

# Sexual Behavior and Condom Use in the Context of HIV Prevention in Kenya

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## EXECUTIVE SUMMARY

This report presents a further analysis of data on sexual behavior, condom knowledge, and condom use from the 1998 Kenya Demographic and Health Survey (KDHS). These results are supplemented with data from the Ministry of Health and PSI's social marketing program on the number of condoms distributed annually and with data on condom promotion and availability at health facilities from the 1999 Kenya Service Provision Assessment. Furthermore, in order to assess trends over time, data on knowledge and use of condoms from the 1993 KDHS were also used.

### *Sexual Behavior*

- One in every three men and one in every ten women report high-risk sexual behavior in the past 12 months.
- There are large differences between men and women in the practice of risky sex, particularly for married men and women. While few married women report multiple partnerships or payment for sex in the past year, many married men do so.
- Women aged 15-19 years and who are sexually active are at much higher risk of acquiring HIV than any other age group due to multiple partners and receiving money or gifts in return for sex.
- Younger men, non-married men, and men living in the Coast province have the highest rates of high-risk sexual behavior. For women, those who are younger, non-married, and who live in Nairobi or other urban areas do so.
- A larger percentage of men and women who reported multiple sexual partners or payment for sex had an STD in the past 12 months. In addition, the prevalence of STDs is higher among men who reported a non-marital/non-cohabiting partner at last sex.
- Men and women with multiple partners, who gave or received payment for sex, or who had an STD perceived themselves to be at higher risk of AIDS. However, those who had last sex with a non-marital partner do not perceive themselves to be at higher risk.

### *Condom Knowledge and Use*

- While knowledge of condoms is high, less than one-half of men and women reported that condoms protect against HIV.
- Overall very few women and only about one-in-five men used a condom during their last sexual encounter.
- Condom use is highest among younger women, women with more education, never married women and women living in urban areas, particularly in Nairobi. Condom use is rare among married women, women with no formal education, and women living in rural areas.
- Male condom users are more likely to be younger, have some formal education, and be non-married. Men in rural areas are just as likely to use condoms as those in urban areas.

- Men and women who report multiple sexual partners, payment for sex, or having had an STD were much more likely to use a condom than respondents who did not report these practices.
- Less than one-half of non-married men used a condom with regular and non-regular partners at last sex, and just over one-half used a condom if it was sex for payment.
- Between 1993 and 1998 there were significant increases in knowledge and use of condoms for both men and women.
- Knowledge of where to buy a condom was significantly associated with condom use, particularly for men.

#### *Condom Availability*

- About nine condoms per sexually active person are distributed annually in Kenya. The largest number of condoms-per-person are distributed in Nairobi and Nyanza provinces.
- At the provincial level, there seems to be little relationship between the number of condoms distributed per person and rates of either risky sex or condom use.
- Most health facilities in Kenya have condoms available for family planning and STD clients. However, only about one-half of facilities offering family planning promote dual method use among family planning clients.
- Only about one-third of health facilities provide training to community health workers in condom promotion and safe sex.

#### *Condom Promotion and the Mass Media*

- The radio is the most common source of AIDS information for men and women. Overall, however, men are more likely to report hearing about AIDS from mass media sources while women are more likely to report hearing about AIDS from friends/relatives or other community sources.
- Women who heard of AIDS from health workers have higher knowledge (but not use) of condoms. Health workers have no impact on knowledge and use of condoms among men.
- The role of the health workers in passing correct condom knowledge is relatively small compared to other sources.
- Exposure to the mass media was associated with increased knowledge of condoms for both men and women. The greater the number of media sources to which the respondent was exposed, the greater the level of knowledge of condoms as a way to prevent HIV.
- Exposure to mass media messages about AIDS was associated with increased use of condoms among men.



# CHAPTER 1 INTRODUCTION

## 1.1 Background

### *1.1.1 Epidemiology of HIV in Kenya*

Kenya ranks high among countries affected by the AIDS epidemic and currently it is estimated that there are about 2.0 million Kenyans infected with HIV. This figure includes about 1.9 million adults and 90,000 children (NASCOPI 1999). Although HIV prevalence was very low in Kenya during the early 1980s, it has been steadily increasing since then. The National AIDS and STDs Control Programme (NASCOPI) estimates that HIV prevalence among adults has increased from 4.5% in 1993 to 13.3% in 1999 (NASCOPI 1999).

There is a marked difference in HIV prevalence between urban areas and rural areas. In urban areas, HIV prevalence is estimated to be between 17% and 18% while rural area estimates range from 12% to 13%. Paradoxically, the absolute number of HIV infected persons is actually higher in rural areas than in urban areas because over 80% of the population lives in rural areas. An estimated 470,000 adults are infected in urban areas compared to 1.5 million in rural areas (NASCOPI 1999).

Data from sentinel surveillance at antenatal clinics indicate that HIV prevalence is alarmingly high in many parts of the country. Prevalence rates from 20-35% have been reported in Kisumu, Nakuru, Thika, and Busia districts. HIV prevalence of 10% to 20% has been recorded in Nyeri, Kakamega, and Mombasa districts. Other sites have reported lower rates of infection, perhaps because the epidemic started later in these areas or because behavior patterns are different. However since HIV/AIDS can spread so rapidly and become a major problem in a time period as short as two years, no district can be complacent about AIDS where HIV prevalence is currently low.

### *1.1.2 Sexual Behavior and Risk of HIV Infection*

Sexual transmission is the major mode of transmission of HIV in Kenya and it is often reported that sexual contact accounts for about 80% of HIV infections (Mulindi et. al, 1998). Since most HIV infections are transmitted by heterosexual contacts, people are at a risk of acquiring the infection as soon as they become sexual active. The peak ages of HIV infection in Kenya, and in most other countries in the region, is 25-29 years for women and 30-39 years for men. Women 15-19 and 20-24 years of age are five and three time more likely, respectively, to be infected than men in the same age groups (Mulindi et. al 1998, Johnston 2000, and NASCOPI 1999).

Women are harder hit by the epidemic in Africa than are men. About 55% of all adults living with HIV/AIDS are women, (Delay et al. 2000). The difference in infection between men and women is most pronounced in those under 25 years of age. While the reasons for the extremely high rates in girls are not fully understood, the vulnerability of young girls certainly plays a role.

Women in Kenya generally have little control over sex in their relationships, which leaves them vulnerable to infections acquired by their male counterparts (Mulindi et. al 1998). In such relationships women are clearly at a disadvantage in demanding the use of condoms to protect themselves from the risk of HIV infection. The Government of Kenya rightly observes that socialization of girls in many communities dictates submissiveness, thus creating a situation where girls cannot negotiate or reject sexual advances (GOK 1997). In a study carried out in Nakuru,

Kenya, it was apparent that most women engage in sexual risk taking behavior mainly because of perceived threats to their social and economic survival and a lack of power in sexual decision making. Culturally based gender roles, economic and social inequalities, and age disparities between partners combine to create a situation of unequal power within sexual relationships, which in turn reduce women's ability to negotiate whether intercourse will take place and whether condoms will be used or not (Bauni and Jarabi 2000).

While young men and women increasingly postpone marriage, they do not wait for marriage to become sexually active and the majority of young people begin sexual activity while still in their teens. Nearly 75% of young people have sexual intercourse before their twentieth birthday, with a median age of first sexual encounter of 17 years for women and 16 years for men (Mulindi et. al 1998). Several studies indicate that pre-marital sex is common. Two-thirds of ever-married men and one-half of ever-married women reported having had two or more premarital partners (Mulindi et. al 1998). Thus, there is a significant period of sexual activity before marriage that puts young people at risk of HIV infection.

Even after marriage, the risk of acquiring HIV continues. Although only 2% of currently married women report extramarital sex in the past year, 16% of men do so (NCPD 1999). In matrilineal societies such as Kenya, men are permitted relative sexual freedom both before and after marriage, and male adultery is generally permitted. Even among monogamous men, more than one-half report having had multiple partners (Dodoo and Adomako Ampofo 1998).

The problem of extramarital affairs is exacerbated by employment, economic, and cultural patterns that result in married couples living apart from each other. It is common for men to work in the town or city and for their wives to stay in the rural areas. Such patterns contribute to men, and sometimes women, having sexual relationships with other partners (Mulindi et. al 1998). Women may also enter into a marriage with a partner who is already HIV infected. Since women find themselves with a lower bargaining power in sexual matters within the conjugal unit (Bauni and Jarabi 2000, NASCOP 1999, Dodoo and Adomako Ampofo 1998, and GOK 1997), their risk of infection is increased.

### *1.1.3 Programmatic Response to the AIDS Epidemic*

The main aims of the HIV prevention program in Kenya are to prevent infection with the AIDS virus, to reduce the social impact of HIV infection and to mobilize and unify national and international efforts against AIDS. To provide a framework within which several donors can make contributions, the Ministry of Health in Kenya established the National AIDS committee (NAC) in 1995, the National AIDS and STDs Control Programme (NAS COP) in 1987, and the NGO Consortium (KANCO) in 1990 (Mulindi et. al. 1998). Interventions currently include the following: providing education in the prevention of HIV infection; promoting abstinence and faithfulness; promoting reductions in the number of sexual partners; encouraging delays in the onset of sexual activity among adolescents; promoting the correct and consistent use of condoms; ensuring consistent availability of condoms; strengthening programs in STD treatment and control; encouraging voluntary counseling and testing. (NAS COP 1999, Bauni and Jarabi 2000, and GOK 1997).

There are signs that HIV prevention programs are having an important effect in reducing the risk of infection (NAS COP 1999). Knowledge of AIDS and the key transmission mechanisms are known by practically all Kenyans (NAS COP 1999, Bauni and Jarabi 2000, Mulindi et al 1998, Dodoo and Adomako Ampofo 1998, and GOK 1997). About one-third of men and women know at least two

programmatically significant means to prevent the transmission of HIV; use of condoms, avoiding multiple partners, staying faithful to one partner, and sexual abstinence. However, this high level of knowledge has not been matched by a comparable change in behavior. In a study of male university students, 54% of the students reported ever use of condoms though the use is most probably confined to promiscuous rather than steady relationships where they fear the risk of contracting sexually transmitted diseases (Kigundu et al.). In a recent consumer profile survey in Kenya, 20% of the sexually experienced respondents reported consistent condom use with regular partners while 65% reported consistent condom use with casual partners (PSI 1999). Research conducted among truck drivers and their assistants (both of whom often are sexually active with multiple sex partners) established that, although they used condoms with ladies they picked up on the way, they would still have sex with friends without a condom (Kigundu et al. 1995). In another study, the majority of women in focus groups and almost all of the men rejected the use of condoms within a marriage or a long term relationship where they have not been used before (Bauni and Jarabi 2000).

