23		27	11	25	25	27	11
P/R	Bomet							4	6	6	6	4
P/R	Uasin Gishu					2	13		9	3	3	7
Western												
Urban	Busia	17	10	30	22	23	22	28	29	30	34	22
Urban	Kakamega	5	13	15	9	14	12	10	10	16	12	12
P/R	Vihiga					12	11		16	12	13	25

Source: Kenya. Ministry of Health. AIDS in Kenya: Background, Projections, Impact, Interventions and Policy, Sixth edition, 2001.

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