



Ministry of Health
Republic of Kenya

HIV/AIDS and Sexually Transmitted Infection in Kenya

BEHAVIOURAL SURVEILLANCE SURVEY 2002

SUMMARY REPORT

National AIDS/STI Control Program (NAS COP)

Ministry of Health

© Ministry of Health 2005

Published by the National AIDS/ STI Program (NASCOP)

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Correct citation:

Kenya. Ministry of Health. *Behavioural Surveillance Survey 2002: summary report, HIV/AIDS and sexually transmitted infection in Kenya*. Nairobi: National AIDS/ STI Control Program, Ministry of Health; 2005.

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Foreword

The cornerstone of a country's response to HIV/AIDS lies in its surveillance system. In 1999, UNAIDS, WHO and other international partners recommended that countries conduct second generation surveillance to improve their responses to the HIV epidemic. Second generation surveillance recognizes the fact that HIV infection is preceded by specific behaviour such as unprotected sex and multiple sexual partners. Integrating multiple sources of surveillance information (serological, behavioural and others) yields a better understanding of the HIV epidemic and strengthens national responses to it.

In 2002, the government of Kenya through the National AIDS and Sexually Transmitted Infection Control Program in collaboration with other national and international partners initiated the first national behavioural surveillance survey on HIV/AIDS. This survey focused on seven vulnerable groups: youth (in and out of school), men in worksites, policemen, passenger van drivers (matatu operators), bicycle taxi drivers (bodaboda cyclists), women in low income settings and female sex workers.

The findings of this survey will for the first time provide data on the sociodemographic and behavioural characteristics of selected target groups. This survey will serve as a basis for explaining changes in HIV prevalence, tracking changes in behaviour that relate to HIV/AIDS, and informing and evaluating national HIV/AIDS programs and interventions.

On behalf of the Ministry of Health, I welcome the publication of this summary report of the Kenya Behavioural Surveillance Survey 2002. We thank all those who supported and participated in the planning and implementation of the survey, and in the production of this report. The ministry recommends that this information be used to guide and improve HIV/AIDS policy formulation and program design.



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Director of Medical Services

Acknowledgements

The National AIDS and Sexually Transmitted Infection Control Program (NASCOP) of the Ministry of Health implemented this behavioural surveillance survey.

However, the survey would not have been possible without the joint efforts of a number of agencies and persons who deserve recognition for their contributions.

The United States Agency for International Development (USAID) and the Centers for Disease Control and Prevention (CDC) provided major financial support.

Family Health International (FHI) and CDC provided technical assistance in the design, implementation, analysis and report writing. The NASCOP Monitoring, Evaluation and Surveillance unit, FHI, CDC and the Central Bureau of Statistics (CBS) jointly designed this survey and provided technical oversight to training, population mapping, field supervision and data management. The government of Kenya, through various ministries and departments, facilitated access to schools and the police. The Matatu Association and the Federation of Kenya Employers provided vital information for mapping and sampling *matatu* or van operators and men in worksites. The Behavioural Surveillance Survey working group drafted the report.

Our deepest gratitude goes to Dr Kenneth Chebet, formerly the director of NASCOP, and all NASCOP staff for their support from the inception to completion of the survey. Further, we would like to thank all the data collectors and supervisors, who worked hard to accomplish to collect the data in a timely manner and maintain data quality. We also extend sincere thanks to all of the respondents who gave their time and answered our questions.

We thank the following for invaluable contributions: Jeanette Bloem, Boaz Cheluget, Ann Khasakhala and Wuleta Lemma for contributing during design and data collection; Isaac Lamba for managing data entry and cleaning; Omondi Odhiambo and Laura Porter for analysing data and drafting the behavioural surveillance survey report; and all data entry clerks for entering the data.

We also wish to thank the Behavioural Surveillance Survey working group for their guidance. Members were

- Godfrey Baltazar – NASCOP
- Ann Barsigo – NASCOP
- Boaz Cheluget – NASCOP
- Ndugga Maggwa – FHI
- Lawrence Marum – CDC
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- Lawrence Mwikya – NASCOP
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Simon-Pierre Tegang and Sam Wambugu, both of FHI, reviewed and edited the report.

Dr Ibrahim Mohammed, Director, NASCOP

Abbreviations and definitions

AIDS	acquired immune deficiency syndrome
ANC	antenatal clinic
bhang	cannabis, marijuana
bodaboda	bicycle taxi, mainly serving at the Uganda border, hence the name, 'border–border'
CBS	Central Bureau of Statistics
CDC	Centers for Disease Control and Prevention (USA)
FHI	Family Health International
HIV	human immunodeficiency virus
KEMRI	Kenya Medical Research Institute
KES	Kenya shilling, valued at 75 to 1 US dollar in this report
khat	<i>Catha edulis</i> , a commonly chewed narcotic and stimulant
matatu	local minibus used for public transport
miraa	alternate name for khat
NASCOP	National AIDS/STI Control Program
sare	free matatu or bodaboda ride
STI	sexually transmitted infection
UNAIDS	United Nations Programme for HIV and AIDS
USAID	United States Agency for International Development
USD	United States dollar
VCT	voluntary counseling and testing
WHO	World Health Organization

Executive summary

The government of Kenya through the National AIDS/STI Control Program (NASCO) of the Ministry of Health in collaboration with Family Health International (FHI), the Centers for Disease Control and Prevention (CDC), and the Central Bureau of Statistics (CBS) conducted a national behavioural surveillance survey of HIV/AIDS and sexually transmitted infection in Kenya in late 2002 in order to understand the behaviour dynamics driving the HIV epidemic. The behavioural surveillance survey is a monitoring and evaluation tool to track trends in HIV/AIDS knowledge, attitudes and behaviour in populations at particular risk of HIV infection, such as youth, female sex workers and migrant men. It is envisaged that this survey will be repeated every two or three years to monitor trends and changes in HIV and sexually transmitted infection risky behaviour in the country. The populations selected to participate in the first round of the national behavioural surveillance survey were out-of-school youth, youth in school, female sex workers, women in low-income settings, *matatu* or mini-van drivers and their touts or helpers, *bodaboda* or bicycle taxi cyclists, policemen, and men in large worksites.

Questionnaires were developed in both English and Kiswahili. They were administered to respondents in the selected groups by trained interviewers under close supervision of a team of supervisors. High standards of conducting the survey were adhered to in terms of a well-planned data collection strategy and a commitment to establish high-quality data systems. EpiData software was used for data entry and processing, and a statistical software package for social sciences was used for data analysis.

Behavioural surveillance survey results serve as an early warning system by alerting policymakers and program managers on emerging risks or changes in existing behaviour, and reveal gaps in knowledge and understanding about HIV/AIDS that can be addressed by interventions. Behavioural survey results also help to identify populations whose behaviour make them vulnerable to HIV infection or at high risk of it and provide information to guide program design and to evaluate programs. The general conclusions, key findings for each target population, and main recommendations in this first round of the national behavioural surveillance survey are presented.

General conclusions

The Behavioural Surveillance Survey 2002 showed that Kenyans were very knowledgeable about HIV/AIDS and sexually transmitted infections. Knowledge of male condoms was also very high. Substantial proportions of respondents reported having many sex partners. Premarital sex was common among out-of-school youth. Condoms were not used consistently with higher-risk partners. In the absence of a cure, behaviour change remains the best way to keep HIV/AIDS at bay. The ABCs of safe sex—abstaining from sex, being faithful to one uninfected sex partner, and

using condoms correctly and consistently—has now become a mantra among organizations promoting awareness of the disease and is the pillar upon which behaviour change is mounted.

Knowledge of HIV prevention methods was relatively high, especially among female sex workers (73%), men in worksites (67%) and policemen (62%). These prevention methods are abstinence, mutual monogamy between HIV-negative partners and consistent condom use. This knowledge was low among out-of-school youth. Less than half (48%) knew HIV prevention methods. There was room for improving HIV/AIDS knowledge, but the results indicate that the majority of respondents, both young and old, had heard about HIV/AIDS, sexually transmitted infections and condoms. Most knew someone infected with HIV/AIDS or someone who had died of it. Most had a close friend or relative with HIV or one who had died of AIDS. Most respondents reported no misconceptions about HIV transmission.

Despite this high awareness of the disease, a significant number of sexually active respondents across the target groups had many non-regular sex contacts unabated. This persistent behaviour indicates that heightened awareness of the HIV/AIDS and sexually transmitted infections epidemic and of the efficacy of condom use and knowledge of HIV prevention methods were not translating into safer sex.

Many out-of-school youth were sexually active (65%) and engaged in early and risky sex. Mean age at first sex was 15.7 years. These youth were vulnerable to HIV infection, given the rate (6.7%)¹ in the general population age 15–49 years. Their knowledge of HIV prevention methods (48%) and of someone—friend or relative—infected with HIV or who had died of AIDS was also lower than in the adult groups in this survey. Since many of these youth started engaging in sex at an early age, they increase their chances of being exposed to infection. This risk is especially high among young females, who tended to have sex with older men.

Despite knowledge of HIV prevention methods and correct information about HIV transmission, stigma and discrimination against people with HIV were widespread. Such attitudes are likely to have a negative effect on care and support programs for people infected and affected by HIV/AIDS. Stigma may also pose an obstacle to behaviour change if not addressed. Still, an optimistic finding was that the majority of respondents expressed willingness to care for a family member if he or she fell ill with HIV/AIDS. Many respondents also said if a family member became ill with HIV/AIDS, they would not want it kept secret.

A significant number of youth and adults suffered from sexually transmitted infections. Many had many sex partners, which increased their vulnerability and exposure to HIV. Awareness of sexually transmitted infection was almost universal throughout the target groups, but knowledge of the symptoms was poor, especially among out-of-school youth.

Casual sex contacts were common among adult men. Casual sex was more common among unmarried men, but not uncommon among married men. The proportion of married men who had non-regular partners varied from 13.9%

(men in worksites) to 33% (matatu operators); sex with commercial sex partners varied from 3% (men in worksites) to 13% (bodaboda). A substantial proportion of unmarried men in each group had had no sex partners in the year before the survey, but the majority had non-regular or commercial partners.

An important correlate of risky sex is alcohol use. The association of alcohol and higher-risk sex behaviour was demonstrated in each population. Men who drank alcohol regularly were more likely to have non-regular and commercial partners. Bars, clubs and other places where alcohol is commonly consumed should be important points for HIV prevention intervention.

There was much room for improvement in using condoms among all target populations. Sex with non-regular partners or sex workers without a condom was prevalent. In the last 12 months, unprotected sex with higher-risk partners was most common among out-of-school youth (78%) and least common among women in low-income settings (8%). Among out-of-school youth, condom use was particularly low at first sex (21%) and remained relatively low with non-commercial sex partners. In the 12 months before the survey, just 23% of out-of-school youth reported to have consistently used condoms with non-commercial partners. Condom use at last sex with non-regular and commercial partners was relatively common among adults. As expected, condom use was more common with commercial than non-paying partners. But anything less than 100% condom use exposes sex partners to the risk of sexually transmitted diseases, including HIV/AIDS. Trust of a partner was the most common reason for not using a condom at last sex. Youths also mentioned dislike of condoms as a reason for not using them.

Knowledge of voluntary counseling and testing sites may serve as a proxy indicator of the availability of voluntary counseling and testing services in the country. Most respondents in this survey reported willingness to use these services, if available. But only about half the adults and a quarter of out-of-school youth knew where to go in their area for an HIV test. Knowledge of one's HIV status is a powerful tool for behaviour change and helps reduce unprotected sexual intercourse.

Out-of-school youth

- General awareness about HIV/AIDS was widespread (>97%) among out-of-school youth. About two-thirds (65%) said they knew someone infected with HIV or who had died of AIDS. One-third said they had a friend or relative with HIV or who had died of AIDS.
- About half (48%) of out-of-school youth were aware of HIV/AIDS prevention methods and more than half (56%) had no misconceptions about AIDS transmission. Over 97% had heard of or seen a male condom.
- Male out-of-school youth were more likely than their female counterparts to use alcohol and drugs. Less than one-fifth (16%) of these males had consumed alcohol at least once a week in the four weeks before the survey; only 5% of females had. Similarly, more male (19%) than female (5%) youth had ever chewed khat (*miraa*) or smoked bhang (9% male, 2% female).

- Stigma and discrimination against people living with HIV/AIDS was quite common among out-of-school youth. Only 19% demonstrated strong accepting attitudes towards people living with HIV/AIDS. Despite this, the majority (84%) reported willingness to care for a relative sick with HIV/AIDS.
- Awareness of sexually transmitted infection among out-of-school youth was high (91%), but knowledge of the symptoms was poor. The prevalence of the symptoms among sexually active youth was relatively low (5% in the last 12 months) and could be due to under-reporting.
- Two-thirds of out-of-school youth had ever had sex. First sex with a condom was low (21%). On average, first sex among female youth was with an older partner; male youth tended to have sex partners of similar age.
- More than 57% of out-of-school youth who ever had sex were sexually active in the last 12 months (75% male, 55% female). About 40% of all youth had sex in the last 12 months (47% male, 33% female).
- The majority of sexually active out-of-school youth (>95%) had sex with non-commercial partners in the last 12 months. Of these, more than one-third used a condom at the last encounter. One out of five consistently used condoms with such partners during the last 12 months.
- Commercial sex in the last 12 months was less common (12%) than non-commercial sex. Among the youth who had at least one commercial sex partner, more than half used a condom at the last encounter and more than one-third consistently used condoms.
- Among youth who had sex in the last 12 months, three-quarters had sex without a condom. Male youth were more likely than female youth to have ever had sex and to be sexually active in the last 12 months. But, among the youth who were sexually active, male and female youth had similar rates of exposure to HIV through unprotected sex.
- Most out-of-school youth (86%) reported willingness to use voluntary counseling and testing services, if available, but only about a quarter knew of facilities in their residential area where they could go for an HIV test.
- Only about 10% out-of-school youth reported ever having an HIV test. The majority of testing was voluntary and more than 90% of those tested received the results. Male and female youth reported similar rates of testing.

Female sex workers

- Among female sex workers, general awareness about HIV/AIDS and condoms was universal. About 88% said they knew someone infected with HIV or someone who had died of AIDS. More than two-thirds said they had a friend or relative with HIV or who had died of AIDS.
- Nearly three-quarters of female sex workers were aware of HIV/AIDS prevention methods and 60% had no misconceptions about HIV/AIDS transmission. Most (>85%) reported willingness to care for a relative sick with HIV/AIDS. More than half said they would not want it kept a secret if a family member became sick with HIV/AIDS.

- Female sex workers consumed alcohol regularly. More than three-quarters had drunk alcohol in the last four weeks, with 23% reporting daily consumption and 44% once a week. About 38% chewed khat and 19% smoked bhang regularly.
- Stigma and discrimination against people with AIDS was common among female sex workers; only about a quarter demonstrated strong accepting attitudes towards people living with AIDS.
- Though awareness of sexually transmitted infection was universal among female sex workers, knowledge of the symptoms was poor (between 26% and 53%). The prevalence of symptoms among female sex workers in the last 12 months was low (8%), which could be from under-reporting and because many sexually transmitted infections at their early stages are asymptomatic in women.
- The mean number of sex partners reported by female sex workers was one non-paying and three paying partners in the seven days before the interview.
- Nearly half the female sex workers had had sex with non-paying partners in the last seven days. Of these, more than half used a condom during the last sexual encounter and one-third consistently used condoms with such partners over the last 12 months.
- Most female sex workers (87%) had sex with paying clients in the last seven days. Of these, 88% used a condom during the last sexual encounter and more than two-thirds consistently used condoms with clients in the last 30 days.
- More than three-quarters of female sex workers reported willingness to use voluntary counseling and testing services, if available, although only 40% knew of facilities in the area where they could go for an HIV test.
- More than one-third of female sex workers reported ever having an HIV test.