Recent studies have shown that condom use with casual partners is considerably higher than with regular partners suggesting barriers to condom use are diminishing (Agha 1997). Doodoo and Adomako Ampofo (1998) observe that married men in much of sub Saharan Africa are markedly less likely to use condoms than their unmarried counterparts. It is clear, however, that more and more people are recognizing the risk of unprotected sex and are taking steps to protect themselves and their partners. Hope (1995) thus concludes that the primary lesson from interventions so far is that the spread of the disease is slowed most effectively by programs (such as condom promotion) that change sexual behavior and arrest the spread of other sexually transmitted diseases.

#### *1.1.4 Condom Promotion Activities*

Condom promotion consists of a combination of activities designed to encourage the acceptance and use of condoms to prevent the sexual transmission of HIV and other STDs. The WHO observes that while ensuring that good quality condoms are affordable and available is essential, potential condom users need to be informed, motivated and inspired to adopt condoms and to sustain such use. Condom social marketing programs use commercial marketing strategies and distribution systems to increase the availability of condoms among large target groups by marketing them at affordable prices in accessible outlets.

Condom distribution programs must ensure a constant supply of condoms to all sexually active people and to those most vulnerable to HIV infection either through public or private channels. Condoms can be distributed at low or no cost through clinics, community based distribution (CBD), and commercial channels. Mulindi et al (1998) observes that these three systems for the promotion and distribution of condoms currently co-exist in Kenya. Condoms are made available through the social marketing program by PSI, there is free distribution through existing public sector reproductive health channels. Condoms are also available on the commercial market through private channels. Condom social marketing in Kenya was started in 1993 by Population Services International, which has since then been actively promoting the use of Trust condoms.

## 1.2 Objectives of the Study

Because increasing knowledge and use of condom is one of the primary ways to prevent the further spread of HIV, knowledge about sexual behavior and condom use is particularly important for program planning. Information on current sexual practices can help identify those men and women most at risk for HIV infection based on socio-demographic or other personal characteristics. Detailed information on condom practices and sexual behaviors provides information as to who is using condoms, and who should be using condoms. In addition, information on the promotion and availability of condoms helps to provide an understanding of the reach of various programs. The specific aims of this report the following:

- to describe HIV risk behaviors as they relate to personal and demographic characteristics
- to characterize condom use as it relates to sexual behavior, demographic and personal characteristics
- to describe condom access and availability
- to assess the association between exposure to mass media and condom knowledge and use

## 1.3 Data and Methods

The primary source of data for this study is the 1998 Kenya Demographic and Health Survey (KDHS) (NCPD 1999). The 1998 KDHS is a nationally representative survey of 7,881 women aged 15-49 years and 3,407 men aged 15-54 years. The DHS surveys are designed to obtain information on fertility, family planning knowledge and use, infant and child mortality and maternal and child health. In the 1998 KDHS, detailed information on knowledge and behaviors related to AIDS and other sexually transmitted diseases were collected for the first time in a Kenya DHS. While the quality of the KDHS data is considered to be good, it is likely that certain behaviors, sexual behavior and condom use for example, are underreported due to the sensitive nature of the topic.

Select data from the 1993 KDHS are included in this report for comparative purposes (NCPD 1994). The 1993 KDHS contained few questions on sexual behavior and condom use and comparisons of trends over time for most of the indicators of sexual behavior presented in this report were not possible. We were able, however, to compare knowledge and use of condoms using data from the 1993 and the 1998 KDHS. In addition to the KDHS data, this report also uses data on condom availability in health facilities from the 1999 Kenya Service Provision Assessment (MOH 2000). Data on condom distribution through social marketing and the government sector for 1998-2000 are also included.

Many of the tables in this report present odds ratios and confidence intervals. The odds ratios provide an estimate of the magnitude of the association between the variables being compared while the confidence intervals provide information as to the precision of this estimate. P values were also calculated to identify those associations that are statistically significant. Logistic regression models were also used to assess whether exposure to AIDS information in the mass media was associated with increased levels of knowledge and use of condoms, after adjusting for socio-demographic factors.

## CHAPTER 2      SEXUAL BEHAVIOR

Patterns of sexual behavior among various subgroups in the population were explored using data from the 1998 KDHS. Variables included sexual intercourse with more than one partner, payment for sex, and self-reported sexually transmitted diseases in the past 12 months. A general any risk variable was created to capture the practice of any one of these sexual behaviors among men and women in Kenya. All of these sexual behaviors, including the any risk variable, were explored by population subgroups such as age, marital status, and residence. Data regarding the respondents marital/cohabiting status and their relationship to their sexual partner at last sex are also included. Finally, the associations between high-risk behavior and both marital/cohabiting status and the prevalence of a sexually transmitted disease (STD) in the past 12 months, and perceived risk of AIDS are presented. The analyses in this section are restricted to sexually active respondents defined as women between the ages of 15 and 49 and men between the ages of 15 and 54 who have ever had sex.

### 2.1 Number of Sexual Partners

The spread of HIV depends on having unprotected sex with multiple partners. The percent of women and men who had more than one sexual partner in the past 12 months by socio-demographic characteristics are presented in Tables 1(a) and 1(b). Overall, over one-in-four men (27%) reported having more than one sexual partner in the past 12 months as compared to less than 4% of women. There are marked differences by socio-demographic characteristics among women and men who reported more than one sexual partner.

Among women, reports of having multiple partners varied most significantly by age. Among the youngest women (15-19 years), 8% reported having two or more sexual partners in the past 12 months. (Note that this figure is among 15-19 year olds who have ever had sex). This compares to about 4% of women 20-24 years of age. The percentage declines to 3% or fewer in the older age groups. There are also some differences in multiple partnerships by level of education; women with some primary education are most likely to have reported more than one partner and women with secondary or higher education are least likely to have done so. Differences in multiple partnerships are much more apparent by marital status. While 7% of formerly married and 10% of never married respondents reported having more than one partner, less than 2% of married respondents did so. As expected, multiple partnerships are somewhat more common among women living in urban areas than in rural areas, 5% versus 3% respectively, and among long-term urban dwellers and recent migrants. Differences are also seen by province with the higher rates of multiple partnerships found in Eastern, Nairobi, and Nyanza provinces.

Multiple partnerships are much more common among men, though similar patterns are seen with respect to socio-demographic characteristics. The percent of men who reported more than one partner in the past 12 months varies significantly by age with over 40% of men in the 15-19 and 20-24 age groups reporting multiple partnerships. This practice declines significantly with age; 11% of men 40-49 years reported this practice. Having more than one sexual partner is also more common among men with some primary education (31%), followed by men with secondary or higher level of education (23%). This compares to 15% of men with no formal education. The greatest differences are seen by marital status. Compared to married men, never married and formerly married men are more than twice as likely to have reported having more than one partner. In fact, 39% of formerly married men and 43% of never married men reported more than one sexual partner in the last 12 months. Unlike women, there are no differences by urban/rural residence. However, recent migrants (primarily rural residents moving to urban areas) did report slightly higher multiple

partnerships than either long-term urban or rural residents. There are also some differentials by region. The percentage of men reporting more than one sexual partner is highest in the Coast and Nyanza regions, and lowest in Western, Rift Valley, and Central regions.

## **2.2 Payment for Sexual Relations**

Receiving or giving gifts or money for sex is also considered a sexual practice that increases the risk of HIV infection. Overall, 7% of women as compared to 13% of men reported either receiving or providing payment in exchange for sex in the 12 months prior to the survey (Tables 1(a) and 1(b)). This practice varies by socio-demographic characteristics, particularly among women.

A full 15% of women in the youngest age group (15-19 years) reported having received payment for sex. This is twice as high a percentage as in the 20-24 year olds. Frequency of this behavior declines significantly with age with just over 5% of women in their late twenties and thirties reporting that they had received payment for sex. Payment for sex is much more common among never married women (20%) and formerly married women (13%), while few married women reported this behavior (3%). Payment for sex is also an urban phenomenon with 13% of women in urban areas having reported receiving money for sex as compared to 5% in rural areas. This practice is more common among women living in Nairobi followed by the Coast province. There are no differences in the percentage of women receiving payment for sex by educational attainment.

Patterns of payment for sex are quite different among men. While the youngest women are much more likely than other age groups to report this behavior, the percent of men who reported payment for sex was similar in the 15-19, 20-24, and 25-29 age groups (between 17% and 18%) with a decline seen only among men over 30 years. As with never married women, never married men are most likely to report payment for sex (21%). However, payment for sex is also commonly practiced by married men with 18% having reported this behavior. Payment for sex is more likely to occur among men living in urban versus rural areas. It is also notable that 32% of men in the Coast province reported either giving or receiving payment for sex, a much higher percentage than in any other province.

## **2.3 Self-Reported Sexually Transmitted Diseases**

It is likely that many high-risk sexual behaviors, such as multiple partnerships, were underreported, particularly among women. In addition, respondents may not practice high-risk behavior but may be put at risk by the sexual behavior of their partners. As a proxy for practicing, or being exposed to, a high-risk behavior, we looked at the frequency of self-reported STD. This measure has its own weakness that can not be overlooked. Women in particular may have an infection that is asymptomatic and therefore goes unnoticed. Similarly, respondents may experience STD-like symptoms but not recognize them as such, and therefore not report having had an STD. Conversely (though less likely) respondents may experience STD like symptoms that are not actually caused by an STD. Finally, as with any other socially undesirable behavior or event, there is also the likelihood of underreporting.

Only about 2% of women and 5% of men reported having had an STD in the past 12 months (Tables 1(a) and 1(b)). For women, there is little variation in prevalence of STDs by age or educational attainment. Differences, however, are apparent by marital status. Among formerly married women, over 3% reported an STD in the past 12 months as compared to less than 2% of currently married and never married women. A higher prevalence of STD was also reported among urban women and women living in Nairobi followed by the Eastern provinces.

Table 1(a). Percent of sexually active women who had more than one sexual partner, had sex for payment, had a sexually transmitted disease in the past 12 months, or had any of these risk factors by socio-demographic characteristics (1998 KDHS).

	>1 Sexual Partner	Payment for Sex	Had an STD	Any Risk	n
<b>Age</b>					
15-19	8.0*	15.0*	1.7	20.5*	808
20-24	3.8	8.5	2.3	12.6	1376
25-29	3.3	5.5	2.3	8.8	1347
30-39	2.9	5.3	1.9	8.3	1975
40-49	2.0	3.6	1.6	5.9	1134
<b>Education</b>					
None	3.2*	5.6	1.6	8.1*	887
Primary	4.3	7.5	2.1	11.5	3863
Secondary or Higher	2.4	6.3	3.1	9.2	1889
<b>Marital Status</b>					
Married	1.6*	3.0*	1.8*	5.6*	4834
Formerly married	6.8	13.3	3.3	19.0	644
Never married	10.4	19.8	1.7	25.5	1125
<b>Residence</b>					
Urban	5.1*	12.7*	2.8*	16.3*	1565
Rural	3.2	5.1	1.7	8.6	5074
<b>Migration</b>					
Long-term urban	4.2*	13.0*	2.4	16.0*	895
Long-term rural	2.8	5.0	1.6	8.0	3827
Recent migrant	5.0	7.9	2.4	12.6	1871
<b>Province</b>					
Nairobi	4.3*	15.9*	3.1*	19.0*	649
Central	1.0	2.5	0.7	4.0	718
Coast	3.6	11.9	1.6	15.3	504
Eastern	6.2	7.7	2.8	12.9	1132
Nyanza	4.2	5.1	2.0	9.6	1421
Rift Valley	2.4	4.0	1.4	6.3	1462
Western	3.1	7.5	2.3	11.4	744
Total %	3.6	6.9	2.0	10.4	100
Total N	241	457	130	689	6630

- p<.05 for difference in sexual behavior by background characteristic

Table 1(b). Percent of sexually active men who had more than one sexual partner, had sex for payment, had a sexually transmitted disease in the past 12 months, or had any of these risk factors by socio-demographic characteristics (1998 KDHS).

	>1 Sexual Partner	Payment for Sex	Had an STD	Any Risk	n
<b>Age</b>					
15-19	43.0*	16.9*	3.2*	49.5*	440
20-24	42.0	18.0	8.5	49.8	536
25-29	29.3	16.6	6.1	35.8	458
30-39	20.9	12.4	5.1	28.0	789
40-49	11.1	6.8	2.7	16.4	566
<b>Education</b>					
None	15.4*	14.6*	2.5*	24.4*	123
Primary	30.8	15.3	6.4	37.4	1568
Secondary or Higher	22.6	10.9	3.2	28.6	1280
<b>Marital Status</b>					
Married	16.4*	18.4*	3.9*	22.5*	1791
Formerly married	38.6	9.8	7.9	49.5	127
Never married	42.5	21.4	6.1	47.2	1053
<b>Residence</b>					
Urban	25.6	16.5*	4.0	33.9	884
Rural	27.0	12.0	5.2	32.8	2127
<b>Migration</b>					
Long-term urban	24.5*	17.5*	3.5	32.2*	600
Long-term rural	25.7	11.4	5.0	31.5	1801
Recent migrant	32.2	15.1	5.9	39.5	566
<b>Province</b>					
Nairobi	26.6*	14.6*	3.2*	33.6*	406
Central	23.1	9.5	8.4	28.6	290
Coast	32.3	31.9	5.6	46.1	217
Eastern	28.0	18.1	5.2	33.9	540
Nyanza	31.9	10.5	3.4	35.9	565
Rift Valley	23.6	10.2	3.5	29.3	659
Western	20.1	5.1	9.2	29.5	274
Total %	26.6	13.3	4.8	28.9	100
Total N	791	395	143	985	2971

\* p<.05 for difference in sexual behavior by background characteristic

Unlike women, the rates of self-reported STDs do differ by age among men. The highest prevalence, almost 9%, was found among men 20-24 years of age. Prevalence declines in the older age groups to less than 3% of men 40-49 years of age. Among very young men (15-19 years), about 3% reported having had an STD in the past 12 months. Prevalence of an STD is higher among men with a primary education (6%), than among those with no formal education or a secondary or higher level (about 3% for both groups). Formerly and never married men are more likely to have reported an STD in the past year than are married men. Finally, while men living in the Western and Central region are the most likely to have reported having had an STD, there is no difference by urban/rural residence.

## **2.4 Any Risk**

A variable was computed to assess the extent to which the different groups engaged in at least one risky behavior, that is either they had more than one partner, paid for sex or had a self-reported STD in the last 12 months. Overall, one-third of sexually active adult males reported at least one risky sexual behavior in the last year as compared to about one-in-ten sexually active women (Tables 1(a) and 1(b)).

It appears that sexually active women aged 15 to 19 years engage in risky sexual behavior more than any other age group. One-in-five of these women are classified as at risk. A related finding is that over 25% of never married women are also practicing risky sex (most women aged 15-19 years are not married). With respect to residence, women living in urban areas, long-term urban residents and recent migrants to urban areas, are the most likely to have engaged in risky sex. Nairobi, followed by Coast and Eastern are the provinces in which the greatest percentages of women are classified as having any risk.

Almost one-half of men 15-19 and 20-24 years of age engaged in at least one risky sexual behavior in the past 12 months. While the percentage declines with age, it remains high with 36% of men in the 30-39 year age group and 28% of men aged 40-49 years having reported at least one high-risk practice. Most of this risk is related to having multiple sexual partners. Other characteristics are also related to risk. Men with primary level education are more likely to have had a risky sexual behavior (37%) than men with no education or with a secondary or higher level of education (24% and 29%, respectively). Almost one-half of the formerly married and never married men reported a risky sexual behavior while 23% of currently married men did so. Rates of risky sexual behavior are highest in the Coast province where almost one-half (46%) of men engage in risky behavior, followed by 36% in Nyanza and 34% in Nairobi and the Eastern Province.

## **2.5 Partner at Last Sex**

In addition to the sexual behaviors listed in Tables 1(a) and 1(b), partner at last sex was also considered. Because partners who do not live together are most likely to have other partners, sex with a non-marital/non-cohabiting partner is considered to carry a higher risk of HIV transmission than sex with a marital/cohabiting partner. However, partner at last sex is closely linked to marital status as respondents who are not currently married could only have had sex with a non-marital/non-cohabiting partner at last sex. Likewise, most of the respondents in the youngest age groups would also automatically fall into this category of risk as most are not yet married. Therefore, sex with a non-marital/non-cohabiting partner was not included as a risk factor in Tables 1(a) and 1(b) or in the calculation of the any risk category. Partner at last sex is presented in Table 2.



Among married women, almost all had sex with their spouse or cohabiting partner at last sex. Similarly, all but 5% of married men did so. Among non-married women, most (72%) report having sex with a regular partner while 18% report having sex with an acquaintance at last sex. A few (10%) report having sex with someone else though it is unclear to whom this refers. For men, just over one-half report having sex with a regular partner while 36% report having sex with an acquaintance. A few (2%) report having a partner that they paid for sex. Like women, 10% of men report that their partner at last sex was someone else .

Table 2. Partner type at last sex among married/cohabiting and non-married/non-cohabiting women and men [1998 KDHS].

	Women	Men
<b>Married/Cohabiting</b>		
Spouse/someone living with	99.5	94.8
Regular partner	0.2	1.1
Acquaintance	0.2	1.9
Someone paid for sex	0.0	0.4
Someone else	0.1	1.8
<b>Non-married/non-cohabiting</b>		
Regular partner	72.3	52.0
Acquaintance	18.4	35.6
Someone paid for sex	0	2.1
Someone else	9.3	10.3

## 2.6 Association between High Risk Sexual Behaviors and Prevalence of STDs

Certain high-risk behaviors were examined by whether the respondent reported having had an STD in the past 12 months. Table 3(a) shows the percent of women who reported having an STD by high-risk sexual behavior while Table 3(b) provides these data for men.

Women and men who reported having more than one sexual partner in the past year are three times as likely to have had an STD than those who had just one partner. Women who have had sexual relations for payment in the past 12 months are three times as likely to have reported an STD in the past year than women who have not. Among men, those who had sex for payment are five times as likely to have had an STD as those who had not paid for sex in the past year. In addition to the number of sexual partners and payment for sex in the past 12 months, the type of partner at last sex was assessed. For women, there are no significant differences in the prevalence of STDs by type of partner at last sex. For men, there are differences by type of partner at last sex suggesting that partner at last sex may indicate prior higher risk partners. For men, those who had paid sex at their last sexual encounter are four times as likely to have had an STD as those who had sex with their wives. Men who had sex with a regular partner at last sex were twice as likely to have an STD as men who had sex with their wives.

Table 3(a). Percent of sexually active women who reported having an STD in the past 12 months by high-risk sexual behavior (1998 KDHS).

	%	n	OR	95% CI
> 1 sexual partner				
Yes	5.4	239	3.1*	(1.7-5.5)
No	1.8	6393	referent	
Payment for sex				
Yes	5.6	444	2.9*	(1.8-4.6)
No	2.7	5994	referent	
Partner last sex				
Spouse/living with	1.9	5062	referent	
Regular Partner	1.6	1099	0.9	(0.5-1.4)
Acquaintance	2.4	286	1.3	(0.6-2.9)
Someone paid for sex	0.0	0		
Someone else	4.1	145	2.1	(0.8-4.9)

OR: odds ratio; CI: confidence interval; \* p<.05

Table 3(b). Percent of sexually active men who reported having an STD in the past 12 months by high-risk sexual behavior (1998 KDHS).

	%	n	OR	95%CI
> 1 sexual partner past 12 months				
Yes	9.0	779	3.1*	(2.2-4.4)
No	3.2	2143	referent	
Payment for sex				
Yes	14.7	394	5.1*	(3.6-7.2)
No	3.3	2561	referent	
Partner last sex				
Spouse/living with	3.4	1701	referent	
Regular Partner	8.0	619	2.4*	(1.6-3.6)
Acquaintance	5.6	443	1.7*	(1.1-2.8)
Someone paid for sex	12.9	31	4.0*	(1.3-12.1)
Someone else	4.7	150	1.4	(0.6-3.1)

OR: odds ratio; CI: confidence interval; \* p<.05

## 2.7 Association between Sexual Behavior and Perceived Risk

Data are also available from the 1998 KDHS regarding the respondents' perceived risk of AIDS. The association between self-perceived risk of acquiring AIDS and risky sexual behavior are presented in Tables 4(a) and 4(b). Men and women who reported either more than one sex partner, payment for sex or having had an STD in the past year are more likely to perceive themselves as being at moderate or great risk of AIDS compared to those who did not engage in these behaviors. The highest perceived risk was among those who had an STD in the past 12 months. Despite these positive findings between high risk behavior and higher perceived risk, it should be noted that about one-half of those with more than one sexual partner or who had sex for payment perceived themselves to be at no or only small risk of AIDS. Also notable is that self-perceived risk is higher among women, yet men are much more likely to practice high-risk sexual behavior. There is no difference in perceived risk by whether the last sexual partner was a cohabiting or non-cohabiting partner despite the fact that sex with a non-cohabiting partner is thought to be of higher risk.