Adult target groups

- Among the adult target groups, general awareness about HIV/AIDS and condoms was universal. The majority of them said they knew someone infected with HIV or someone who had died of AIDS. Of these, more than two-thirds said they had a friend or relative with HIV or who had died of AIDS.
- Knowledge of HIV prevention methods was highest among men in worksites (68%) and lowest among matatu operators (49%). Misconceptions about HIV/AIDS transmission were least common among men in worksites (75% no misconceptions) and most common among bodaboda cyclists (57% no misconceptions).
- With the exception of women in low-income settings, adult respondents commonly used alcohol, khat and bhang. Nearly two-thirds of policemen and one-half of matatu operators consumed alcohol regularly. Chewing khat was common among matatu operators (41%) and policemen (28%). Matatu operators (25%) and bodaboda cyclists (13%) also smoked bhang regularly.
- The majority of adult target groups (>80%) reported willingness to care for a relative sick with HIV/AIDS. Between 46% and 73% said they would not want it kept a secret if a family member became sick with HIV/AIDS.

- Stigma and discrimination against people living with HIV/AIDS was observed across the target groups despite knowledge about HIV/AIDS transmission and prevention methods. Men in worksites (43%) demonstrated the strongest and bodaboda cyclists (15%) the weakest accepting attitudes towards people living with HIV/AIDS.
- Though awareness of sexually transmitted infection among adult target groups was universal, knowledge of the symptoms was relatively low (between 9% and 21%). The prevalence of the symptoms in the last 12 months (2% men in worksites, 8% bodaboda cyclists) was low.
- With the exception of men in low-income settings, adult male respondents had more sexual encounters with non-regular sex partners (between 21% and 48%) than with commercial sex partners (between 4% and 14%) in the last 12 months.
- Multiple sexual relationships were common among most adult target groups.
- Between 55% and 67% of adult groups used a condom at the last sexual encounter with non-regular partners and between 39% and 59% consistently used condoms with such partners over the last 12 months.
- Unprotected sex with higher-risk partners in the last 12 months was most common among matatu operators (22%) and bodaboda cyclists (20%) and least common among women in low-income settings (8%) and men in worksites (9%). The most common reason given for not using a condom was trust of partner.
- Most adult respondents (> 70%) reported willingness to use voluntary counseling and testing services, if available, although only between 35% and 53% knew of facilities in the area where they could go for an HIV test.
- Between 17% and 24% adult respondents reported ever having an HIV test.

Recommendations

- *Target special populations and high-risk places.* There is urgent need to improve and intensify HIV/AIDS prevention and care programs. These programs should target higher risk populations and places where higher risk sex behaviour is common.
- *Support a coordinated information, education and behaviour change communication strategy.* Kenya needs a national strategy aimed at the target groups for communicating informative messages and educating people on the importance of behaviour change. Key elements should focus on promoting abstinence and faithfulness, reducing the number of sex partners, encouraging delay in first sex among youth, promoting proper condom use and availability, strengthening programs for sexually transmitted infection control and encouraging voluntary counseling and testing.
- *Encourage correct, consistent condom use among high-risk populations.* Special initiatives are needed to promote condom use among the highest-risk core and bridge populations, such as female sex workers and bodaboda cyclists. They are at the highest risk of acquiring HIV and transmitting it to the general population.

- *Minimize stigma and discrimination.* Mass media and information and education communication should address stigma and misconceptions to enhance behaviour change.
- *Equip health centres and health workers to provide care for sexually transmitted infections.* Availability of services for detecting and controlling other sexually transmitted infections, such as syphilis, gonorrhoea, and chancroid or herpes that cause genital ulcers or sores, can be important for managing the HIV/AIDS epidemic. Ensuring that all health facilities have well-trained staff supplied with appropriate drugs will help achieve the goal of detecting, diagnosing, treating, and eventually controlling sexually transmitted infections.
- *Promote voluntary counseling and testing services.* Given that a high proportion of respondents in this survey expressed willingness to use voluntary counseling and testing services if they were available, these services should be established and promoted throughout the country. As soon as the counseling and testing centres are established, the government and its development partners should publicize them and encourage people to know their HIV serostatus and go for HIV testing.
- *Focus on youth.* Youth represent the future of Kenya and need special attention in HIV prevention programs. Youth report high sexual activity and low condom use, which puts them at increased risk of infection with sexually transmitted infections, including HIV. A multipronged approach that involves abstinence, faithfulness and condom use is urgently needed. Around the world, successful prevention programs among the youth are ones that equip them with the knowledge, skills and attitudes to delay sex and to prevent infection once they become sexually active. Female out-of-school youth are at particularly high risk of HIV infection because they often have older sex partners. There is an urgent need for the government and its development partners to develop and promote special programs to empower female youth and equip them with life and negotiation skills.
- *Measure behaviour at regular intervals and design interventions on the results.* This behavioural surveillance survey has provided valuable baseline information. These findings can be used to redesign and improve the sexually transmitted disease program. To measure the success of the interventions, it will be necessary to conduct a behavioural surveillance survey among the same groups every two or three years. Additionally, more research—both quantitative and qualitative—might be conducted to provide insight into the causes of some risky sexual behaviour and the barriers to adopting healthier behaviour.

1 Introduction

Background

The Republic of Kenya covers 582,000 square kilometres. Ethiopia borders it to the north, Sudan to the north-west, Uganda to the west, Tanzania to the south and Somalia to the east. The country has 400 km of Indian Ocean shoreline.

Approximately 80% of Kenya is arid or semi-arid. Only 20% is arable. Much of the arid and semi-arid land has been set aside for wildlife conservation. Agriculture is the mainstay of Kenya's economy, accounting for 26% of the gross domestic product; manufacturing accounts for about 14%. Tea, tourism, coffee and horticulture, in that order, are the main foreign exchange earners.

The country is divided into eight administrative provinces: Nairobi, Central, Eastern, North Eastern, Coast, Rift Valley, Nyanza and Western. These are divided into 75 districts. The capital city is Nairobi and the port city is Mombasa. The country is multi-ethnic, with 43 ethno-linguistic groups. Christianity and Islam are the major religions. Kenya's population is mainly rural; according to the 1999 census, only 20% of Kenya's population was urban.

Kenya's mid-2003 population was estimated at 31.6 million and is projected to increase to 36.5 million by 2010 and 43 million by 2020.² HIV/AIDS affects Kenya's population size but will not cause population growth to stop or become negative.

Kenya has experienced a phenomenal demographic transition over the last few decades. The census figures show that the total population grew from 5.4 million in 1948 to 28.7 million in 1999. Census results also indicate that Kenya's annual population growth rate increased from 3% in 1948 to a peak of 4% in 1979, before decreasing to 3% by 1999. While the increase in the growth rate in the earlier decades is attributed to increase in fertility and decrease in mortality as a result of improved health and socio-economic status, decline in the last two decades is mainly due to decline in fertility. Total fertility rate declined from 8.1 children per woman in 1979 to 4.7 in 1998 and 4.9 in 2003.¹

Overview of HIV/AIDS in Kenya

Using data from an antenatal clinic (ANC) sentinel surveillance system, NASCOP estimated that 9.4% of pregnant women were HIV infected in 2003. This represents a decline in HIV prevalence, which has been observed the last three years. In 1990, the prevalence was 5.1% among pregnant women in the ANC sentinel surveillance. A trend of prevalence decline among women in the ANC sentinel surveillance emerged in 2001, when HIV rates were estimated at 13% after a peak of 13.5% in 2000. It further declined to 10.2% in 2002.

HIV testing results from the Kenya Demographic Health Survey 2003¹ further confirmed this lowering of HIV infection among pregnant women. Overall, 7% of

the respondents tested were found to be HIV positive. These results showed that women (9%) were more likely to be HIV infected than men (5%). HIV was found to be almost twice as high in urban areas (10%) as in rural ones (6%).

Kenya is one of the many African nations with a serious general AIDS epidemic. Approximately two million Kenyans are living with HIV today. Given high death rates from AIDS, Kenya was estimated to have more than 900,000 orphans by the year 2001. Significant rural and urban differences in prevalence have been documented. In 2000 urban rates were estimated at 17–18%, while rural rates were 12–13%. Rural HIV prevalence is increasing rapidly and the bulk of population is rural. Thus, although urban prevalence was higher, the number of rural people infected is larger.

The government is committed to winning the battle against HIV/AIDS and has declared AIDS a national disaster. The government established a National AIDS Control Council to advocate, strengthen and coordinate the response to contain the virus and mitigate its impact. A parliamentary paper, a national AIDS policy and a national strategic plan for HIV/AIDS have been developed to guide all partners in the nation's response.

So far Kenya has been relatively successful in providing HIV/AIDS information and services to its people, despite the high rate of infection. The population is becoming increasingly aware of the disease and ways to prevent its transmission. Yet, while 90% of Kenyans are aware of HIV/AIDS, their knowledge of their own HIV status is limited and rates of risky sex behaviour are high. Many still do not accept that AIDS could possibly affect them or someone they know. The Kenyan Behavioural Surveillance Survey 2002 describes this knowledge and behaviour in some important high-risk groups.

Introduction to the behavioural surveillance survey

The behavioural surveillance survey is designed to track trends in HIV/AIDS knowledge, attitudes and behaviour in populations at risk of infection, such as female sex workers, injecting drug users, migrant men and youth. The survey consists of repeated surveys conducted systematically to monitor changes in HIV/STI risk behaviour using HIV and sexually transmitted infection surveillance methods. It uses a standardized approach to developing the questionnaire, constructing the sampling frame, implementing the survey and analysing the results. Behavioural surveillance survey findings yield evidence of project effect, provide indicators of project successes, highlight persistent problems, identify populations for intervention, identify behaviour needing change, function as a policy and advocacy tool and supply comparative data concerning behaviour.

National behavioural surveillance surveys have been conducted in more than 25 countries and their use is growing. Since 1999, they have been used in Asia and Africa, where they have proved beneficial in understanding the pandemic from regional and country perspectives. In several countries, several behavioural surveys have already been conducted and the trend data used to formulate new programs and adapt existing ones.

Objectives

The behavioural surveillance survey has several objectives:

- Help establish a monitoring system that will track behaviour data for high-risk and vulnerable groups, which influence the epidemic in Kenya.
- Provide information on behaviour trends of groups in some of areas where HIV sentinel surveillance data are being tracked.
- Provide information to help guide program planning.
- Provide evidence of the success of the combination of HIV prevention efforts taking place in selected sites.
- Obtain data using standardized questions and format to compare knowledge and behaviour related to HIV/AIDS and other sexually transmitted infections with knowledge and behaviour in other countries.

2 Study design and methods

Study design

Data for the seven risk groups for round one of the Kenya Behavioural Surveillance Survey 2002 were collected late 2002. Due to a national teachers' strike, data on in-school youth were collected in June and July 2003 and will be presented in a second group report. The survey methodology employs a cross-sectional design to collect information on standardized indicators from representative samples of high-risk populations. Because samples are obtained from defined locations, the process can be repeated to monitor trends and compare indicators between sites.

Table 1 shows the number of respondents from each group at each site. In this behavioural surveillance survey 13,998 people were interviewed. The table describes each target group, sampling plans and justifications for selection.

Table 1. Study populations and sites

Category	Description	Location and study sites	Study populations
Female sex workers	Women aged 15–19 years selling sex for money	Bars, nightclubs, hotels, brothels of Kakamega, Machakos, Mombasa, Nakuru and Thika urban centres	1754 females
Policemen	Men aged 18–49 years serving in the police force	Police stations in Nairobi, Garissa, Kakamega, Mombasa and Nakuru districts	592 males
Men in worksites	Men aged 15–49 years employed in large worksites in urban areas	Large worksites in Bungoma, Butere-Mumias, Mombasa and Nakuru urban centres	2120 males
Women in low-income settings	Women aged 25–49 years in communities adjacent to large worksites; may often be the part-time or regular sexual partners of men working in large worksites	Communities adjacent to large worksites in Mombasa, Nakuru, Kakamega, Busia, Bungoma, and Butere-Mumias districts	2112 females
Matatu operators	Matatu drivers and touts aged 15–49 years; highly mobile and spend most of their time on the road	Matatu routes in Nairobi, Kakamega, Mombasa and Nakuru urban centres	673 males
Bodaboda cyclists	Men riding taxi bicycles aged 15–49 years; highly mobile and spend most of their time on the road	Bodaboda routes in Busia township	622 males
Out-of-school youth	Single, unemployed, out-of-school youth aged 15–24 years	Households in Nairobi, Busia, Garissa, Kakamega, Machakos (Kangundo), Mombasa, Nakuru, Nandi (Mosoriot), Suba and Thika districts	6125 out-of-school youth (2886 males and 3239 females)

Sample size calculations are important in behavioural surveillance surveys. The probability sampling method was used to select respondents. The sampling

frames for the household surveys and institution surveys were simple and readily available. However, where sample frames were not available, sampling frame development required preliminary qualitative research and some social and geographic mapping. The mapping objectives were to define target groups, identify their locations, estimate sizes of the potential target groups and systematically list group clusters to serve as a sampling frame for the main survey.

Sample size for each of the seven study populations was based on behavioural parameters observed in selected studies conducted in the country, the expected behaviour change, the degree of confidence in such a change, statistical power and design effects. Two-stage cluster designs were used with each group where appropriate. During the first stage, clusters were selected from a complete site list using proportional probability sampling. Respondents were selected from these clusters during the second stage.

A sampling frame was initially prepared for selecting clusters. For instance, matatu terminals were used to locate the matatu drivers and touts, while matatu routes were used as clusters for sampling them. Police stations were used for locating the police officers. Households were used to locate out-of-school youth. Bars, nightclubs, hotels and brothels were used to locate sex workers. Factories were used to locate men in worksites, and communities adjacent to large worksites were used to locate women in low-income settings. Information regarding clusters, such as district, population group and the estimated number of individuals per cluster, was recorded. All the areas, units, or routes were used as clusters for sampling the different populations.

This behavioural surveillance survey used generic questionnaires, modified for Kenyan issues, administered to respondents by trained interviewers under close supervision by a team of supervisors. The implementation team was committed to conducting a high-quality survey, by following a well-planned data collection strategy and establishing high-quality data systems. Data were entered and processed using EpiData software and analysed using a statistical package software for social sciences.

Study populations

The behavioural surveillance survey sought to include populations particularly vulnerable to HIV and that can influence the epidemic. Female sex workers were considered a core group driving the epidemic because of their high risk of HIV infection and exposure to many partners. The survey identified and interviewed female sex workers operating from bars, nightclubs, hotels and brothels at night at their places of work.

While it is important in a general epidemic to expand prevention efforts to those with lower risk of transmitting the virus, it is also important not to lose sight of the groups driving the epidemic. Groups practising risky behaviour, for whatever reason, help spread HIV. Thus, it is important to maintain focus on interventions with those groups and monitor their behaviour.

It is also appropriate that surveys concentrate on sets of the general population that may interact extensively with sex workers or have many partners. Male workers constitute such a group, especially those who relocate for work or who

move around as part of their profession. It has been noted that members of the uniformed services, including the police force, are at higher risk of exposure to HIV infection. According to the Kenya National HIV/AIDS Strategic Plan 2000–2005, the police force, which makes up a large part of the national security sector, is a population very susceptible to HIV. It is youthful, sexually active, susceptible to peer pressure and likely to take risks. Policemen are often deployed in different areas of the country, away from their families, and are surrounded by opportunities for casual sex. They are often out at night and in close contact with sex workers. Due to the nature of their work, they are also a mobile population. Policemen from stations in Nairobi, Garissa, Kakamega, Mombasa and Nakuru were randomly selected and interviewed.

Men in worksites, factory workers, were an important group for the behavioural survey, primarily because of their importance to the national economy. HIV lowers labour productivity in industry and increases labour costs. Resultant price increases, combined with declining household incomes, may result in lower demand for industrial goods. Men in this sector are at risk because they have a regular source of income and may be working away from their families.

Women in low-income communities adjacent to large worksites may often be the part-time or regular sex partners of men working in these worksites. Women aged 25–49 years living in low-income communities around large worksites were identified, selected and interviewed.

Matatu drivers and touts and bodaboda cyclists were thought to be at elevated risk because they receive regular, perhaps daily income, have an attractive, trendy image among youth and can offer rides in exchange for sex to girls and women who cannot afford to pay fares. It was also anecdotally believed they are likely to indulge in alcohol and drugs. These factors increase their chances of infection. Matatu and bodaboda routes were used as clusters to sample matatu drivers and touts and bodaboda cyclists. Fixed time intervals were used to select respondents. Matatu drivers and touts were also sampled as different groups.

Young people are particularly vulnerable and figure centrally in the future course of the HIV epidemic. They are a focus for prevention messages in every sexual health program. Since most new infections in mature HIV epidemics were in young people, even modest changes in behaviour would have a significant effect on the epidemic. It is difficult to change risky sex behaviour after behaviour patterns have been established. So the potential for long-term and lasting change may be greatest in this age group, especially among young men. The groups selected for this survey were both in-school and out-of-school youth. However, out-of-school youth were usually hard to reach with HIV interventions. Many were unemployed and idle—factors that may lead youth to engage in high-risk sex behaviour.

Both in-school (15–19 years) and out-of-school youth (15–19 and 20–24 years) were selected and interviewed. Students in forms 1–4 were interviewed at selected schools using proportional probability sampling. A nationwide teachers strike during 2002 delayed collecting data for the in-school youth survey until 2003. Single, unemployed or informally employed out-of-school youth were interviewed in enumeration areas.

3 Results

The results are presented in two parts:

- 1) Results and discussion based on key indicators in the following order:
 - Out-of-school youth
 - Female sex workers
 - Women in low-income settings
 - Matatu operators and bodaboda cyclists
 - Policemen and men in worksites
- 2) Quantitative results are presented in annexes 2a–3c by topic and group. They appear in the following order:
 - Sociodemographic characteristics, alcohol and drug use among out-of-school youth (annex 2a).
 - Knowledge of HIV/AIDS, sexually transmitted infections, and voluntary counseling and testing among out-of-school youth (annex 2b).
 - Sexual behaviour and condom use among out-of-school youth (annex 2c).
 - Demographics, alcohol and drug use among adult target groups (annex 3a).
 - Knowledge of HIV/AIDS, sexually transmitted infections, and voluntary counseling and testing among adult target groups (annex 3b).
 - Sex behaviour and condom use among adult target groups (annex 3c).

Out-of-school youth (aged 15–24 years)

DEMOGRAPHICS

This national HIV/AIDS and STI behavioural surveillance survey interviewed 6125 unmarried male (47%) and female (53%) out-of-school youth aged 15–24 years from all eight provinces of Kenya (Nairobi, Central, Coast, Eastern, North Eastern, Nyanza, Rift Valley, Western). The mean age of out-of-school youth was 19.1 years (19.5 years male, 18.8 years female); 93% of the group had attended school. Though slightly more male (95%) than female (90%) youth had attended school, the proportions completing primary (29% male, 30% female), secondary (24% male, 22% female) and post-secondary (1% male, 1% female) schooling, were similar. Most (79%) out-of-school youth were Christians (78% male, 80% female), primarily Protestant and Roman Catholic.

Most out-of-school youth resided permanently at the locations where they were interviewed. On average, youth had lived in the same place for 12.1 years (13.0 years male, 11.6 years female). Most (88%) youth reported they lived with relatives.

Close to half of out-of-school youth (45%) worked to earn money for themselves with more male (59%) than female (33%) youth working to earn a living. Most male youth earned their living as *shamba* (farm) workers, while most female youth

earned their living as either domestic workers or hawkers, buying and selling goods. Their average total personal weekly income was about KES 773, with males bringing in more income (KES 862) than females (KES 630). More than one-third (37%) of the youth supported an average of two adults and two children, with more male (41%) than female (33%) youth providing support.

ALCOHOL AND DRUG USE

About 14% of out-of-school youth reported they had consumed alcohol in the last four weeks. Twice as many male (21%) as female (8%) youth consumed alcohol during that period. Three times as many male youth (16%) as female youth (5%) reported consuming alcohol at least once a week. They also reported trying out different drugs; 11% reported using khat and 5% reported using bhang, especially the male youth (see annex 2a). Much smaller percentages of out-of-school youth reported ever using any other drugs.

KNOWLEDGE AND ATTITUDES ABOUT SEXUALLY TRANSMITTED INFECTIONS AND HIV/AIDS

Almost every out-of-school youth had heard about HIV/AIDS (98%). More than half (56.8%; 59% male, 53% female) had no misconceptions about AIDS transmission. About half of out-of-school youth (48%; 52% male, 43% female) were aware of HIV/AIDS prevention methods. Nearly one third of out-of-school boys (34%) and girls (28%) had a comprehensive knowledge about AIDS and could correctly identify abstinence, using condoms and limiting sex to one faithful, uninfected partner as ways to prevent the sexual transmission of HIV; they also rejected the three most common local misconceptions about HIV transmission (see fig. 1 and annex 2b).

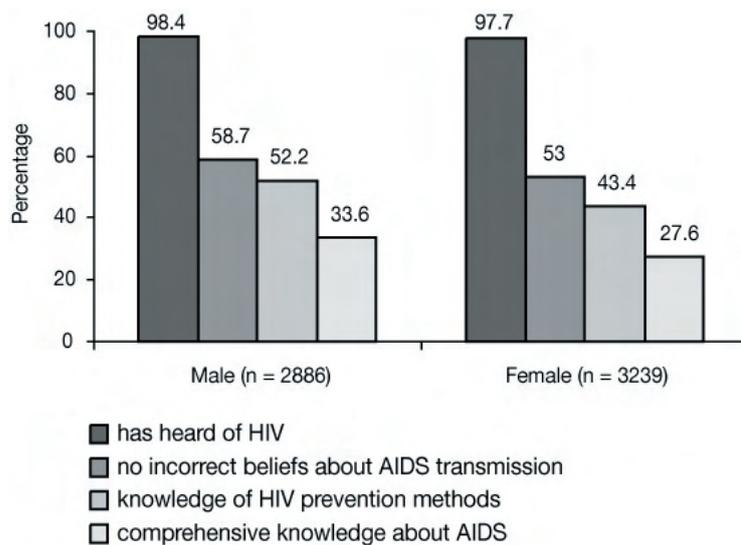


Figure 1. Knowledge and beliefs about HIV/AIDS among out-of-school youth, by sex.

Stigma and discrimination against people living with HIV/AIDS was quite common among out-of-school youth. Most expressed at least one

stigmatizing or discriminating attitude towards people living with AIDS. As shown in figure 2, 20% of male and 17% of female out-of-school youth demonstrated strong accepting attitudes towards people with AIDS.

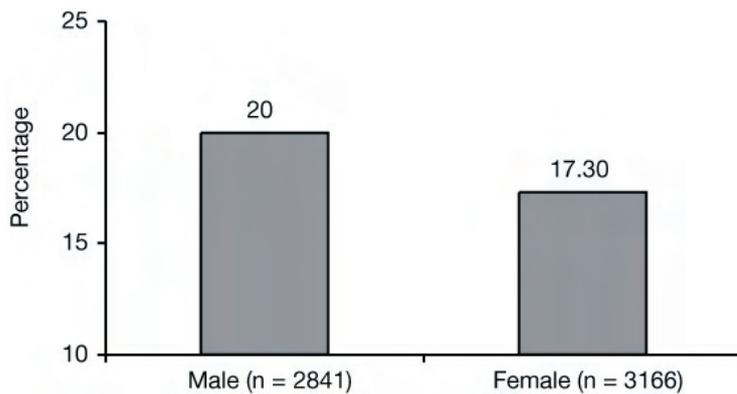


Figure 2. Accepting attitudes towards people living with HIV/AIDS among out-of-school youth, by sex.

Most out-of-school youth reported willingness to care for either a male (85%) or a female (84%) relative

sick with HIV/AIDS. In addition, 61% said they would not want it kept a secret if a family member became sick with HIV/AIDS. Slightly more male (64%) than female (58%) youth expressed this attitude (see annex 2b).

As shown in annex 2b, most out-of-school youth (91%) had heard about sexually transmitted infections, but their knowledge of the symptoms was relatively poor. Between 12% and 42% of male youth could spontaneously identify specific symptoms in men and between 9% and 16% of female youth could spontaneously identify common female symptoms (see annex 2b). Both male and female youth age 20–24 years had higher knowledge of sexually transmitted infection symptoms than their counterparts aged 15–19 years old. The prevalence of infection symptoms in the last 12 months was low. Only 5% of out-of-school youth reported having had abnormal discharge or genital ulcer or sores in the last 12 months.

KNOWLEDGE ABOUT MALE CONDOMS

A high proportion of out-of-school youth had heard of or seen a male condom (92%). However, only 43% of the youth had heard about female condoms, with more male (50%) than female (37%) youth reporting knowing about them (see annexes 2b and 2c). Although their knowledge of someone infected with or someone who had died of HIV/AIDS was high (65%), only one-third of all youth (35%) had a close friend or relative who had HIV or had died of AIDS (see annex 2b).

SEX BEHAVIOUR

Ever had sex. As shown in figure 3, about two-thirds of out-of-school youth (65%) reported they had ever had sexual intercourse, with the proportion higher for males (75%) than females (55%).

Among the out-of-school youth who reported ever having sex, 21% used a condom at first sex, with the higher proportion of females (27%) than males (17%) using one. Figure 3 summarizes the sexual debut among out-of-school youth, showing that more males than females had ever had sex and that among those who had had sex, the proportion of condom use at first sex was a little higher in females than males.

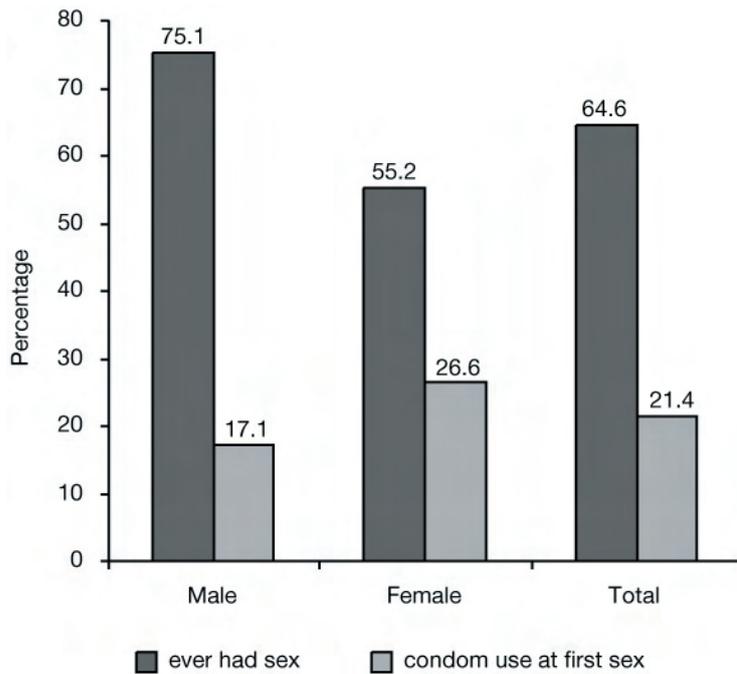


Figure 3. Sex and condom use at first sex among out-of-school youth, by sex.

When asked whether they had ever had sex in return for a gift or favour, few out-of-school youth who reported ever having had sex (9%) confirmed that they indeed had had sex for a gift or favour (7% male, 12% female) (see annex 2c).

One-third of female out-of-school youth reported ever being

pregnant and ever giving birth. Younger females (15–19 years) were equally as likely as the older ones (20–24 years) to report pregnancy or birth. Only 12% of male out-of-school youth reported ever fathering a child.

Table 2 shows that the mean age at first sex for out-of-school youth was 15.7 years (15.3 years male, 16.2 years female). Among those aged 15–19, the mean age at first sex was 15 years (14.5 years male, 15.5 years female) and among those aged 20–24, the mean age at first sex was 16.5 years (16.0 years male, 17.1 years female). The mean age of the first sex partner was 14.6 years for male youth and 19.4 years for female youth. On average, female youth tended to have their first sex with partners a few years older than themselves, while male youth tended to do so with partners of similar age or slightly younger (see table 3). The most common reason for first sex by both male (58%) and female (36%) youth was personal desire or curiosity. Males (12%) were more likely than females (5%) to cite this reason and peer pressure, whereas females were more likely than males to state other reasons: it just happened (18% female, 12% male), to prove love (16% female, 9.6% male), partner pressure (9% female, 3% male), trickery (5% female, 1% male) and threat or force (4% female, 0% male).

Table 2. Mean age of out-of-school youth and partner at first sex, by sex and age group

	Mean age at first sex	Mean age of partner at first sex
<i>Males</i>	15.3	14.6
15–19 years old	14.5	14.3
20–24 years old	16.0	15.0
<i>Females</i>	16.2	19.4
15–19 years old	15.5	18.7
20–24 years old	17.1	20.2

Sex in the last 12 months. Almost 6 in 10 out-of-school youth (58%) who reported ever having sex had been sexually active in the last 12 months, with more male (60%) than female (55%) youth sexually active. Further analyses showed a similar proportion of male (57%) and female (55%) out-of-school youth aged 15–19 had been sexually active in the last 12 months. However, more male (63%) than female (55%) youth aged 20–24 had been sexually active in the same period. Stated differently, 35% of all out-of-school youth had never had sex, and 43% of the youth who had ever had sex had not been sexually active in the last 12 months (see annex 2c).

Sexually active youth are defined as those who had sex in the last 12 months. The large majority (95%) of sexually active out-of-school youth reported they had had sex with a non-commercial partner in the last 12 months (95% male, 95% female), whereas a much smaller proportion (12%) reported they had had sex with a commercial partner in this period (13% male, 11% female) (see table 2). Almost two-thirds (65%) (data not presented) of the youth who had non-commercial sex reported having only one such partner (54.5% male, 80% female). About half (48%) of those who had commercial sex reported having only one such partner (41% male, 60% female) (see annex 2c).

Abstinence may be defined as never having had sex in one’s lifetime, or as having abstained from sex in a recent time period, for example 12 months. Faithfulness in adults is often defined as having only one marital or cohabiting partner in some recent time period. Since youth are defined by their non-marital, non-cohabiting status, this definition does not work well for this population. Instead, one might consider those youth who had only one non-commercial partner in the last 12 months as ‘faithful’. Figure 4 presents a summary of sex behaviour among all out-of-school youth, by sex. The figure shows that females who were sexually active in the last 12 months were more likely than males to have only one non-commercial partner. Males were more likely to have two or more non-commercial sex partners and more likely to have at least one commercial sex partner. In all, 23% of all out-of-school males and 8% of all out-of-school females engaged in this higher-risk behaviour in the 12 months before the survey.