Table 4(a). Perceived risk of AIDS and sexual behavior among women\* [1998 KDHS].

	No Risk	Small	Moderate/Great	n	p-value
> 1 sexual partner					
Yes	20.7	24.9	54.4	237	p<.001
No	28.6	34.8	36.7	6334	
Payment for sex					
Yes	24.3	30.3	45.4	452	p<.001
No	28.6	34.7	36.7	6433	
Self-reported STD					
Yes	13.8	24.6	61.5	130	p<.001
No	28.6	34.5	36.8	6178	
Sex with a non-cohabiting partner					
Yes	29.6	35.1	35.3	1527	NS
No	27.9	34.1	38.0	5004	
Total (n)	1858	2259	2451	6570	
Total %	28.3	34.4	37.7	100	

\*among women who have ever had sex and who have heard of AIDS. NS: not significant.

Table 4(b). Perceived risk of AIDS and sexual behavior among men\* [1998 KDHS].

	No Risk	Small	Moderate/Great	n	p-value
> 1 sexual partner					
Yes	20.5	45.4	34.1	792	p< .001
No	28.6	50.2	21.2	2168	
Payment for sex					
Yes	25.3	40.5	34.2	395	p< .001
No	26.6	50.2	23.3	2559	
Self-reported STD					
Yes	18.9	38.5	42.7	143	p< .001
No	26.7	49.4	23.8	2774	
Sex with non-cohabiting partner					
Yes	26.4	46.8	26.8	1095	NS
No	27.0	49.5	23.6	1697	
Total (n)	782	1446	741	2959	
Total %	26.4	48.9	24.7	100	

\*among men who have ever had sex and who have heard of AIDS. NS: not significant.

## CHAPTER 3 CONDOM USE

Condom promotion is one of the primary programmatic responses to combat the spread of HIV in Kenya. The 1998 KDHS asked respondents questions about their knowledge and attitudes towards condoms as well as their use of condoms with various sexual partners. In this chapter, knowledge of condoms and condom use are explored by socio-demographic characteristics. Condom use is then compared to sexual behavior, perceived risk of AIDS, and type of family planning methods used. Finally, the trends in condom knowledge and use from 1993 to 1998 are explored.

### 3.1 Socio-demographic Characteristics

Tables 5(a) and 5(b) describe condom use at last sex among sexually active men and women of reproductive age by socio-demographic characteristics. Sexually active men and women are defined as men and women who have ever had sex.

Table 5(a). Percent of sexually active women who used a condom at last sex by socio-demographic characteristics [1998 KDHS].

	Percent	OR	95% CI	n
Age (years)				
15-19	9.9	4.2 *	(2.7-6.5)	806
20-24	6.4	2.6*	(1.7-4.0)	1375
25-29	6.0	2.4*	(1.6-3.7)	1347
30-39	4.6	1.8*	(1.2-2.8)	1975
40-49	2.6	referent		1134
Education				
None	2.0	referent		973
Primary	4.8	2.4*	(1.5-3.9)	3870
Secondary or higher	8.6	4.5*	(2.7-7.3)	1735
Marital Status				
Married	3.0	referent		4823
Formerly married	7.9	2.8*	(2.0-3.8)	657
Never married	14.9	5.6*	(4.5-7.1)	1127
Residence				
Urban	9.9	2.5*	(1.4-3.3)	1559
Rural	4.2	referent		5046
Migration				
Long-term urban	8.6	referent		755
Long-term rural	3.8	0.4*	(0.3-0.6)	4058
Recent migrant	7.7	0.9	(0.7-1.2)	1755
Province				
Nairobi	12.2	referent		647
Central	4.6	0.3*	(0.2-0.5)	712
Coast	3.8	0.3*	(0.2-0.5)	501
Eastern	5.7	0.4*	(0.3-0.6)	1130
Nyanza	3.6	0.3*	(0.2-0.4)	1416
Rift Valley	6.0	0.5*	(0.3-0.6)	1459
Western	4.1	0.3*	(0.2-0.5)	740
Total (n)	366			6605
Total (%)	5.5			100

OR: odds ratio; CI: confidence interval

\*p <.05

Overall, less than 6% of women used a condom at last sex. Condom use by women varies significantly by the socio-demographic characteristics listed in Table 5(a). Condom use at last sex was significantly higher among younger than among older women. While almost 10% of women aged 15 to 19 used a condom at last sex, less than 3% of women aged 40 to 49 did so. Condom use increases with educational attainment. Women with a secondary school education or higher are four and a half times as likely as women with no formal education to have used a condom at last sex. While only 3% of married women used a condom at last sex, almost 15% of never married women did so. As expected, significant differences among women are seen by residence. Women living in an urban area are twice as likely to have used a condom at last sex compared to women from rural areas. About 10% of urban women used a condom at last sex as compared to 4% of rural women. By far, women from Nairobi were more likely than women from any other province to have used a condom. Long-term urban residents and recent migrants are also more likely to use a condom than long-term rural residents. Condom non-users are likely to be older women (30-49 years), women with no formal education, married women, and women living in rural areas, especially those who have been living there long-term. Women living outside of Nairobi are less likely to be condom users and this low level of use does not vary much by province.

Table 5(b). Percent of sexually active men who used a condom at last sex by socio-demographic characteristics [1998 KDHS].

	Percent	OR	95% CI	n
<b>Age (years)</b>				
15-19	35.3	9.6*	(6.3-14.5)	439
20-24	39.5	11.4*	(7.6-17.2)	527
25-29	25.1	5.9*	(3.9-9.0)	454
30-39	11.8	2.3*	(1.5-3.6)	786
40-49	5.4	referent		559
<b>Education</b>				
None	10.7	referent		122
Primary	18.4	1.8	(1.0-3.3)	1553
Secondary or higher	24.9	2.7*	(1.5-4.9)	1272
<b>Marital Status</b>				
Married	9.1	referent		1784
Formerly married	22.8	3.0*	(1.9-4.7)	114
Never married	40.7	6.8*	(5.6-8.4)	1050
<b>Residence</b>				
Urban	22.8	1.2	(1.0-1.4)	838
Rural	20.1	referent		2110
<b>Migration</b>				
Long-term urban	22.3	referent		597
Long-term rural	19.6	0.9	(0.7-1.1)	1796
recent migrant	23.7	1.1	(0.8-1.4)	557
<b>Province</b>				
Nairobi	22.9	referent		402
Central	24.9	1.1	(0.8-1.6)	285
Coast	23.4	1.0	(0.7-1.5)	214
Eastern	16.4	0.7*	(0.5-0.9)	538
Nyanza	18.3	0.8	(0.6-1.0)	562
Rift Valley	22.5	1.0	(0.7-1.3)	672
Western	21.9	0.9	(0.6-1.4)	274
Total (n)	617			2949
Total (%)	20.9			100

OR: odds ratio; CI: confidence interval

\* $p < .05$

Men are much more likely to have used a condom at last sex than are women. In fact, almost 21% of men used a condom at their last sexual encounter as compared to less than 6% of women. As with women, there are significant differences in condom use among men by several socio-demographic characteristics. These are presented in Table 5(b). Condom use at last sex was highest among men aged 20-24 years of age (40%), followed by the 15-19 year age group (35%). This is in contrast to women who are more likely to have used a condom if they were in the 15-19 year age group. As with women, men's use of condoms also declines significantly among those over 30 years of age; about 12% of men in the 30-39 age group and less than 6% of men aged 40-49 used a condom at last sex. Condom use at last sex among men also increases with educational attainment. Men with a secondary or higher level of education are over twice as likely to have used a condom at last sex than were men with no formal education (25% versus 11%). Differences in condom use by educational status, while significant, are not as great as those seen for women. With respect to marital status, condom use at last sex most frequently occurred among unmarried men (41%) followed by those who were formerly married (23%). Only about 9% of married men used a condom. Unlike women, among whom significant differences in condom use are seen by residence, no differences are seen for men by urban-rural status, by province, or by whether the man was a long-term rural or urban dweller or a recent migrant. Non-users of condoms are likely to be older men (40-49 years), men with a primary education or less, and married men.

### **3.2 Sexual Behavior, HIV Testing Status and Perceived Risk**

In addition to socio-demographic characteristics, we also looked at condom use at last sex by sexual behavior, HIV testing status, and perceived risk. Table 6(a) presents these data for women and Table 6(b) for men. Condom use at last sex varies by partner type among married/cohabiting, and unmarried/non-cohabiting women. Among unmarried/non-cohabiting women, condom use at last sex with a regular partner and with acquaintances was similar about 15%. Condom use was lower (9%) among non-cohabiting women who had sex with someone else, though it is not clear to which partner type this refers. Among married and cohabiting women, few had a partner other than their spouse at last sex. Condom use at last sex with their spouse or cohabiting partner is less than 3%. Condom use does not vary among married women by whether their marriage is polygamous or whether they are the only wife.

Condom use is higher, however, among women who practice higher risk sexual behaviors. For example, over 18% of women with more than one sexual partner in the past 12 months used a condom at last sex while only 5% of those with only one partner did so. Note, however, that few women reported having more than one sexual partner. Condom use at last sex was over three times as high among women who received money or favors for sex and twice as high among those who reported having an STD in the past 12 months. Women who used a condom at last sex are almost twice as likely to have ever been tested for HIV. Self-perceived risk of AIDS, however is not associated with condom use. Women who perceive themselves to be at great risk are not more likely to use a condom than women who said they were not at risk.