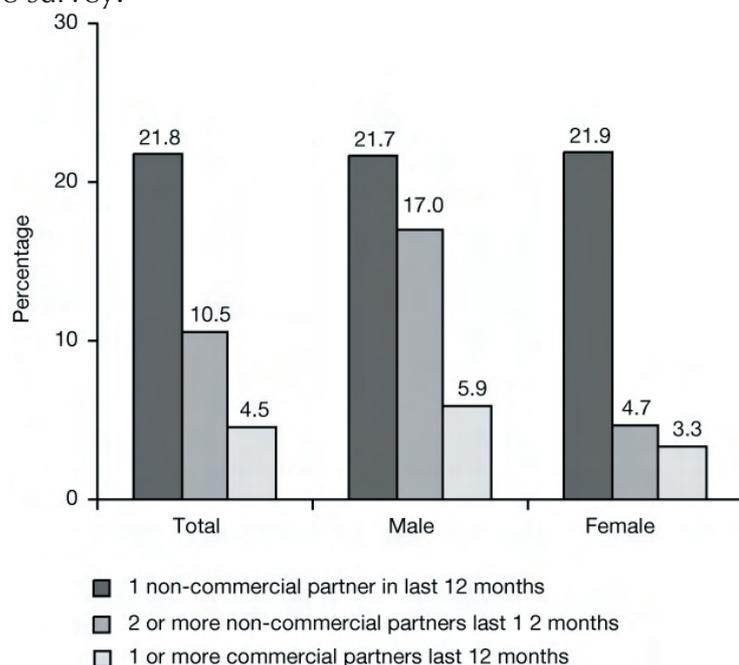


Figure 4.: Sex behaviour among out-of-school youth, by sex.

Condom use in the last 12 months. Among out-of-school youth who had sex with a non-commercial partner, 41% reported using a condom at last sex with the partner (42% male, 39% female, see figs. 5, 6). The majority (62%) said that they

were responsible for suggesting using a condom during that sexual encounter (see annex 2c). Among those who did not use a condom at last sex, trust of the partner (48%) was the most common reason given for not doing so, followed by the respondent's dislike of condoms (13%). Nearly one-fourth of out-of-school youth (23%) consistently used condoms with non-commercial partners over the past 12 months (24.5% male, 22% female). Close to half the youth (48%) had never used a condom with a non-commercial partner in the last 12 months (45.5% male, 50% female).

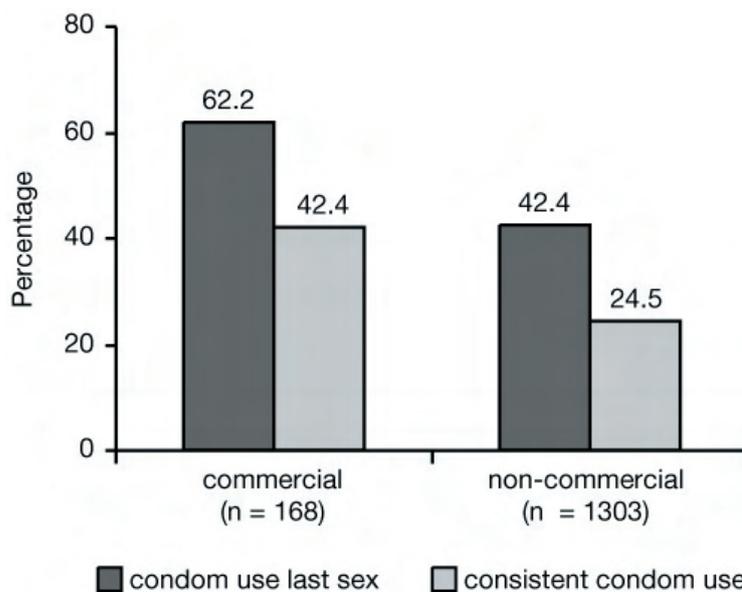


Figure 5. Condom use in the last 12 months among male out-of-school youth, by partner type.

Among out-of-school youth who had had sex with a commercial partner in the last 12 months, more than half (57%) reported using a condom (62% male, 43% female). Nearly three-quarters of these (72%) said they were

responsible for suggesting using the condom during the last sex with a commercial partner (see annex 2c). Among those who did not use a condom, unavailability of condoms (20%) was the most common reason given. Other reasons were that the respondent did not think a condom was necessary (15%), the respondent did not think of a condom at the time (12%), or the partner objected to using a condom (13%).

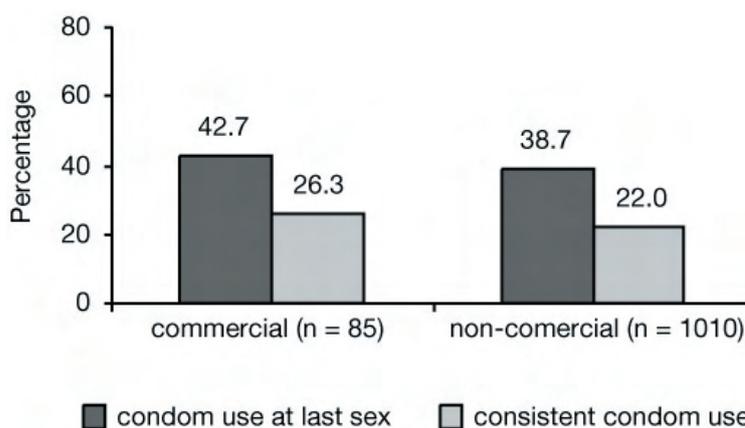


Figure 6. Condom use in the last 12 months among female out-of-school youth, by partner type.

Only 36% of out-of-school youth used condoms consistently with commercial partners over the last 12 months (42% male,

26% female). Close to one-third of the youth (31%) reported never using a condom with a commercial partner in that period (27.5% male, 37% female). Altogether, 78% of sexually active, out-of-school youth had engaged in unprotected sex with a non-commercial or commercial partner in the 12 months before the interview (76.5% male, 79% female) (see annex 2c).

Sex behaviour by age and religion. Figures 7 and 8 present a different look at sex behaviour among out-of-school youth by gender and age.

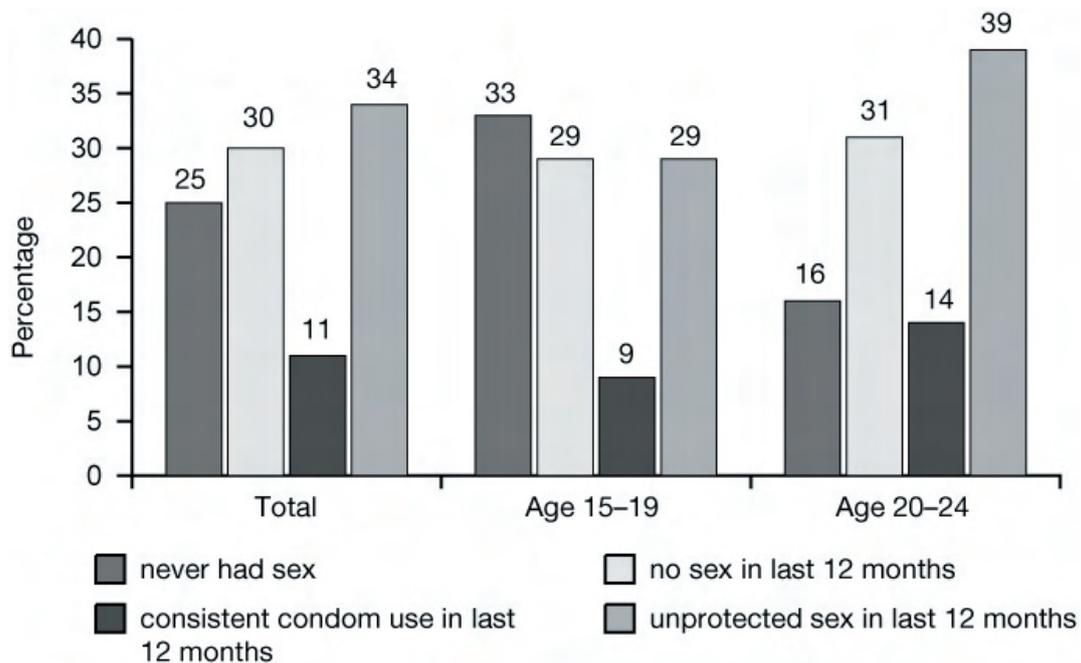


Figure 7. Sex behaviour among male out-of-school youth, by age.

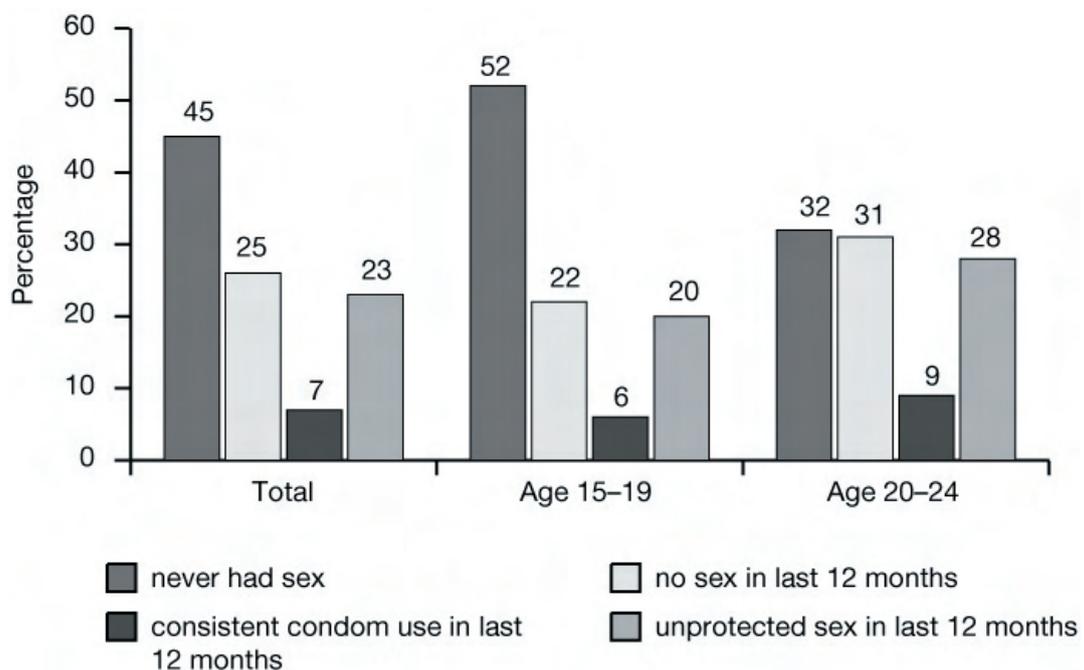


Figure 8. Sex behaviour among female out-of-school youth, by age.

Females were much more likely than males to exercise primary (no sex ever) or secondary abstinence (no sex in the last 12 months). Regardless of sex and age group, however, about three-quarters of all youth who had been sexually active in the last 12 months reported unprotected sex in that period. The remaining one-quarter of the youth who had been sexually active reported consistent condom use with all partners in the last 12 months. These patterns of sex behaviour and condom use suggest that differential HIV risk exposure arises more from different rates of primary and secondary abstinence than from different rates of condom use.

VOLUNTARY COUNSELING AND TESTING SERVICES AND HIV TESTS

Most out-of-school youth (86%) reported willingness to use voluntary counseling and testing services, if available, although only 23% (26% male, 20% female) knew of facilities in the area where they would go for an HIV test (see annex 2b).

Few out-of-school youth (12%) had ever been tested for HIV (see annex 2b). Fewer than one out of 10 out-of-school youth (9%) had ever voluntarily taken an HIV test (8% male, 9% female); 2% had been required to have the test done. In all, 11% of out-of-school youth (9.9% male, 12% female) had had an HIV test and found out the test result. Half of out-of-school youth who had had an HIV test received pre-test and post-test counseling, 29.7% received no counseling, and the remainder received only pre-test or only post-test counseling. Nearly all youth (93%) who had been tested for HIV received the test results.

Female sex workers

DEMOGRAPHICS

Annex 3a shows that 1754 female sex workers, age 15–49 years, were interviewed in this first round of the national behavioural surveillance survey in Central (Thika), Coast (Mombasa), Eastern (Machakos), Rift Valley (Nakuru) and Western (Kakamega) provinces of Kenya. The mean age of female sex workers was 27 years. Most (95%) had been to school, with 59% having primary education, 35% having attained secondary school and a few (1%) having higher education. Female sex workers were mainly Christians, predominantly Protestant (49%), and Roman Catholic (37%), but 11% were Muslims. Their mean age at first marriage was 18.5 years. Slightly more than half (52%—data not presented) had been married; 2% were currently married and living with a spouse; almost half had never been married.

Most female sex workers were temporary residents where they were interviewed. More than one-quarter (28%) had lived in the same village, neighbourhood, town or city all their lives. Only a few (9%) had lived in the same place less than a year. On average, sex workers had lived in the same place 11.5 years.

Slightly more than half of female sex workers (51%) were engaged in employment other than sex work. Among these, one-third (33%) were hawkers, nearly one-quarter (24%) were bar or hotel workers and 17% were hairdressers. More than three-quarters of female sex workers (79%) had dependants; the mean was one adult and two children.

ALCOHOL AND DRUG USE

Female sex workers drank alcohol regularly. More than three-quarters (78%) had consumed alcohol in the last four weeks, with 23% reporting daily consumption and another 44% reporting consuming alcohol at least once a week. Sex workers also reported that they had tried out drugs; 38% reported ever using khat and 19% ever using bhang (see annex 3a). Much smaller percentages of sex workers reported ever using any other drugs.

KNOWLEDGE AND ATTITUDES ABOUT SEXUALLY TRANSMITTED INFECTIONS AND HIV/AIDS

Table 3 shows that all female sex workers had heard about HIV/AIDS (99.9%). Most knew of someone infected with it or someone who had died of it (88%). Of these, more than three-quarters (77%) knew a close friend or relative with HIV or who had died of AIDS. Close to three-quarters (73%) were aware of HIV/AIDS prevention methods and 60% had no misconceptions about AIDS transmission (see table 3).

Table 3. Behavioural surveillance survey indicators for female sex workers

Indicator	Number	Percentage
Has heard about HIV	1752/1754	99.9
Knowledge of HIV prevention methods	1272/1754	72.6
No incorrect beliefs about AIDS transmission	1053/1754	60.0
Comprehensive knowledge about AIDS	815/1754	46.5
Accepting attitudes towards people living with HIV/AIDS	495/1754	28.0 ^a
Sex with non-paying partner(s) in the last 7 days	797/1754	45.0
Condom use at last sex with a non-paying partner	404/797	51.0
Consistent (100%) condom use with non-paying partners over the past 12 months	275/797	34.5
Sex with paying client(s) in the last 7 days	1530/1754	87.0
Condom use at last sex with a paying client	1339/1530	87.5
Consistent (100%) condom use with paying clients over the last 30 days	1029/1530	67.0
Prevalence of STI symptoms in the last 12 months	142/1754	8.0
People seeking HIV tests	619/1754	35.0

^a Excludes stigma and discrimination question Q819: 'If a colleague or fellow sex worker has HIV but is not sick, should she be allowed to continue working?' for ethical reasons.

Most female sex workers reported willingness to care for a male (87%) or a female (89%) relative sick with HIV/AIDS. In addition, over half (55%) said they would not want it kept secret if a family member became sick with HIV/AIDS (see annex 3b).

Stigma and discrimination against people living with AIDS was quite common among female sex workers. Most expressed at least one stigmatizing or discriminating attitude. But, as shown in table 3, more than one-quarter of sex workers (28%) demonstrated strong accepting attitudes towards people living with AIDS (see fig. 9).

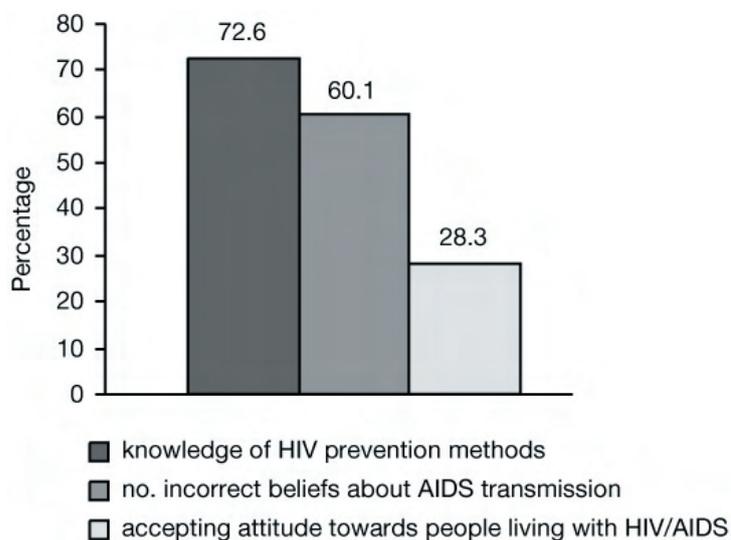


Figure 9. Knowledge, beliefs and attitudes about HIV/AIDS among female sex workers.

Nearly all female sex workers had heard about sexually transmitted infections (97%), with 26% to 53% spontaneously identifying abdominal pain, genital discharge,

itching, burning pain on urination, foul-smelling discharge, and genital ulcers or sores as symptoms in women. Among these women, 8% had had an abnormal discharge or genital ulcer or sores in the last 12 months. The relatively low prevalence of symptoms probably reflected under-reporting, as many sexually transmitted infections at their early stages are asymptomatic in women. It could also reflect the relative success of the sexually transmitted infection program for both treatment and behaviour change (see annex 3b).

KNOWLEDGE OF CONDOMS

Knowledge of male condoms was very high among female sex workers (99.8%). The female condom was not so well known, although close to two-thirds (65%) had heard about it (see annexes 3b and 3c).

SEX BEHAVIOUR

As would be expected, most female sex workers (91%) had had sexual intercourse with two or more sex partners within the last seven days. As table 3 shows, close to half (45%) reported having sex with at least one non-paying partner. Most (87%) had sex with at least one paying client in that period. Of the sex workers who had sex with non-paying partners, 83% reported having only one such partner; the remainder (17%) had two or more non-paying partners in that period. As expected, most (73%) of sex workers had at least two paying partners in the seven days before the survey. In the same time frame, about 10% of the sex workers had at least one and up to seven or more paying partners per day.

It is worth noting that more than two-thirds of female sex workers (69%) reported they had never had sex with a paying client without a condom. The amount of money sex workers received for sex during the last sexual encounter varied from KES 10 up to KES 25,050 (USD 0.13 to USD 334). The data show differences in the amounts of money received for having sex with or without a condom. Charges for sex without a condom were much higher than sex with a condom. On average, sex workers received KES 662 (USD 8.83) for sex without a condom and KES 488 (USD 6.51) for sex with a condom. Very few female sex workers (2%) reported never using condoms with paying clients.

CONDOM USE

More than half of female sex workers (51%) who had sex with a non-paying partner in the last seven days used a condom during the last sexual encounter with such a partner (see fig. 10). Most women (61%) said they were responsible for suggesting using a condom during last sex with a non-paying partner. About one-quarter (26%) said it was a joint decision (see annex 3c). Among those who did not use condoms with non-paying partners, trust of the partner (71%) and partner's objection (25%) were the most common reasons. Only one-third of female sex workers (35%) consistently used condoms with non-paying partners the last 12 months.

Condom use among female sex workers with paying clients was higher than with non-paying partners (see fig. 10). Nearly 9 in 10 (88%) reported using a condom during last sex with a paying client. Three-quarters (75%) said they were responsible for suggesting its use, while 15% said it was a joint decision (see annex 3c). Of those who did not use a condom, partner's objection (44%) was the most common reason given. Trust of the partner (36%) was another common reason. More than two-thirds of female sex workers (67%) reported consistently using condoms with paying clients in the last 30 days. Only 4% reported never using a condom with a paying client in that period.

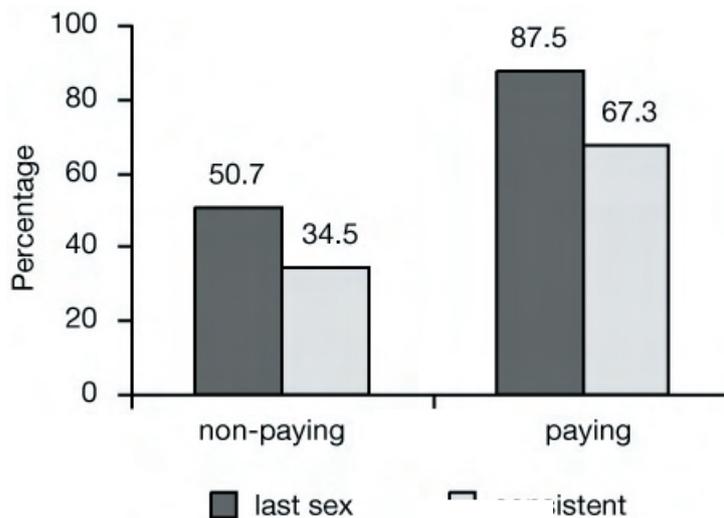


Figure 10. Condom use in the last 12 months among female sex workers, by partner type.

VOLUNTARY COUNSELING AND TESTING AND HIV TESTS

More than three-quarters of female sex workers (78%) reported willingness to use voluntary counseling

and testing services, if available, though only 40% knew of facilities in the area where they could go for an HIV test (see annex 3b). More than one-third (35%) said they had ever been tested for HIV. For 28% the test was voluntary, 8% had been required to take the test, and 35% found out the test result. Not all female sex workers taking an HIV test received pre-test and post-test counseling; 58% had received both pre-test and post-test counseling, but 26% had received neither (see annex 3b). Most sex workers who had been tested for HIV received their test results (93%).

Women in low-income settings

DEMOGRAPHICS

This survey interviewed 2112 women, aged 15–49 years, living in low-income settings in Coast (Mombasa), Rift Valley (Nakuru) and Western (Kakamega, Busia, Butere/Mumias, Bungoma) provinces of Kenya. The mean age of these women was 32.2 years. About 90% had been to school. About half (52%) had primary education, 32% secondary school and 3% attained higher education. Women in low-income settings were mainly Christians, predominantly Protestant (57%) and Roman Catholic (24%), and 17% were Muslims. Ninety-eight per cent had ever had sex. The mean age at first sex was 17.4 years. More than three-quarters were currently married and either lived with a spouse (71%), another sex partner (1%) or alone (5%). The rest were not married and living alone (21%) or cohabiting (2%) (see annex 3c).

Most women in low-income settings lived where they were interviewed; 7% had lived in this place less than one year, while 12% had lived in the same village, neighbourhood, town or city all their lives. On average, these women had lived in the same place 11.8 years.

Though close to half these women (46%) were unemployed, the main source of income for those in employment was hawking, and buying and selling goods (22%). Their mean weekly income was KES 1185. Most (79%) provided support to an average of two adults and three children.

ALCOHOL AND DRUG USE

Very few women in low-income settings drank alcohol—only 7% reported consuming alcohol at least once a week in the last four weeks. Very few women in low-income settings ever tried different drugs. Use of khat (5%) and bhang (1%) was most common. Much smaller percentages ever used any other drugs (see annex 3a).

KNOWLEDGE AND ATTITUDES ABOUT SEXUALLY TRANSMITTED INFECTIONS AND HIV/AIDS

Nearly all women in low-income settings had heard of HIV/AIDS (99%). Their knowledge of someone infected with HIV or someone who had died of AIDS was also high (84%). More than half (59%) were aware of HIV/AIDS prevention methods and a similar proportion (60%) had no misconceptions about AIDS transmission (see table 4).

Table 4. Behavioural surveillance survey indicators for women in low-income settings, Kenya 2002

Indicator	Number	Percentage
Knowledge of HIV prevention methods	1217/2112	57.6
No incorrect beliefs about AIDS transmission	1272/2112	60.0
Comprehensive knowledge about AIDS	808/2112	38.0
Accepting attitudes towards people living with HIV/AIDS	530/2112	25.0
Sex with non-regular sexual partner(s) in the last 12 months	219/1811	12.0
Condom use at last sex with a non-regular sexual partner	87/219	39.7
Consistent (100%) condom use with non-regular partners over the last 12 months	74/219	33.8
Sex with paying clients(s) in the last 12 months	42/1811	2.0
Condom use at last sex with paying client	36/48 ^a	75.0 ^a
Consistent (100%) condom use paying clients over the last 12 months	30/48 ^a	62.5 ^a
Unprotected sex with a higher-risk partner in the last 12 months	138/1811	7.6
Prevalence of STI symptoms in the last 12 months	61/1811	3.0
People seeking HIV tests	355/2112	17.0

^a Sample size extremely small; data should be interpreted with caution.

Most women in low-income settings reported willingness to care for a male (93%) or a female (91.7%) relative sick with HIV/AIDS without discrimination. In addition, about two-thirds (64%) said they would not want it kept secret if a family member became sick with HIV/AIDS. Stigma and discrimination against

people living with AIDS was common among women in low-income settings. Most expressed at least one stigmatizing or discriminating attitude towards people with AIDS. According to table 4, only a quarter (25%) demonstrated strong accepting attitudes towards people with AIDS (see fig. 11).

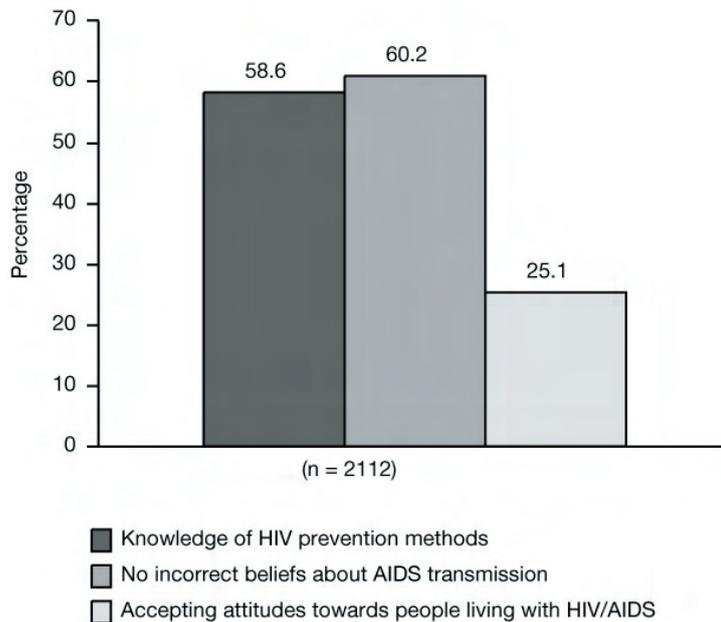


Figure 11. Knowledge, beliefs and attitudes about HIV/AIDS among women in low-income settings.

Nearly all women in low-income settings (96%) had heard about sexually transmitted infections, with 16% to 36% spontaneously identifying abdominal pain, genital discharge, burning pain on urination, and itching as symptoms in women

(see annex 3b). However, the prevalence of symptoms was low. Only 3% had an abnormal discharge or genital ulcer or sore in the last 12 months.

KNOWLEDGE OF CONDOMS

Most women in low-income settings had heard about male condoms (96%). However, only 39% had heard about female condoms (see annexes 3b and 3c).

SEX BEHAVIOUR

Most (98%) women in low-income settings had ever had sex. Of these, most (87%) had had sexual intercourse in the last 12 months. Among the sexually active women, the overwhelming majority (89%) had a regular partner, and of those 99% had only one. Among the sexually active women, only a small proportion (12%) reported sex with a non-regular, non-paying partner in the last 12 months. Of these, most (83%) had only one such partner. The remainder (17%) had two or more non-regular, non-paying partners. Among the sexually active women, few (2%) had sex in exchange for money in the last 12 months (see table 4). Of those who reported having sex with a paying client, 42% had one. The remainder (58%) had two or more paying partners.

Figure 12 presents a summary of sex behaviour for women in low-income settings, by age group, marital status and alcohol use. All women were divided into three categories of sex behaviour: no sex, sex with regular partners only, and sex that included at least one non-regular or paying partner. Regular alcohol use was defined as drinking alcohol at least once a week. Marital status was divided into unmarried (not married and not cohabiting) or married (married or cohabiting). As expected, there

were substantial differences in sex behaviour by marital status. Women who were unmarried and not cohabiting were more likely to have had no partners in the last 12 months. But if sexually active, these women were more likely than married women to have higher-risk sex partners. Risk behaviour tended to cluster; women who regularly drank alcohol were more likely to have higher-risk partners. This factor is important for HIV prevention programs to address. People tend to meet new sex partners at places where alcohol is commonly consumed, and condoms are less likely to be used properly and consistently when sex occurs under the influence of alcohol.

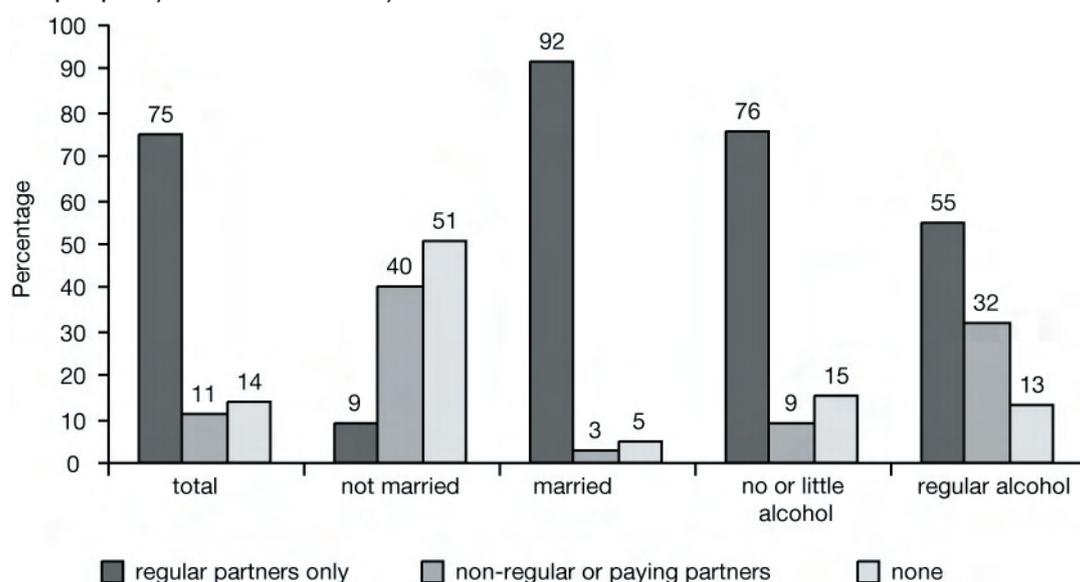


Figure 12. Sex behaviour among women in low-income settings, by age, marital status and alcohol use.

CONDOM USE

Women in low-income settings rarely used condoms with regular partners, somewhat with non-regular partners, and most with paying partners. Only 6% reported used condoms at last sex with their regular partner. Only 2% reported consistent use with this partner over the last 12 months. Among women who reported sex with a non-regular, non-paying partner in the last 12 months, 39.7% used condoms at the last sex with such a partner. The majority (62%) said they were responsible for suggesting using a condom during the last sex with such a partner, while close to a third (31%) said it was a joint decision (see annex 3c). For those who did not use condoms with non-regular, non-paying partners, trust of the partner (61%) and partner’s objection (21%) were the most common reasons.

Only one-third of women in low-income settings (34%) had consistently used condoms with non-regular, non-paying partners over the past 12 months. A large proportion of women in low-income settings (45%) reported never using a condom with a non-regular, non-paying partner in that period.

Most (75%) of the very few women in low-income settings having sex with paying clients used condoms with such partners during the last sexual encounter and most (63%) had consistently used condoms with paying clients over the past 12 months. However, because the sample size of women reporting sex with

paying clients in the last 12 months was small ($n = 48$), the findings presented in figure 13 on condom use at last sex and consistent condom use with paying clients should be interpreted with caution because of the wide (95%) confidence interval (see annex 3c).