Among men who are not married and not in a cohabiting relationship, there is no difference in condom use by whether their partner at last sex was a regular partner or an acquaintance (about 40%). Condom use is somewhat higher with a partner that they paid for sex (54%), though few men report this behavior. As with women, condom use was lowest when the partner was someone else. Among married men or men in a cohabiting relationship, there are differences in condom use by partner type. Only 7% used a condom with their wife or cohabiting partner at last sex. In contrast, over 38% used a condom with their regular partner, and 31% with an acquaintance. Over 85% of married men who paid for sex used a condom. Note, however, that only seven men report this

behavior. Condom use is similar among men in polygamous marriages and among those with only one wife. As with women, men practicing higher risk sexual behavior are more likely to use condoms. Men with more than one sexual partner are about three times as likely to have used a condom at last sex as those with only one partner. Men who had paid or given favors for sex and those who had an STD in the past 12 months are also more likely to have used a condom at last sex. Condom use is significantly higher among men ever tested for HIV. Like women, however, there are no differences in condom use by self-perceived risk of AIDS.

Table 6(a). Percent of sexually active women who used a condom at last sex by sexual behavior, HIV testing status, and perceived risk. [1998 KDHS].

	Percent	OR	95% CI	n
Partner at last sex among non-cohabiting respondents				
Regular partner	14.6	referent		1087
Acquaintance	14.8	1.0	(0.7-1.5)	277
Someone paid for sex	0.0	-		0.0
Someone else	8.7	0.5*	(0.3-1.0)	138
Partner at last sex among cohabiting respondents				
Spouse/cohabiting partner	2.9	†		4796
Regular partner	0.0			11
Acquaintance	0.0			8
Someone paid for sex	0.0			7
Someone else	57.1			7
Marriage type among married respondents				
Polygamous	3.4	1.2	(0.7-1.8)	774
No other wives	2.9	referent		4036
>1 sexual partner				
Yes	18.4	4.2*	(3.0-6.0)	239
No	5.0	referent		6366
Payment for sex				
Yes	13.5	3.0*	(2.3-4.1)	452
No	4.9	referent		6147
Reported STD in previous 12 months				
Yes	10.1	1.9*	(1.1-3.4)	129
No	5.4	referent		6472
Ever tested for HIV				
Yes	8.9	1.9*	(1.5-2.4)	1073
No	4.9	referent		5460
Perceived Risk of AIDS				
None	6.2	referent		1850
Small	5.4	0.9	(0.7-1.1)	2247
Moderate	4.8	0.8	(0.6-1.0)	1758
Great	6.6	1.1	(0.7-1.5)	682
Total n	366			
Total %	5.6%			

OR: odds ratio; CI: confidence interval,

\* p<.05, † Odd Ratios could not be calculated for cohabiting respondents due to small numbers.

Table 6(b). Percent of sexually active men who used a condom at last sex by sexual behavior, HIV testing status, and perceived risk. [1998 KDHS].

	Percent	OR	95% CI	n
<b>Partner at last sex among non-cohabiting respondents</b>				
Regular partner	40.9	referent		597
Acquaintance	39.9	1.0	(0.7-1.2)	409
Someone paid for sex	54.2	1.8	(0.8-4.1)	24
Someone else	27.6	0.6*	(0.4-0.9)	116
<b>Partner at last sex among cohabiting respondents</b>				
Spouse/someone living with	7.0	†		1689
Regular partner	38.1			21
Acquaintance	31.4			35
Someone paid for sex	85.7			7
Someone else	59.4			32
<b>Marriage type among married respondents</b>				
Polygamous	6.9	0.7	(0.4-1.3)	174
No other wives	9.4	referent		1609
<b>&gt;1 sexual partner</b>				
Yes	36.3	3.2*	(2.6-3.8)	787
No	15.2	referent		2160
<b>Payment for sex</b>				
Yes	29.1	1.7*	(1.3-2.1)	392
No	19.6	referent		2547
<b>Reported STD in previous 12 months</b>				
Yes	31.0	1.8*	(1.2-2.5)	142
No	20.4	referent		2796
<b>Ever tested for HIV</b>				
Yes	27.8	1.6*	(1.3-2.0)	553
No	19.3	referent		2386
<b>Perceived Risk of AIDS</b>				
None	20.8	referent		780
Small	20.7	0.9	(0.8-1.2)	1433
Moderate	19.8	0.9	(0.7-1.2)	572
Great	28.3	1.5	(1.0-2.3)	152
Total n	614			2937
Total %	20.9%			100

OR: odds ratio; CI: confidence interval

\* p<.05, † Odd Ratios could not be calculated for cohabiting respondents due to small numbers.

### 3.3 Knowledge and Attitudes toward Condoms

The use of condoms at last sex was also examined by respondents' knowledge and attitudes towards condoms as shown here in Tables 7(a) and 7(b). Knowledge and use of condoms for HIV prevention is associated with condom use at last sex. Women who know that condoms prevent HIV are over twice as likely to have used a condom at last sex. They are also over 29 times as likely to have ever used condoms to prevent HIV. While few women (3%) reported that they have begun to use condoms to avoid AIDS, almost one-half of those who have begun using condoms to avoid AIDS used one at last sex. Similar findings are seen for men. Over 42% of men who had ever used a condom for HIV/STD prevention used a condom at last sex as compared to 4% among men who had never used a condom for HIV/STD prevention. Condom use is also much more frequent among men who reported that they have started to use condoms to avoid AIDS (51% versus 12%).



Table 7(a). Percent of women who used a condom at last sex by knowledge and attitudes towards condoms (1998 KDHS).

	Used a condom at last sex			
	%	n	OR	95% CI
Knows that condoms can prevent HIV				
Yes	8.5	2609	2.5*	(2.0-3.1)
No	3.6	3932	referent	
Ever used a condom to prevent HIV/STD				
Yes	33.5	791	29.1*	(22.8-37.2)
No	1.7	5813	referent	
Began using condoms to avoid AIDS				
Yes	46.1	193	18.9*	(13.9-25.7)
No	4.3	6349	referent	

OR: odds ratio; CI: confidence interval

\* p&lt;.05

Table 7(b). Percent of men who used a condom at last sex by knowledge and attitudes towards condoms (1998 KDHS).

	Used a condom at last sex			
	%	n	OR	95% CI
Knows that condoms can prevent HIV				
Yes	29.3	1501	3.0*	(2.5-3.6)
No	12.2	1440	referent	
Ever used a condom to prevent HIV/STD				
Yes	42.3	1311	19.2*	(14.6-25.6)
No	3.7	1636	referent	
Began using condoms to avoid AIDS				
Yes	51.3	674	7.8*	(6.4-9.5)
No	11.9	2265	referent	

OR: odds ratio; CI: confidence interval

\* p&lt;.05

### 3.4 Condom Use among Family Planning Users

While the DHS data do not provide direct information on dual method use, that is the use of a condom in combination with a non-barrier family planning method, they do provide information on the use of condoms by family planning users. As seen in Table 8, condom use at last sex was not common among respondents who reported currently using a modern family planning method other than condoms. Among women currently using a non-barrier modern method, less than 4% reported using a condom at last sex. Among women using traditional methods a slightly larger percentage (6%) reported using a condom at last sex while 4% of non-users reported doing so. On the other hand, among women who reported using a condom for family planning, 88% reported that they used a condom at last sex. This provides some evidence for the consistent, or at least regular, use of condoms among women who report that they are currently using condoms for family planning.

Findings on condom use at last sex by current family planning use are similar for men. Less than 8% of men who reported that they or their partner were using a modern family planning method other than condoms and 9% of men who reported using a traditional method used a condom at last sex. Among men not using family planning, 11% used a condom at last sex. When compared with women, fewer men (72%) who report using condoms in the context of family planning report using a condom at last sex. In other words, while these men reported that they were using condoms for family planning, more than one-in-four did not use a condom at last sex.

It should be noted from these data that it is not known if these methods were used at the same time or even with the same partner. For example, a man may report using a non-barrier modern method with his primary partner but report using a condom at last sex with another partner.

Table 8. Percent of men and women who used a condom at last sex by current family planning status (1998 KDHS).

	Women		Men	
	%	n	%	n
Currently using family planning				
modern method <sup>†</sup>	3.6	1733	7.6	606
condoms	88.2	119	71.9	533
traditional method	6.3	441	8.7	561
Not using family planning	3.9	4264	10.9	1202
Total	5.5	6606	20.9	2949

<sup>†</sup> excluding condoms

### 3.5 Trends in Knowledge and Use of Condoms

The 1993 KDHS collected limited information on sexual behavior and condom knowledge and use. None of the sexual behavior variables presented in Chapter 2 were available in 1993. Comparisons between 1993 and 1998 focus on condom knowledge and use and are presented in Table 9. From 1993 to 1998, there were small increases in knowledge of condoms among both men and women. However, for both groups, knowledge of condoms was already high in 1993. Between 1993 and 1998, there were great increases in knowledge that condoms protect against AIDS among both men and women. Only 16% of women in 1993 knew that condoms provide protection against AIDS as compared to 38% in 1998. The numbers for men were 31% and 49%, respectively. In addition to increases in knowledge that condoms protect against AIDS, increase in use of condoms was also seen between 1993 and 1998. Ever use among women increased from about 7% to about 9% and among men from 34% to 40%. Current use of condoms also increased for women and men though the percent of women currently using condoms remains extremely low at one and a half percent. Almost 16% of men report current use of condoms.

Table 9. Changes in knowledge and use of condoms\* for women and men, 1993-1998. (1993, 1998 KDHS)

	Women		Men	
	1993	1998	1993	1998
Know of condoms	83.4%	91.5%	94.2%	96.9%
Knows condoms protect from AIDS	16.4%	37.5%	30.7%	49.0%
Ever used condoms	6.8%	9.4%	33.8%	40.4%
Currently using condoms	0.9%	1.5%	11.8%	15.9%

\* knowledge and use of condoms are taken from questions that ask about condoms in the context of family planning.

Note: p<.001 for all comparisons of indicators between 1993 and 1998

## CHAPTER 4      CONDOM DISTRIBUTION AND AVAILABILITY

Condom distribution programs make condoms available to sexually active men and women and to those most vulnerable to HIV infection. Condoms are available for free or at a reduced price through health facilities, community-based distribution, and retail outlets, and at market price through commercial channels. This chapter aims to provide data on the number of condoms distributed in Kenya, whether condoms are distributed where the need is greatest, and whether condom use is higher in areas where more condoms are available. In addition, we provide information on the availability and promotion of condoms at health facilities.

Condom distribution data for both socially marketed condoms and government condoms were obtained for 1998 through 2000. Data on commercial sales of condoms are not readily available; however, the volume of commercial sales is small compared to government and social marketing distribution. Therefore, their impact on the total number of condoms distributed by province and by year should not be great. In addition to the condom distribution data presented, data from the 1998 Kenya Service Provision Assessment (KSPA) were used to obtain information about condom availability at a representative sample of health facilities in Kenya.