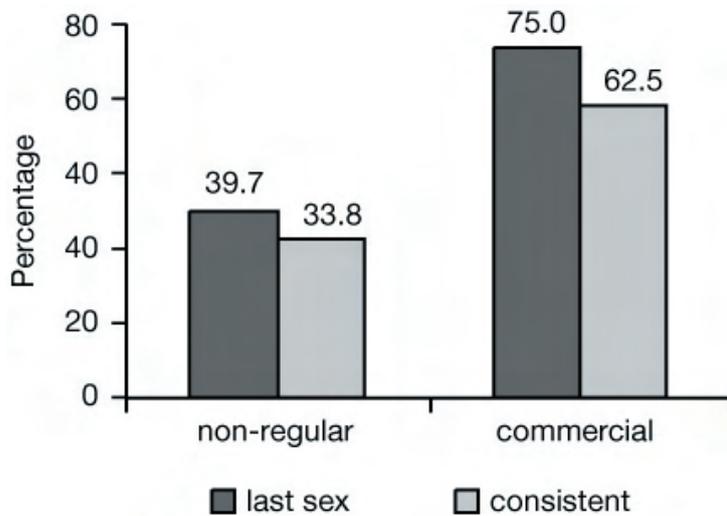


Figure 13. Condom use in the last 12 months among women in low-income settings, by partner type.

Among sexually active women, unprotected sex with non-regular, non-paying partners or paying clients without a condom was relatively low, 8%. These results indicate that regular partners were overwhelmingly

the most common sexual relationships, but condom use was rare. Risk exposure in these relationships thus depended heavily on the faithfulness of the woman and her partner. Extramarital sex was rare among these women, but the faithfulness of the male partners could not be assessed. Sex with non-regular and paying partners, although less common among women in low-income settings, was often accompanied by condom use, offering some, but not consistent, protection from HIV.

VOLUNTARY COUNSELING AND TESTING AND HIV TESTS

Close to three-quarters of women in low-income settings (73%) reported willingness to use voluntary counseling and testing services, if available, though only one-third (35%) knew where in the area to go for an HIV test (see annex 3b). Seventeen per cent of low-income women had ever been tested for HIV. The test was voluntary for 10%, while 7% had been requested to take it. Sixteen per cent had taken the test and found out the result (see annex 3b). Not all women in low-income settings taking an HIV test received pre-test and post-test counseling; 45% received both, but 39% received no counseling at all. Most who had been tested for HIV received their test results (93%).

Matatu operators and bodaboda cyclists

DEMOGRAPHICS

The survey interviewed 673 matatu or mini-van operators, aged 15–49 years: 323 drivers (48%) and 350 touts or helpers (52%) from Nairobi, Coast (Mombasa), Rift Valley (Nakuru), and Western (Kakamega) provinces, and 622 bodaboda or bicycle

taxi cyclists, aged 15–49 years, from Western (Busia) Province of Kenya. Matatu operators were older (mean age 29 years) than bodaboda cyclists (mean age 25 years). Matatu operators were also better educated with 56% having attained secondary and 2% higher education. Only 16% bodaboda cyclists had attained secondary education and none higher education. Religious affiliation and marital status were similar. Most matatu operators (81%) and bodaboda cyclists (94%) were Christians, primarily Protestant and Roman Catholic. About two-thirds of matatu operators and bodaboda cyclists reported having ever been married.

Most matatu operators and bodaboda cyclists were permanent residents at places they were interviewed. They reported that they had lived in the same village, neighbourhood, town or city a long time (12.2 years average for matatu operators, 14.8 years average for bodaboda cyclists). Most matatu operators lived either with their wives and families (50%) or alone (47%). Similarly, most bodaboda cyclists lived either with their wives and families (62%) or alone (35%). They had a fair amount of mobility, with more than one-quarter of matatu operators (28%) and bodaboda cyclists (26%) having been away from home for at least one month in the last year.

The mean income from matatus during a typical week was KES 2215, while the mean income from bodaboda cycling was much lower, KES 652. Most matatu operators (82%) and bodaboda cyclists (87%) provided support to an average of two adults and three children.

ALCOHOL AND DRUG USE

About 38% of matatu operators and 22% of bodaboda cyclists had drunk alcohol at least once or more a week in the last four weeks. They also tried drugs. In particular, 41% of matatu operators reported using khat and 25% used bhang. A few bodaboda cyclists also reported trying these drugs, with 11% using khat and 13% using bhang (see annex 3a). Much smaller percentages of the two groups reported having ever used any other drugs. Less than 1% of matatu operators and bodaboda cyclists had ever used heroin.

KNOWLEDGE AND ATTITUDES ABOUT SEXUALLY TRANSMITTED INFECTIONS AND HIV/AIDS

Nearly all matatu operators (99%) and bodaboda cyclists (99.8%) had heard about HIV/AIDS. Large proportions of both groups (88% matatu, 91% bodaboda) knew of someone infected with or someone who had died of HIV/AIDS. Among these, two-thirds of the matatu operators (67%) and three-quarters of the bodaboda cyclists (76%) knew a close friend or relative with HIV or who had died of AIDS. There was much room for improvement in knowledge of HIV prevention in both groups, although 49% of matatu operators and 58% of bodaboda cyclists were aware of the three main prevention methods. There was little difference between the two groups regarding misconceptions about AIDS transmission, with 61% of matatu operators and 58% of bodaboda cyclists having none of the common misconceptions (see table 5 and fig. 14).

Table 5. Behavioural surveillance survey Indicators for transport workers, Kenya 2002

Indicator	Matatu operators		Bodaboda cyclists	
	No.	%	No.	%
Knowledge of HIV prevention methods	330/673	49.0	360/622	57.9
No incorrect beliefs about AIDS transmission	409/673	61.0	355/622	57.0
Comprehensive knowledge about AIDS	220/673	32.7	232/622	37.0
Accepting attitude towards people living with HIV/AIDS	153/673	22.7	91/622	14.6
Sex with non-regular sexual partner(s) in the last 12 months	287/607	47.0	222/522	42.5
Condom use at last sex with a non-regular sexual partner	163/289	56.0	122/222	55.0
Consistent (100%) condom use with non-regular partners over the past 12 months	113/289	39.0	88/222	39.6
Sex with commercial sex worker(s) in the last 12 months	71/607	11.7	72/522	13.8
Condom use at last sex with a commercial sex worker	57/71 ^a	80.0	54/86 ^a	62.8
Consistent (100%) condom use with commercial sex workers over the past 12 months	50/79 ^a	63.0	43/86 ^a	50.0
Unprotected sex with a higher-risk partner in the past 12 months	131/607	21.6	106/522	20.0
Prevalence of STI symptoms in the last 12 months	34/607	5.6	39/522	7.5
People seeking HIV tests	158/669	23.6	150/621	24.0

^a Sample size extremely small; data should be interpreted with caution.

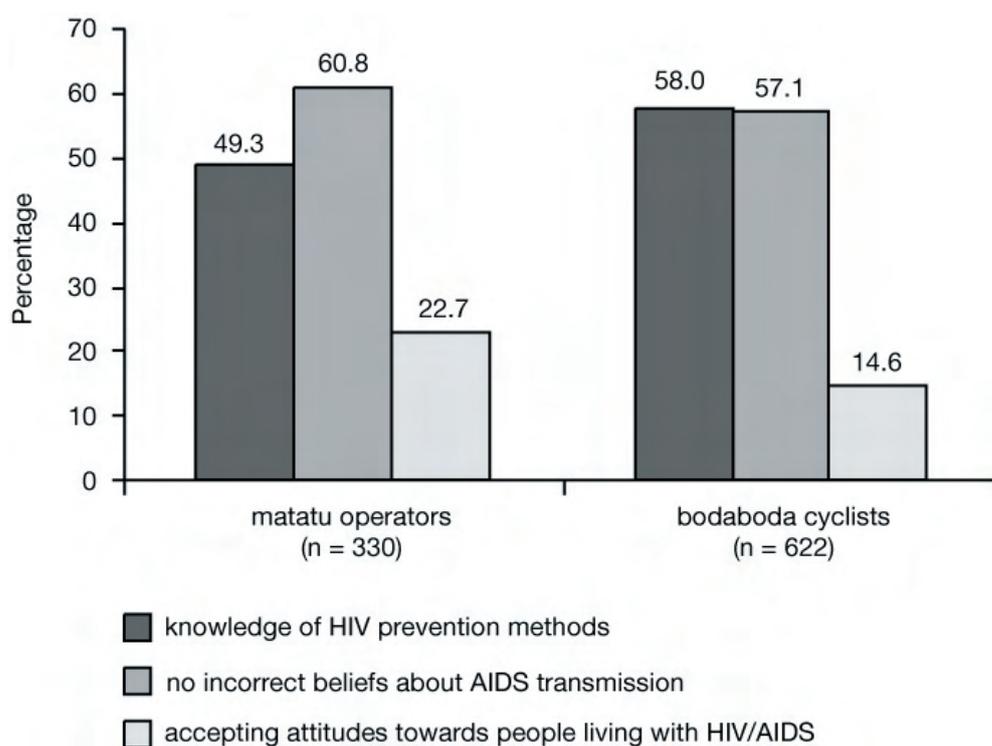


Figure 14. Knowledge, beliefs and attitudes about HIV/AIDS among transport workers.

Most matatu operators and bodaboda cyclists reported they were willing to care for a male (88% matatu, 92% bodaboda) or a female relative (92% matatu, 87% bodaboda) sick with HIV/AIDS without discrimination. In addition, 59% of matatu operators and 65% of bodaboda cyclists said they would not want it kept secret if a family member became sick with HIV/AIDS. Regardless of these attitudes, stigma and discrimination against people living with AIDS was common. Most

matatu operators and bodaboda cyclists expressed at least one stigmatizing or discriminating attitude towards people with AIDS. Only 23% of matatu operators and 15% of bodaboda cyclists demonstrated strong accepting attitudes towards people with AIDS (see table 5 and fig. 14).

Awareness of sexually transmitted infection was generally high, with 98% of matatu operators and 95% of bodaboda cyclists having ever heard of such infections. Between 17% and 52% of matatu operators were able to spontaneously identify genital discharge, burning pain on urination, genital ulcers or sores, and swelling in the groin as symptoms in men. The corresponding figures for bodaboda cyclists were between 21% and 46% (see annex 3b). However, the prevalence of sexually transmitted infection symptoms was low, which probably reflected under-reporting or the success of the government program dealing with sexually transmitted infections. Only 6% of matatu operators had an abnormal discharge or genital ulcer in the last 12 months. Bodaboda cyclists reported a slightly higher prevalence (8%) during the same period.

KNOWLEDGE OF CONDOMS

As in other groups, male condoms were widely known (99%) among both matatu operators and bodaboda cyclists. However, only 55% of matatu operators and 68% of bodaboda cyclists had heard about female condoms (see annexes 3b and 3c).

SEX BEHAVIOUR

Almost all matatu operators (98%) and bodaboda cyclists (96%) had ever had sex. Among those, most had had sex in the last 12 months (91.7% matatu, 87% bodaboda). The majority in both groups had regular partners in the last 12 months, and most of those had only one such partner. Among matatu operators who had had sex in the last 12 months, 75% did so with a regular partner and 93% of these had only one. Similarly, among bodaboda cyclists who had had sex in the last 12 months, 80% did so with a regular partner and 92% of these had only one.

Nearly half of matatu operators (48%) and 43% of bodaboda cyclists had had sex with a non-regular partner in the past 12 months. Among matatu operators who had sex with a non-regular partner, half (50%) had one such partner. The remainder (49.8%) had two or more such partners in that period. Among bodaboda cyclists who had had sex with a non-regular partner in the last 12 months, 41% had one such partner. The remainder (59%) had two or more.

A small proportion of matatu operators (11.7%) and bodaboda cyclists (14%) had had sex with a sex worker in the last 12 months. Among matatu operators who had sex with a sex worker, 29% had one. The remainder (71%) had two or more such partners in that period. As for bodaboda cyclists who had had sex with a sex worker in the last 12 months, a similar proportion (29%) had one such partner. The remainder (71%) had two or more.

Extramarital sex with non-regular partners was relatively common in both groups, but sex with commercial partners outside of marriage was less common. Married matatu operators (31%) and bodaboda cyclists (29%) reported extramarital sex with non-regular partners in the last 12 months. Married matatu operators (5%) and married bodaboda cyclists (12%) reported extramarital sex with sex workers in the last 12 months.

When asked if they had ever offered a free ride, *sare*, to anyone in exchange for sex, 22% of sexually active matatu operators and 18% of sexually active bodaboda cyclists did and had done so in the last four weeks. Among matatu operators who exchanged *sare* for sex, more than two-thirds (69%) had one such partner in the last four weeks; the remainder (32%) had two or more such partners. Among bodaboda cyclists who exchanged *sare* for sex, 60% had one such partner in the last four weeks; the remainder (39.6%) had two or more (see annex 3c).

CONDOM USE

Condom use with regular partners was very low, more common with non-regular partners, and higher with sex workers. Among the men who had regular partners, 6% of matatu operators and 8% of bodaboda cyclists used a condom at last sex, but very few (2% matatu, 2.9% bodaboda) used a condom consistently with this partner over the last 12 months. In contrast, more than half of matatu operators (56%) and bodaboda cyclists (55%) used a condom with a non-regular partner during last sex. The majority, 71% of matatu operators and 74% bodaboda cyclists, said they were responsible for suggesting using a condom during the last sex with a non-regular partner; 19.6% of matatu operators and 13% of bodaboda cyclists said it was a joint decision (see annex 3c). For those who did not use condoms with non-regular partners during the last sex, trust of the partner was the most common reason among matatu operators (68%) and bodaboda cyclists (58%).

Only 39% of matatu operators and 39.6% of bodaboda cyclists consistently used condoms with non-regular partners over the last 12 months. Nearly one-third of matatu operators (31%) and bodaboda cyclists (32%) never used a condom with a non-regular partner in that period. These findings indicate that matatu operators and bodaboda cyclists were not using condoms consistently with non-regular partners (see figs. 15 and 16). Among those men who had sex with sex workers in the last 12 months, four-fifths of matatu operators (72%) and three-quarters of bodaboda cyclists (75%) used a condom during the last sex. In addition, 63% of matatu operators and 60% of bodaboda cyclists used condoms consistently with sex workers the last 12 months. However, due to the small number of cases ($n = 79$ matatu, $n = 86$ bodaboda), these findings, as shown in figures 15 and 16, should be interpreted with caution due to the wide confidence interval (95%).

One-fifth of sexually active matatu operators (22%) and bodaboda cyclists (20%) had unprotected sex with at least one non-regular partner or sex worker in the last 12 months.

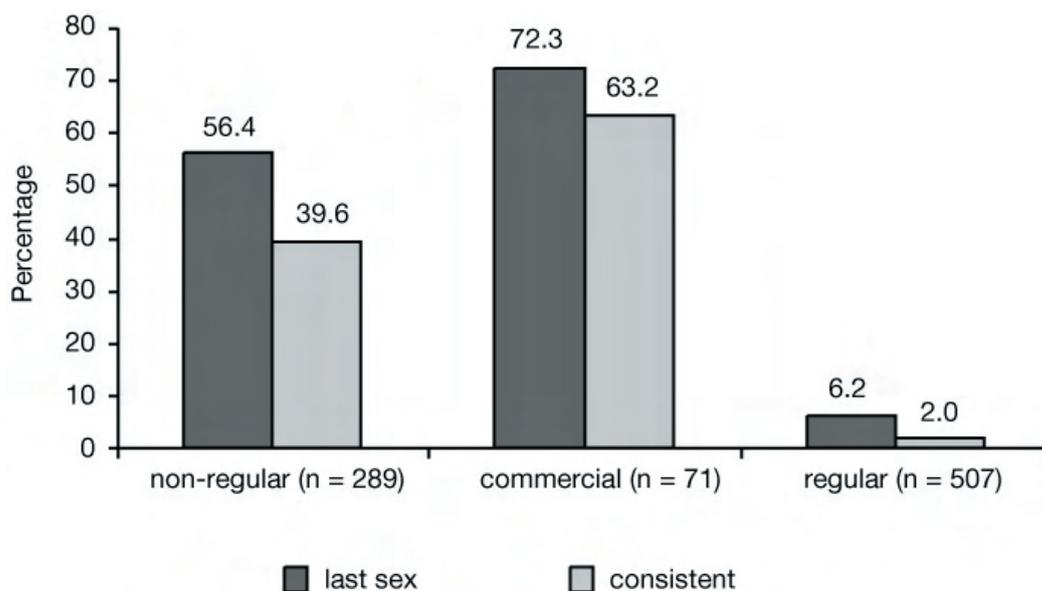


Figure 15. Condom use in the last 12 months among matatu operators by partner type.

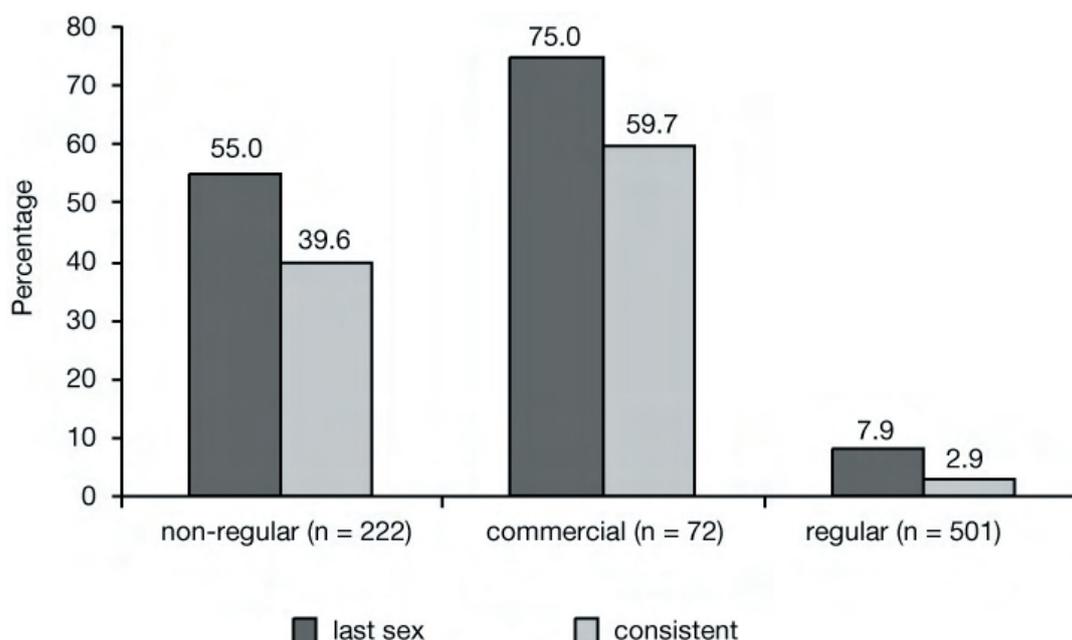


Figure 16. Condom use in the last 12 months among bodaboda cyclists, by partner type.

VOLUNTARY COUNSELING AND TESTING AND HIV TESTS

Nearly three-quarters of matatu operators (72%) reported willingness to use voluntary counseling and testing services, if available, but only 40% said they knew of these facilities in the area. Similarly, three in four bodaboda cyclists (76%) reported willingness to use voluntary counseling and testing services, if available, but again, only half (53%) knew of facilities in the area (see annex 3b). Slightly less than one-quarter of matatu operators (24%) had ever been tested for HIV: 17% voluntarily took the test, 6% were requested to do so, and 22% had the test and found out the test result.

A similar proportion of bodaboda cyclists (24%) had ever been tested for HIV: 19% were voluntary, 5% by requirement and 23% had the test and found out the

test result. Not all matatu operators and bodaboda cyclists who had an HIV test received pre-test and post-test counseling. Close to half of matatu operators (48%) and two-thirds of bodaboda cyclists (66%) received both pre-test and post-test counseling, but 35% of matatu operators and 12.7% of bodaboda cyclists received no counseling (see annex 3b). Most matatu operators (95%) and bodaboda cyclists (93%) who had ever been tested for HIV received their test results.

Policemen and men in worksites

DEMOGRAPHICS

The survey also interviewed 592 policemen, aged 20–49 years, from Nairobi, Coast (Mombasa), North Eastern (Garissa), Rift Valley (Nakuru), and Western (Kakamega) provinces, and 2120 men in worksites, aged 15–49 years, from Coast (Mombasa), Rift Valley (Nakuru), and Western (Butere–Mumias, Bungoma) provinces of Kenya. Their mean ages were 35 years for men in worksites and 34 years for policemen, the majority of whom were police constables in the Kenya Police Force. Men in worksites were mostly permanent employees (70%); the rest were casual workers for companies and organizations.

The policemen were much better educated than men in worksites. Most policemen attained secondary (89%) and some had higher education (5%). Men in worksites had less secondary education (57%) but more had higher education (18%). Most policemen (92%) and men in worksites (89%) were Christians, primarily Protestant and Roman Catholic. Most policemen (85%) and men in worksites (81%) were married, but only 36% of policemen lived with their spouses at the time of the interview, compared with 60% of men in worksites.

Mobility is a risk factor for HIV exposure. Both policemen and men in worksites were highly mobile. Most policemen were temporary residents where they were interviewed, whereas men in worksites were permanent residents. Though most policemen (81%) reported that they lived in the police estate, 21% had lived there for less than a year. On average, policemen lived in the same estate for 3.2 years. In comparison, men in worksites reported they had lived in the same village, neighbourhood, town or city for an average of 12.9 years. Policemen were more likely to live alone (48%) than with their families (37%). Close to half of policemen (45%) who were currently married but lived away from their families reported visiting their spouses or other sex partners at least once a month. Men in worksites were less likely to live alone (29.6%) than with their spouses and families (59%), but still about one in five (22%) reported being away from home for more than a month in the last year.

Monthly income was higher among men in worksites than among policemen. More than two-thirds of policemen (69%) earned between KES 2000 and KES 7999, and only 29% earned KES 8000 or more. In contrast, 42% of men in worksites fell in the lower income bracket and 56% in the higher one. Most policemen (95%) and men in worksites (91%) supported others; on average, policemen supported 2.9 adults and 3.2 children, while men in worksites supported 2.6 adults and 3.8 children.

More policemen than men in worksites drank alcohol regularly. More policemen (43%) than men in worksites (23%) consumed alcohol once or more a week in the last four weeks. They also reported trying out drugs. In particular, 28% of policemen used khat and 8% used bhang. Among men in worksites, 13% used khat and 8% used bhang (see annex 3a). Less than 1% of the two groups reported ever using any other drugs.

KNOWLEDGE AND ATTITUDES ABOUT SEXUALLY TRANSMITTED INFECTIONS AND HIV/AIDS

Virtually all policemen (99%) and men in worksites (99%) had heard about HIV/AIDS. Many (83% policemen, 91% men in worksites) knew someone infected with or someone who had died of HIV/AIDS. Of these, two-thirds of policemen (67%) and nearly three-quarters of men in worksites (74%) knew someone close with HIV or who had died of AIDS. In addition, 62% of policemen and 67% of men in worksites were aware of the three main HIV/AIDS prevention methods, and 68% of policemen and 74% of men in worksites had no misconceptions about AIDS transmission (see table 6).

Table 6. Behavioural surveillance survey indicators for other male workers, Kenya 2002

Indicators	Policemen		Men in worksites	
	No.	%	No.	%
Knowledge of HIV prevention methods	364/592	61.5	1426/2120	67.3
No incorrect beliefs about AIDS transmission	403/592	68.1	1569/2120	74.0
Comprehensive knowledge about AIDS	272/592	45.9	1118/2120	52.7
Accepting attitudes towards people living with HIV/AIDS	219/592	37.0	910/2120	43.0
Sex with non-regular sexual partners in the last 12 months	188/528	35.6	398/1916	20.8
Condom use at last sex with a non-regular sexual partner	129/188	68.6	229/398	57.5
Consistent 100% condom use with non-regular partners over the last 12 months	110/188	58.5	169/398	42.5
Sex with commercial sex workers in the last 12 months	33/528	6.0	75/1916	3.9
Condom use at last sex with a commercial sex worker	29/37 ^a	78.4	51/83 ^a	61.4
Consistent 100% condom use with commercial sex workers over the last 12 months	21/37 ^a	56.8	41/83 ^a	49.4
Unprotected sex with a higher-risk partner in the last 12 months	57/528	11.0	168/1916	8.8
Prevalence of STI symptoms in the last 12 months	18/568	3.2	36/1916	1.9
People seeking HIV tests	141/589	23.9	512/2120	24.3

^a Sample size extremely small; data should be interpreted with caution.

Most policemen and men in worksites reported willingness to care for a male (91% policemen, 94% men in worksites) or for a female (89% policemen, 94% men in worksites) relative sick with HIV/AIDS without discrimination. In addition, 65% of policemen and 73% of men in worksites said they would not want it kept secret if a family member became sick with HIV/AIDS. Despite this openness towards those in their families, stigma and discrimination against people with AIDS was quite common. Most policemen and men in worksites expressed at least one

stigmatizing or discriminating attitude towards people living with AIDS. As shown in table 6, fewer than half of the men demonstrated strong accepting attitudes towards people with AIDS. In all, 43% of men in worksites and 37% of policemen showed such attitudes (see fig. 17).

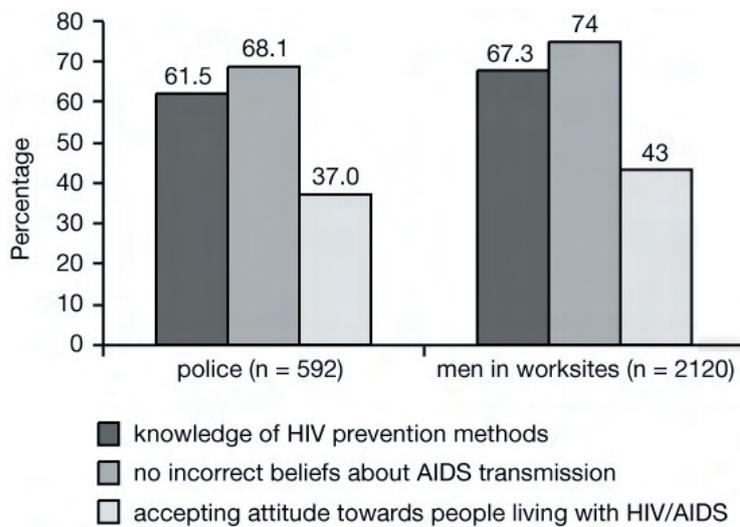


Figure 17. Knowledge, beliefs and attitudes about HIV/AIDS among other male workers.

Most policemen (96%) and men in worksites (98%) had heard about sexually transmitted infections; knowledge about the symptoms was relatively high as well.

Between 18% and 74% of policemen were able to spontaneously identify genital discharge, burning pain on urination, genital ulcers or sores, and swelling in the groin as symptoms. The corresponding figures for men in worksites were 17% and 60% (see annex 3b). Only 3% of policemen and 2% of men in worksites had an abnormal discharge or genital ulcer or sores in the last 12 months.

KNOWLEDGE OF CONDOMS

Among policemen (96%) and men in worksites (99%), knowledge of male condoms was almost as great as in other groups. However, only 62% of the police and 61% of men in worksites had heard about female condoms (see annexes 3b and 3c).

SEX BEHAVIOUR

Almost all policemen (99%) and men in worksites (98%) had ever had sex. Among these, most policemen (89.9%) and men in worksites (92%) had had sexual intercourse in the last 12 months. Most (90% policemen, 91% men in worksites) had a regular partner. Among those with regular partners most (92% policemen, 88% men in worksites) had only one.

More policemen than men in worksites had engaged in non-regular sexual relationships in the last 12 months. More than one-third of sexually active policemen (36%) and one in five sexually active men in worksites (21%) had sex with a non-regular partner during that period. The majority of policemen (73%) and men in worksites (71%) who had non-regular partners in the last 12 months had one such partner. The remainder of policemen (27%) and men in worksites (29%) had two or more.

Few policemen (6%) and fewer men in worksites (4%) had sex with sex workers in the last 12 months. Although a small proportion of policemen had commercial

sex, most who did had many partners. Among policemen who had sex with a sex worker, 23% had one such partner and the remainder (77%) had two or more. As for men in worksites who reported having had sex with a sex worker in the last 12 months, more than half (57%) had one such partner. The remainder (43%) had two or more.

Extramarital sex was common among these groups. Married policemen (29%) and married men in worksites (13%) had extramarital sex with non-regular partners in the last 12 months. Few married policemen (6%) or married men in worksites (2.8%) reported extramarital sex with sex workers in the last 12 months.

CONDOM USE

Many policemen (69%) and men in worksites (58%) who had sex with a non-regular sexual partner in the last 12 months used a condom at last sex (figs. 18,

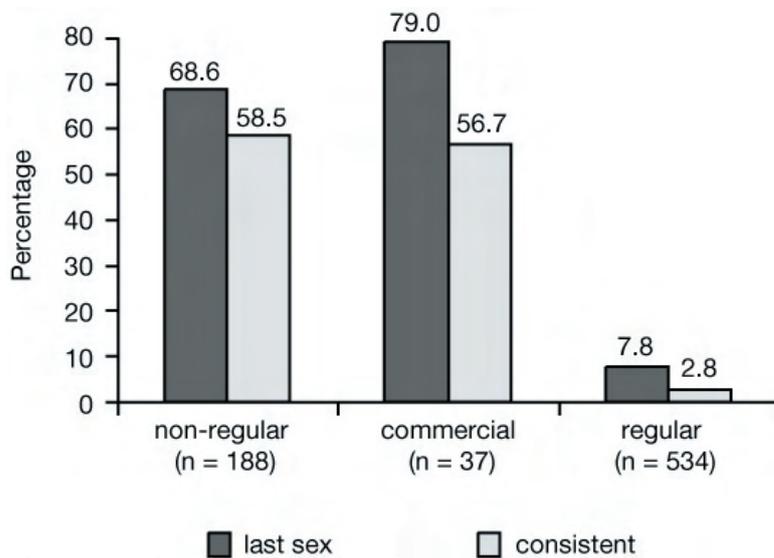


Figure 18. Condom use in the last 12 months among policemen, by partner type.

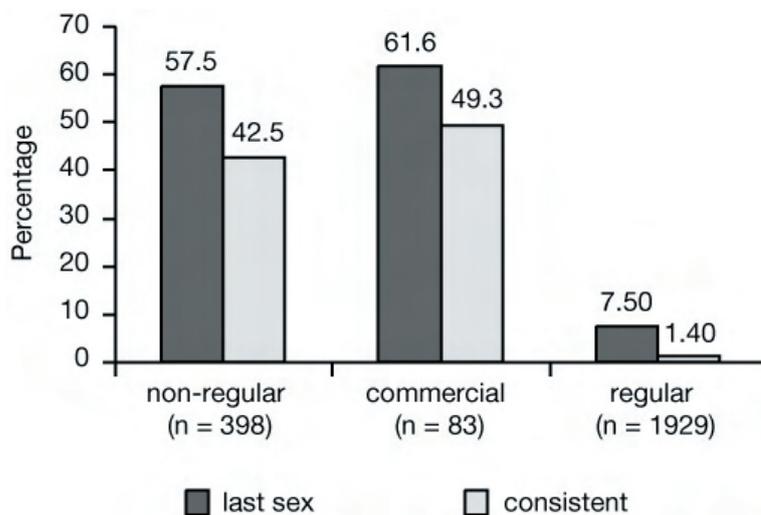


Figure 19. Condom use in the last 12 months among men in worksites, by partner type.