### 4.1 Condom Distribution

Table 10 presents data on the number of condoms distributed to retail outlets, community outlets, and health facilities from 1998 to 2000 through the social marketing and government programs. The number of condoms distributed by the social marketing program steadily increased from 10.3 million in 1998 to 13.2 million in 2000. There was a decline in the actual number of condoms distributed by the Ministry of Health from 84.6 million in 1998 to 66.4 million in 1999. Data from the Ministry of Health for 2000 are incomplete, but may likely demonstrate a decline in 2000 as well. In four out of the six provinces surveyed, the number of condoms distributed by the government declined in 2000. This decline is larger than the growth of social marketing programs; therefore it is likely that when complete data become available, they will evidence a decline in the total number of condoms distributed from both sources between 1998 and 2000. With respect to the total numbers of condoms distributed, in 1999, the Ministry of Health distributed over five times as many condoms as the social marketing program.

Not only are the total numbers of condoms showing a declining trend, but the distribution of condoms among provinces has also shifted. In 1998, the Rift Valley and Nyanza provinces each received approximately 23 million condoms. This was almost one and a half times the number of condoms distributed in Nairobi (16 million). By 2000, condom distribution to Nairobi slightly increased (to 19 million) whereas the number of condoms distributed to several other provinces declined significantly. The Rift Valley and Nyanza provinces received between 15 and 16 million condoms in 1999, about a 30% decline from 1998 levels, with a further decline seen in the Rift Valley in 2000. Similarly, the number of condoms in the Central province declined by 50% from 8.1 in 1998 to 4.0 in 2000. These changes in total condom distribution can be attributed primarily to changes in government distribution as the condoms distributed by social marketing programs represent a small proportion of the total condoms.

Table 10. Number of condoms in millions distributed between 1998 and 2000 through social marketing and the government sector.

Region	Social Marketing <sup>1</sup>			Government <sup>2</sup>			Total			Condoms per person of reproductive age who had sex in the last year <sup>3</sup> 1998
	1998	1999	2000	1998	1999	2000	1998	1999	2000	
Nairobi	3.3	4.3	5.1	12.7	16.9	14.2	16.0	21.2	19.3	19.6
Central	0.5	0.5	0.5	7.6	7.0	3.5	8.1	7.6	4.0	5.8
Coast	1.1	1.5	1.7	6.3	3.4	5.7	7.4	4.9	7.4	7.9
Eastern	2.3	2.1	1.6	9.0	6.0	4.9	11.3	8.1	6.5	6.4
Nyanza	0.9	1.0	1.4	21.8	14.2	n/a	22.7	15.2	n/a	13.6
Rift Valley	1.6	2.0	2.3	21.5	14.2	10.7	23.1	16.2	13.0	8.7
Western	0.6	0.7	0.7	5.6	4.6	8.0	6.2	5.3	8.7	4.9
Total	10.3	12.2	13.2	84.6	66.4	n/a	94.8	78.5	n/a	9.0

n/a: not available

1. source: PSI /Kenya sales data

2. source: Medical Supplies Coordinating Unit, Ministry of Health, Kenya

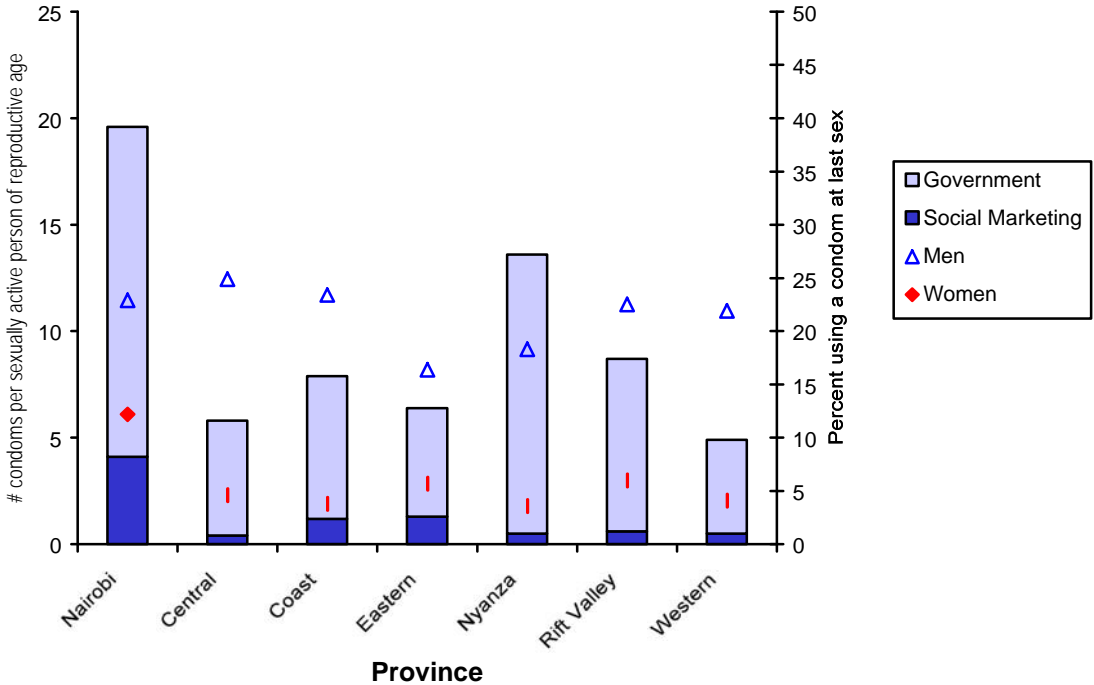
3. based on 1999 census data and the number of condoms distributed by social marketing and the government sectors in 1998

In order to compare condom availability between the provinces (which have varying population sizes), the number of condoms distributed per person in 1998 was calculated. These figures are based on the population within each province that is of reproductive age (15-49 for women and 15-54 for men) and who had sex in the past 12 months. This provides an estimate of the number of condoms available per person who may need or be likely to use a condom. Overall, 9 condoms per sexually active person were distributed in Kenya in 1998. The number of condoms distributed per person who had sex in the past 12 months is highest in Nairobi (19.6) followed by the Nyanza province (13.6) and lowest (less than 6) in Central and Western provinces.

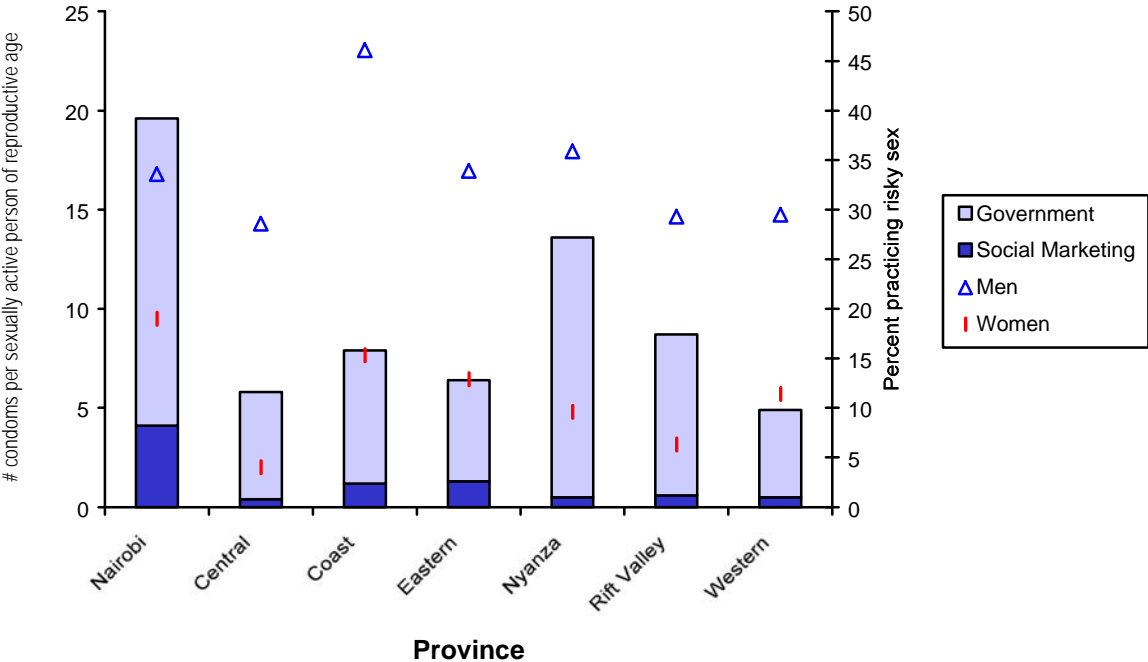
One question that can be asked is whether condoms are distributed to areas of the country where the need is greatest. Figure 1 presents the percent of men and women practicing any risky sex along with the number of condoms distributed per sexually active person in each of the six provinces. Risky sex is defined as having more than one sexual partner in the past 12 months, paying or receiving money for sex in the past 12 months, or having had an STD in the past 12 months. Nairobi is the province with the largest percentage of women practicing risky sex and the Coast province had the highest percentage of men practicing risky sex. Nairobi is also the province where the greatest numbers of condoms per person are distributed. However, as demonstrated in Figure 1, for the other provinces, there is no relationship between the percentage of men and women who engage in risky sexual behavior (denoted by the points) and the quantity of condoms per person distributed in that province (denoted by the bars). For example, the Coast province is notable for having the largest percentage (46%) of men who practice risky sex and the second highest percentage (15%) of women with risky sexual practices. Yet, the number of condoms distributed per person is almost one-fifth the number distributed in Nairobi.

The percentage of men and women who used a condom at last sex and the number of condoms distributed in each of the six provinces are similarly presented in Figure 2. There appears to be little relationship between the number of condoms distributed and condom use at the provincial level. For example, condom use among men in Nairobi is similar to that in several other provinces despite the fact that many more condoms per sexually active person are distributed in Nairobi. For women, condom use at last sex was higher among women in Nairobi where condoms are more available. However, condom use in the other provinces was similar despite the differences in the relative number of condoms distributed.

**Figure 1. Number of condoms distributed in 1998 and the practice of risky sex by province**



**Figure 2. Number of condoms distributed in 1998 and condom use at last sex by province**



Tables 11(a) and 11(b) below show the relationship between knowledge of where to obtain condoms, willingness to pay for them and condom use. As expected, the percent of respondents who used a condom at last sex is higher among those who know of a place to obtain condoms and among those willing to pay for them. Among women, 61% know of a source for condoms (data not shown). These women are about three times as likely to use condoms as women who do not know where to obtain one. Moreover, 24% of women are willing to pay for condoms (data not shown); these women are about five times as likely to use condoms as women who are not willing to pay. For men, knowledge of a place to obtain condoms is even more strongly associated with use of condoms than for women. In all, about three out of four men know where to obtain condoms (data not shown). These men are about 15 times as likely to use a condom as men who did not know where to obtain condoms.

Table 11(a). Percent of women who used a condom at last sex by access to condoms (1998 KDHS).

	Used a condom at last sex			
	%	n	OR	95% CI
Knows a place to obtain condoms				
Yes	7.4	3982	2.9*	(2.3-3.8)
No	2.6	2613	referent	
Willing to pay for condoms				
Yes	13.8	1560	5.2*	(4.2-6.5)
No	3.0	5041	referent	

OR: odds ratio, CI: confidence interval

\* p<.05

Table 11(b). Percent of men who used a condom at last sex by access to condoms (1998 KDHS).

	Used a condom at last sex			
	%	n	OR	95% CI
Knows a place to obtain condoms				
Yes	26.7	2240	14.8*	(9.1-24.2)
No	2.4	708	referent	
Willing to pay for condoms				
Yes	32.3	1509	4.8*	(3.9-6.0)
No	9.0	1388	referent	

OR: odds ratio, CI: confidence interval

\* p<.05

## 4.2 Condom Availability at Health Facilities

A proportion of the condoms distributed by the Ministry of Health is distributed to health facilities. The availability of condoms and condom promotion at health facilities by province is presented in Table 12. The majority of health facilities (87%) have condoms available for family planning clients. There is some variability in the availability of condoms by region. Condoms for family planning clients are available at almost all the health facilities surveyed in the Coast province. They are least likely to be available in the Rift Valley where only 76% of health facilities have condoms. For the remaining provinces about nine in ten facilities have condoms. Fewer facilities offer condoms free of charge; overall, just over three-quarters of facilities have free condoms. Only about one-half of health facilities encourage dual method use with family planning clients; that is using a condom in addition to a non-barrier contraceptive method. Promotion of dual method use is most likely to occur at health facilities in Nyanza and Nairobi provinces and least likely to occur at facilities in the Coast province.

Only 77% of health facilities in Kenya have condoms available for HIV/STD patients. While most facilities in the Coast province have condoms (94%), less than 80% of health facilities in Nyanza, Rift Valley, Eastern, and Nairobi provinces have them available for HIV/STD clients. Almost all health facilities that offer condoms to HIV/STD clients provide condoms free of charge. The majority of health facilities also provide education to HIV/STD clients on condom use. Facilities located in Nairobi and Coast Provinces are most likely to provide education to HIV/STD clients whereas facilities in the Eastern province are least likely to do so.

Overall, 36% of health facilities provide training to community health workers in condom promotion and safe sex. About one-half of health facilities in the Western and Rift Valley Provinces train community health workers. However, only about 20% of facilities in Nairobi and in the Eastern province do so.

Table 12. Percent of health facilities with condoms available and who promote use of condoms by region (1999 KSPA).

	Region							Total
	Western	Rift Valley	Nyanza	Eastern	Coast	Central	Nairobi	
Have condoms available for FP clients <sup>1</sup>	90%	76%	89%	89%	99%	92%	90%	87%
No charge for condoms FP <sup>1</sup>	82%	66%	82%	75%	93%	80%	86%	77%
Recommend dual method use <sup>1</sup>	48%	51%	61%	49%	39%	47%	60%	51%
Have condoms available to HIV/STD patients	81%	75%	70%	69%	94%	83%	79%	77%
No charge for condoms for HIV/STD patients	79%	69%	64%	64%	90%	76%	71%	71%
Provide education to HIV/STD patients on condom use	82%	87%	83%	73%	90%	85%	90%	84%
Provide training to community health workers in condom promotion/safe sex	50%	51%	43%	21%	29%	30%	20%	36%
Number of facilities	30	101	58	68	36	61	34	388

(1) among the 341 facilities that offer family planning



## CHAPTER 5 AIDS AWARENESS AND CONDOM PROMOTION THROUGH THE MEDIA

This chapter characterizes the association between condom promotion and AIDS awareness messages in the media, and knowledge of AIDS prevention and use of condoms. First it identifies the channels through which men and women obtain information about AIDS. Next, it explores the relationship between the sources of AIDS information and knowledge about AIDS and condom use. Finally, because factors other than exposure to mass media messages (e.g. age, education) may influence knowledge of AIDS and condom use, multivariate logistic regression was used to adjust for socio-demographic characteristics that may be associated with knowledge and condom use.

### 5.1 AIDS Awareness by Media

The 1998 KDHS recorded almost universal awareness of AIDS among men and women. Table 13 presents sources of information on AIDS for all men and women surveyed. The most common single source of knowledge about AIDS is the radio, cited by 73% of women and 88% of men. Among women, relatives and friends are the next most common source of AIDS information, cited by 57% of women. For men, it is the newspaper, cited by 42% of men. A greater percentage of men reported hearing an AIDS message from mass media sources (radio, television, newspaper, and posters or pamphlets). In turn, more women reported having heard an AIDS message from a community source (health worker, church or mosque, school, friends or relatives, and drama performances).

Table 13. Percent of women and men who have heard of AIDS through different channels.

	Women		Men	
	%	n	%	n
Heard about AIDS through:				
Radio	73.3	5716	87.5	2973
Television	20.0	1562	32.4	1097
Newspaper	22.8	1780	41.8	1415
Posters/pamphlets	17.8	1385	25.7	869
Health Workers	26.0	2029	16.4	557
Church/mosque	12.2	950	7.4	251
School	17.4	1355	13.8	467
Community meetings	12.6	983	12.3	415
Friends/relative	56.7	4422	33.9	1149
Workplace	2.8	218	4.3	145
Drama Performance	4.1	318	2.9	100
Other	2.6	204	3.6	121
Ever Heard of AIDS	99.0	7880	99.5	3386

### 5.2 Exposure to Media and Knowledge That A Condom Can Prevent AIDS

Tables 14(a) and 14(b) show significant associations between exposure to information on AIDS from the mass media and health workers, and knowledge that a condom can prevent HIV. Respondents who have been exposed to information about AIDS through the media are about twice as likely to have correct knowledge of condoms than those who were not. For example, 54% of women who heard an AIDS message on television know that a condom can prevent HIV as

compared to only 34% of women who had not heard about AIDS on television. For men, these figures are 60% and 43% respectively. Findings are similar for both men and women for exposure to messages about AIDS on the radio, newspaper, or pamphlets/posters.

For women, the association between having heard about AIDS from a health worker and knowing that a condom can prevent AIDS is weak though still significant. Having heard about AIDS from a health worker was not associated with knowledge of condoms among men.

Table 14(a). Percent of women with knowledge that a condom can prevent HIV by exposure to mass media and AIDS prevention messages (1998 KDHS).

	%	n	OR	95%CI
Heard about AIDS on the radio				
Yes	41.8	5709	2.0*	(1.8-2.3)
No	26.1	2083	referent	
Heard about AIDS on television				
Yes	53.6	1559	2.3*	(2.0-2.6)
No	33.6	6232	referent	
Read about AIDS in the newspaper				
Yes	53.7	1779	2.4*	(2.1-2.7)
No	32.8	6013	referent	
Read about AIDS in pamphlets/posters				
Yes	49.1	1384	1.8*	(1.6-2.0)
No	35.1	6408	referent	
Heard about AIDS from a health worker				
Yes	44.0	2027	1.4*	(1.3-1.6)
No	35.3	5764	referent	

OR: odds ration; CI: confidence interval

\* p < .05

Table 14(b). Percent of men with knowledge that a condom can prevent HIV by exposure to mass media and AIDS prevention messages (1998 KDHS).

	%	n	OR	95% CI
Heard about AIDS on radio				
Yes	60.3	1510	2.3*	(1.5-2.3)
No	43.6	148	referent	
Heard about AIDS on the television				
Yes	60.3	1098	2.0*	(1.7-2.3)
No	43.6	2287	referent	
Read about AIDS in the newspaper				
Yes	57.7	1414	1.8*	(1.6-2.1)
No	42.8	1971	referent	
Read about AIDS in pamphlets/posters				
Yes	62.1	483	2.2*	(1.8-2.7)
No	42.8	1971	referent	
Heard about AIDS from a health worker				
Yes	50.3	557	1.1	(1.0-1.3)
No	48.8	2828	referent	

OR: odds ration; CI: confidence interval

\* p < .05

### 5.3 Exposure to Media and Condom Use

Tables 15(a) and 15(b) show the association between exposure to AIDS information in the mass media and from health workers and condom use. Women who heard about AIDS on the radio, on television, or read about AIDS in the newspaper, are about twice as likely to use a condom than those who were not exposed. While less strongly associated, reading about AIDS in pamphlets or on posters was also associated with an increase in likelihood of using a condom at last sex. While similar associations were found for men, the associations between media exposure and condom use at last sex were slightly weaker. Men who heard about AIDS on the radio, on television, in the newspaper, or in pamphlets or posters were 30-50% more likely to have used a condom than men not exposed to these media. There is no relationship between receiving information from a health worker and condom use for men or women. Those who had heard of AIDS from a health worker were just as likely to use a condom as those who had not.

Table 15(a). Percent of sexually active women who used a condom at last sex by exposure to mass media and AIDS prevention messages [1998 KDHS].

	% used a condom	n	OR	CI
Heard about AIDS on the radio				
Yes	6.2%	4949	1.9*	(1.4-2.5)
No	3.4%	1651	referent	
Heard about AIDS on television				
Yes	8.5%	1259	1.8*	(1.4-2.3)
No	4.8%	5341	referent	
Read about AIDS in the newspaper				
Yes	8.6%	1405	1.9*	(1.5-2.4)
No	4.7%	5195	referent	
Read about AIDS in pamphlets/posters				
Yes	7.0%	1123	1.4*	(1.1-1.8)
No	5.2%	5477	referent	
Heard about AIDS from a health worker				
Yes	5.7%	1889	1.1	(0.8-1.3)
No	5.5%	4711	referent	

OR: odds ration; CI: confidence interval

\* p < .05

Table 15(b). Percent of sexually active men who used a condom at last sex by exposure to mass media and AIDS prevention messages [1998 KDHS].

	% used a condom	n	OR	CI
Heard about AIDS on the radio				
Yes	21.3	2635	1.3	(1.0-1.8)
No	17.1	310	referent	
Heard about AIDS on television				
Yes	24.9	1004	1.4*	(1.2-1.7)
No	18.8	1942	referent	
Read about AIDS in the newspaper				
Yes	24.5	1300	1.5*	(1.2-1.8)
No	18.0	1646	referent	
Read about AIDS in pamphlets/posters				
Yes	24.2	451	1.5*	(1.1-1.9)
No	18.0	1646	referent	
Heard about AIDS from a health worker				
Yes	20.4	511	1.0	(1.0-1.2)
No	21.0	2436	referent	

OR: odds ration; CI: confidence interval

\* p < .05

## 5.4 Multivariate Analysis of Media Exposure and Knowledge and Use of Condoms

Women and men who have knowledge of and who use condoms may also have characteristics that favor exposure to the media such as higher education or urban residence, for example. Multivariate logistic regression was used to adjust for these and other socio-demographic factors so that the independent effects of media exposure on condom knowledge and use could be assessed. For these analyses, a variable was created to capture the number of media through which an individual reported having been exposed to AIDS messages in the past six months. Types of media included in this summary variable are radio, TV, newspaper, and pamphlets/posters.

The analysis first looked at exposure to media messages about AIDS prevention and knowledge of condoms as a means of preventing AIDS (Table 16a). In both the unadjusted (crude) analyses and the analyses adjusted for socio-demographic differences, there is a significant association between the number of different types of mass media to which the respondent was exposed and knowledge that condoms can help prevent AIDS. After adjusting for these socio-demographic factors, women with exposure to two and three or more types of media are twice as likely and three times as likely, respectively, to know that a condom can prevent AIDS compared to those who had no exposure. For men there is an even stronger association. After adjustment, men exposed to two and three or more types of media are almost three times as likely and four times as likely, respectively, to know that a condom can prevent AIDS compared to those who had no exposure.

As with knowledge of condoms, women and men who use condoms may also have characteristics that favor exposure to the media such as higher education or urban residence. Multivariate logistic regression was applied here as well for reasons stated in the previous section. Table 16(b) presents the results of these analyses. Before adjusting, there was a significant relationship between exposure to more types of media and use of a condom at last sex. However, after adjusting, there was no longer a significant association between media exposure and condom use among women. The failure to see a significant association between these two variables may be due to the small numbers of women who reported using condoms at last sex (less than 6%). It is also possible that media exposure is not truly associated with condom use among women. Among men, the relationship remained significant. Men exposed to media were more than twice as likely to have used a condom at last sex than men with no exposure.

Despite the positive findings, it is possible that the respondents using condoms may be more likely to recall hearing or seeing media messages about condoms. Similarly, this holds true for knowledge of condoms and exposure to media. The multivariate analyses conducted are not sufficient to overcome this bias.

Table 16(a). Odds ratios and 95% confidence intervals for exposure to mass media messages about AIDS and knowledge that condoms help to prevent AIDS.

	Women				Men			
	OR <sub>C</sub>	CI	OR <sub>A</sub>	CI	OR <sub>C</sub>	CI	OR <sub>A</sub>	CI
Number of media sources								
None	referent		referent		referent		referent	
One	1.7*	(1.5-2.0)	1.5*	(1.3-1.7)	1.6*	(1.2-2.2)	1.8*	(1.3-2.5)
Two	2.8*	(2.4-3.3)	2.1*	(1.8-2.5)	3.0*	(2.2-5.1)	2.8*	(2.0-4.0)
Three or more	4.8*	(4.1-5.7)	3.1*	(2.5-3.7)	4.2*	(3.1-5.8)	4.0*	(2.8-5.8)

OR<sub>C</sub>: Crude odds ratio, CI: confidence interval, OR<sub>A</sub>: Odds ratio adjusted for age, marital status, region, education, residence, and socio-economic status.

\*p value < .05

Table 16(b). Odds ratios and 95% confidence intervals for exposure to mass media messages about AIDS and use of a condom at last sex

	Women				Men			
	OR <sub>C</sub>	CI	OR <sub>A</sub>	CI	OR <sub>C</sub>	CI	OR <sub>A</sub>	CI
Number of media sources								
None	referent		referent		referent		referent	
One	1.4*	(1.0-2.0)	1.4	(1.0-2.0)	1.9*	(1.1-3.1)	2.2*	(1.3-3.7)
Two	2.3*	(1.6-3.3)	1.5	(1.0-2.2)	2.2*	(1.3-3.6)	2.1*	(1.2-3.6)
Three or more	3.0*	(2.0-4.3)	1.4	(0.9-2.2)	2.8*	(1.7-4.6)	2.5*	(1.5-4.8)

OR<sub>C</sub>: Crude odds ratio, CI: confidence interval, OR<sub>A</sub>: Odds ratio adjusted for age, marital status, region, education, residence, and socio-economic status.

\* p value < .05

## CHAPTER 6 SUMMARY AND PROGRAMMATIC IMPLICATIONS

There are large gender differences in the practice of high-risk sexual behavior with three times as many men as women practicing risky sex. A much greater percentage of men than women have multiple sexual partners, participate in payment for sex, or have had an STD in the past 12 months. Differences in risk among married men and women are particularly important as married women are often at risk for HIV infection based on their husbands' sexual practices rather than their own. While only a small percentage of married women are classified as having risky sexual practices, almost one-in-four married men fall into this category. While extramarital sex is relatively common among men, less than one-half of married men used a condom with sexual partners other than their wife. While encouraging condom use within marriage can be difficult, condom use should be encouraged among men and women who have extramarital sex.

In addition to gender differences, there is significant variation in the practice of high-risk sexual behavior in different subgroups of the population. Young women, never married women, formerly married women, and urban women are most likely to practice risky sex. From one-in-four to one-in-five women are classified as having risky sex within these different population subgroups. For men, differences between population subgroups are smaller than they are for women, though the characteristics of those at risk are similar. Young men, formerly and never married men and, recent migrants are most likely to practice risky sex. In fact, almost one-half of men within these population subgroups engaged in high-risk sexual behavior. These differences in sexual behavior among population subgroups are important for designing condom promotion activities so that they can be targeted to those most at risk.

There is evidence of some success in educating the population of the risk of AIDS associated with sexual behavior. The perceived risk of acquiring AIDS was greater among those respondents with higher risk sexual behaviors (defined as having multiple sexual partners, payment for sex, or an STD) as compared to those not practicing these behaviors. However, perceived risk of AIDS was not related to whether or not someone was having sex with a non-cohabiting partner. Yet, sex with a non-marital partner is considered higher risk sex because of increased multiple partnerships over time. The risk of AIDS related to sex outside of marriage should also be emphasized.

Despite the high HIV prevalence and widespread knowledge of AIDS in Kenya, condom use remains low. Overall, very few women and only one-in-five men used a condom during their last sexual encounter, and fewer than one-in-ten women have ever used a condom. In addition, while knowledge of condoms is high, less than one-half of men and women reported that condoms protect against HIV. Condom prevention programs should aim at increasing this knowledge before condom use can be expected to rise. Things are, however, moving in the right direction. Between 1993 and 1998, there were significant increases in knowledge that condoms protect against AIDS and use of condoms for both men and women.

Media appears to play a significant role in increasing knowledge that may later translate into use of condoms, at least for men. The more types of media that men and women have been exposed to, the more likely they are to have the correct knowledge that condoms can prevent HIV. For men, exposure to media messages is also significantly associated with condom use. The role of the health workers in passing correct condom knowledge is relatively small compared to other sources. Information on media exposure indicates that respondents are more likely to have correct knowledge of condoms if they heard a message in the media than if they heard it from a health

worker. Similarly, respondents who heard a condom message on the mass media are more likely to use a condom than those who heard of AIDS from a health worker. Despite this difference, women who reported receiving information about AIDS from a health worker do have higher knowledge (though not use) of condoms.

An encouraging finding is that condom use is highest among younger men and women and never married men and women. These are the groups that also have higher risk sexual practices including multiple partners, non-marital partners, and payment for sex. Condom promotion activities should continue to focus on these groups so that condom use can be further increased. Not only are younger and never married men and women at higher risk of acquiring AIDS, but they are the groups most likely to be influenced by behavior change campaigns and to adopt new practices.

Another positive finding is that men and women who reported multiple sexual partners, payment for sex, or having had an STD are much more likely to use a condom than respondents who did not report these risky practices. This indicates that condoms are being used by those most at risk for HIV infection. However, despite the relatively higher use of condoms among those at higher risk, use of condoms is still low. Almost two-thirds of men with multiple sexual partners in the past 12 months did not use a condom at last sex. Similarly, four of five women with multiple partners in the past 12 months did not do so. Again, further work is needed to further encourage condom use among these groups.

For women, higher educational attainment is strongly associated with condom use. Education may provide women with a level of assertiveness that allows them to negotiate condom use with their partner. These women may also be more aware of the risks involved in having unprotected sex. Similarly, women living in an urban environment also have higher rates of condom use. This may be related to greater accessibility and acceptability of condoms in urban areas. Condom use at last sex among women who use modern family planning methods (other than condoms) is quite rare indicating that there is probably little dual method use in Kenya.

An additional finding, and one that is consistent across studies of condom use, is the discrepancy between condom use by men and women. While between one-quarter and one-half of non-married men used a condom at last sex, depending on partner type, many fewer non-married women did so. This implies that a few women are using condoms with a larger number of men. However, even when assessing the use of condoms at last sex with a spouse or cohabiting partner, there are differences in reported use by men and women. One possible explanation for some of the difference is under-reporting of condom use by women or over-reporting by men.

Almost 95 million condoms were distributed in Kenya in 1998 by the government and the social marketing program. This results in about nine condoms per year per sexually active person. While this is an insufficient number to cover every sexual act, not every sexual act necessarily needs to involve a condom. Rather, condoms need to be promoted to, and used by, men and women who are practicing higher risk sexual behaviors. Despite the large number of condoms distributed nationally, a significant number of men and women do not know of a place to obtain a condom. Yet, there is strong association between knowledge of a place to buy a condom, and using a condom at last sex. In addition, this association is much stronger for men than for women, implying that it is the men who are obtaining condoms. Increasing knowledge of where to obtain condoms is still needed.

In conclusion, HIV prevention and condom promotion programs need to continually strive to improve their effectiveness. Appropriate program adjustments may have to be made to increase condoms use, especially among the high-risk groups.





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