19). Most policemen (71%) and many men in worksites (64%) suggested condom use themselves during the last sex with a non-regular partner, while fewer policemen (23%) and men in worksites (29%) said it was a joint decision (see annex 3c). For those who did not use condoms with non-regular sex partners during the last sex, trust of the partner was the most common reason among policemen (59%) and men in worksites (33%), followed by dislike of condoms, cited mostly by men in worksites (27%). A higher proportion of policemen (59%) than men in worksites (43%) used condoms

consistently with non-regular partners over the last 12 months. Only 17% of policemen and 31% of men in worksites never used a condom with a non-regular partner in that period.

Among those who had sex with sex workers in the past 12 months, many policemen (79%) and men in worksites (62%) used a condom with such a partner during the last sex. In addition, 57% of policemen and 49% of men in worksites used condoms consistently with sex workers over the last 12 months. However, because of the small number of cases ($n = 37$ policemen, $n = 83$ men in worksites), these findings should be interpreted with caution due to the wide (95%) confidence interval (see annex 3c). In total, 11% of policemen and 9% of men in worksites had had unprotected sex with at least one non-regular partner or sex worker in the last 12 months.

VOLUNTARY COUNSELING AND TESTING AND HIV TESTS

Nearly three-quarters of policemen (73%) reported willingness to use voluntary counseling and testing services, if available, but only 48% said that they knew of voluntary counseling and testing facilities in the area where they could go for an HIV test. Similarly, more than three-quarters of men in worksites (79%) reported willingness to use these services, if available, but less than half (46%) knew of facilities in the area (see annex 3b).

Nearly one-quarter of policemen (24%) and men in worksites (24%) had ever been tested for HIV. Among policemen, 17% had tested voluntarily, 7% had been asked to take the test, and 23% took the test and found out the results. Among men in worksites, 17% had tested voluntarily, 8% had been asked to take it, and 22% took the test and found out the results. Among men in worksites who were tested for HIV, 68% reported the test was done voluntarily and 32% said it was required. Not all policemen and men in worksites having an HIV test received pre-test and post-test counseling. While 39% of policemen and 48% of men in work sites received pre-test and post-test counseling, a similar proportion of each group (40% policemen, 39% men in worksites) received no counseling (see annex 3b). Most policemen (95%) and men in worksites (89.6%) who had ever been tested for HIV received their test results.

SEX AMONG ADULT MEN

As figure 20 shows, casual sex was more common among unmarried men, but not uncommon among married men. The proportion of men married or cohabiting in each group varied: 82% of men in large worksites, 87% of policemen, 64% of matatu operators and 67% of bodaboda cyclists (see annex 3a). Married matatu operators and bodaboda cyclists were the most likely to have non-regular partners. The proportion of married men who had non-regular partners varied from 13% among men in large worksites to 33% among matatu drivers. The proportions of married men who had sex with commercial partners varied from 3% among men in large worksites to 13% among bodaboda operators. A

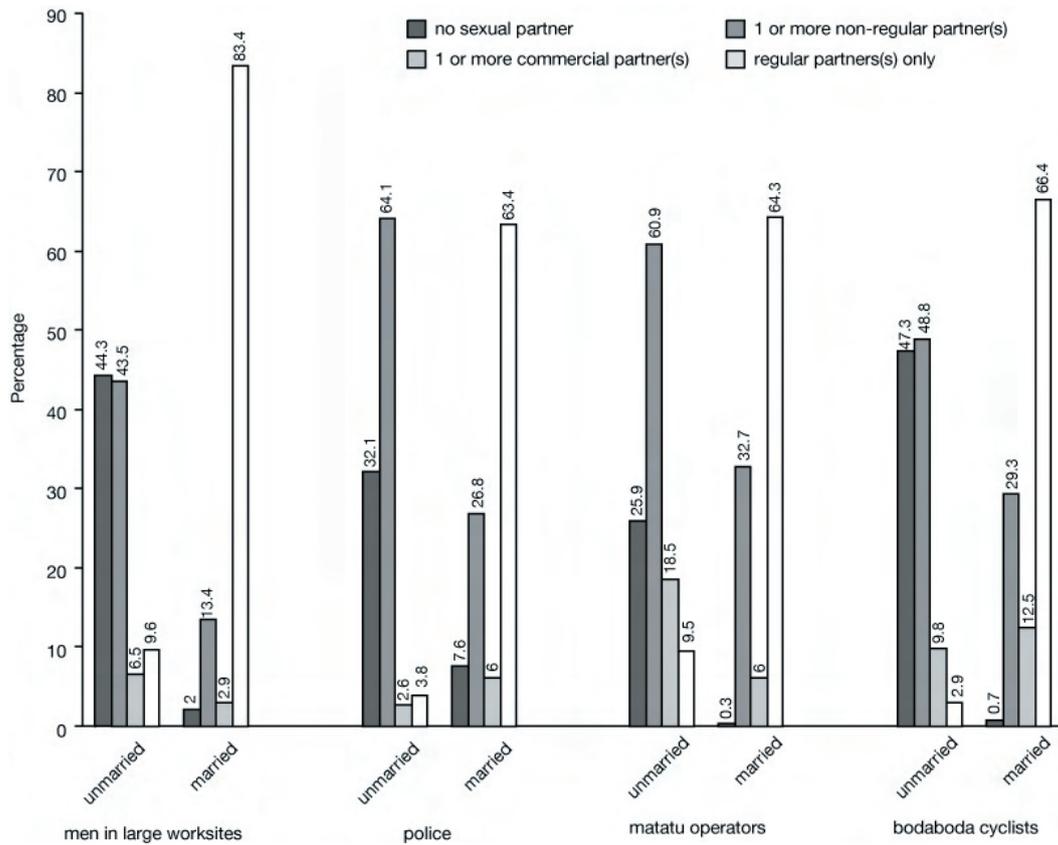


Figure 20. Sex behaviour among adult males, categorized by sexual partners.

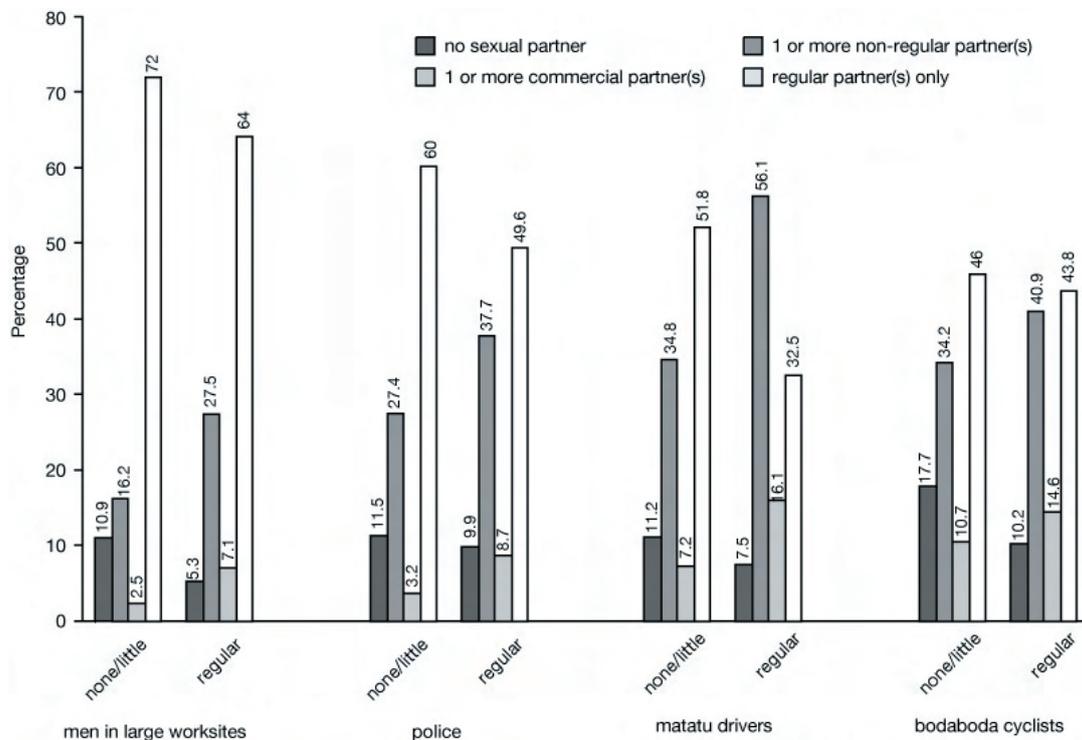


Figure 21. Sex behaviour among adult men, categorized by alcohol use.

substantial proportion of unmarried men in each group (8%) had no sex partners in the year before the survey, but the majority had non-regular or commercial partners.

An important correlate of risky sex was alcohol use. Regular alcohol use was defined as drinking alcohol once or more a week. Less than one-quarter of bodaboda cyclists (22%) and men in large worksites (23%) were regular drinkers, but more than one-third of matatu operators (38%) and almost half of police (47%) regularly consumed alcohol. The association of alcohol and higher risk sexual behaviour was demonstrated in each population (see fig. 21). Men who drank alcohol regularly were more likely to have non-regular and commercial partners. These results showed that bars, clubs and other places where alcohol was commonly consumed represent important intervention points for HIV prevention.

There was much room for improvement in condom use among all target populations. The practice of unprotected sex with non-regular or sex workers without a condom was prevalent. Unprotected sex with higher-risk partners in the last 12 months was most common among out-of-school youth and least common among women in low-income settings. Among out-of-school youth, condom use was very low at first sex and remained low with non-commercial sex partners. Although condom use at last sex with non-regular and commercial partners was relatively common among adults, consistent condom use was disappointingly low. As expected, condom use was more common with commercial than non-paying partners, but anything less than 100% condom use exposes sex partners to the risk of sexually transmitted diseases, including HIV/AIDS. Trust of a partner was the most common reason for not using a condom at last sex. The youth also mentioned dislike of condoms as a reason. This information could be used to improve HIV prevention messages.

Knowledge of voluntary counseling and testing sites in the community may serve as a proxy indicator of the availability of these services in the country. Most respondents in this behavioural surveillance survey reported willingness to use voluntary counseling and testing services, if available, but only about half the adult groups and about one-quarter of out-of-school youth knew of voluntary counseling and testing facilities in their area where they could go for an HIV test. Knowledge of one's HIV status is a powerful tool for behaviour change and helps reduce HIV risk behaviour, such as unprotected sex. Despite the crucial role that voluntary counseling and testing plays in preventing HIV infection, only small proportions of the target groups had ever had an HIV test. Moreover, many of the men and women who had received HIV tests did not receive adequate pre-test and post-test counseling, which are important to influence positive behaviour change.

4 Discussion and conclusions

The national behavioural surveillance survey in Kenya in 2002 documented HIV/AIDS knowledge, attitudes and behaviour in selected groups including youth, female sex workers and adult groups. A key benefit of the methodology was the standardized approach used to develop the questionnaire, construct the sample frame, and implement and analyse the survey. This survey thus represents an important achievement that future surveillance efforts in Kenya can build upon. The results of the behavioural surveillance survey should be recognized as a valuable national resource.

The 2002 behavioural surveillance survey showed that Kenyans were knowledgeable about HIV/AIDS, sexually transmitted infections and condoms, but that this knowledge had not translated into desirable behaviour. Substantial proportions of respondents reported having many sex partners, premarital sex was common among out-of-school youth, and condoms were not used consistently with higher risk partners. In the absence of a cure for HIV/AIDS, behaviour change remains the only way to keep the virus at bay. The ABCs of safe sex—abstaining from sex, being faithful to one uninfected sex partner and using condoms correctly and consistently—has now become a mantra among organizations promoting awareness of the disease and is the pillar upon which behaviour change is constructed.

Knowledge of HIV prevention methods was relatively high, especially among female sex workers, men in worksites and policemen. There was room for improvement in HIV/AIDS knowledge, but the results indicate that the majority of Kenyans, both young and old, had heard about HIV/AIDS, sexually transmitted infections and condoms. Their knowledge of someone infected with or someone who had died of HIV/AIDS was also high. Most knew a close friend or relative with HIV or who had died of AIDS. Also, most respondents reported no misconceptions about AIDS transmission, suggesting that there is hardly any Kenyan who can claim not to have been affected by AIDS in one way or the other—if not by being infected, by witnessing a friend, relative, neighbour, workmate, acquaintance or loved one suffer and die. Thus, the threat the disease poses to society is now all too evident.

Despite the high awareness of the disease, a significant number of sexually active respondents had non-regular and many sex contacts unabated. This persistent behaviour suggests that the heightened awareness of HIV/AIDS and sexually transmitted infection and knowledge of condoms and other HIV prevention methods were not translating into safe sex. Casual sex was very common among adult men, especially unmarried men.

Many out-of-school youth were sexually active and engaged in early and risky sex, which made them vulnerable to HIV infection, particularly given the high prevalence in the general population. Their knowledge of HIV prevention methods and someone, especially friends or relatives, infected with HIV or who had died of

AIDS, was also much lower than among those of the adult groups in this survey. Since many started engaging in sex at an early age, their chances being exposed to infection were increased. This risk was especially high among young women, who tended to have sex with older men.

Despite relatively high knowledge of HIV prevention methods and correct information about AIDS transmission, stigma and discrimination against people living with AIDS was widespread. This suggests that people infected and affected by HIV/AIDS are not well accepted or received in many Kenyan communities. Accepting attitudes towards people with AIDS were lowest among female youth and bodaboda cyclists. Such attitudes are likely to have a negative effect on care and support programs for people infected and affected by HIV/AIDS. Stigma may also pose an obstacle to behaviour change, if not addressed. Still, an optimistic finding was that the majority of respondents expressed willingness to care for a family member if he or she fell ill with HIV/AIDS. Many respondents also said if a family member became ill with HIV/AIDS, they would not want to it kept secret.

A significant number of Kenyan youth and adults suffered from sexually transmitted infections and many had large numbers of sex partners, which increased their vulnerability and exposure to HIV. In this behavioural surveillance survey, awareness of sexually transmitted infection was almost universal throughout the target groups, but knowledge of the symptoms was poor, especially among out-of-school youth. The prevalence of sexually transmitted infection symptoms was also low in all the groups. The low rate was probably due to a combination of under-reporting, asymptomatic infection in women, and success of the government program aimed to reduce sexually transmitted infections.

5 Recommendations

- ***Target special populations and high-risk places.*** The findings of this behavioural surveillance survey show there is urgent need to improve and intensify targeted HIV/AIDS prevention and care programs. These programs might target higher-risk populations and target places where higher-risk sex is common. For example, interventions for matatu operators and bodaboda cyclists could be implemented at bus terminals at times convenient to both these groups. Other interventions might focus on the link between alcohol and risky sex and target people frequenting bars and clubs.
- ***Support a coordinated information, education and behaviour change communication strategy.*** Even where knowledge is high, sex behaviour will probably not change dramatically as long as people harbour false beliefs or consider themselves immune from HIV/AIDS. Kenya needs a national strategy on information, education and behaviour-change communication with appropriate messages and strategies for the various target groups. The strategy should focus on promoting abstinence and faithfulness, reducing the number of sex partners, delaying the onset of sex among youth, promoting the proper use and consistent availability of condoms, strengthening programs for sexually transmitted infection control, and voluntary counseling and testing. The national information, education and behaviour-change strategy should reach out to target groups through HIV/AIDS prevention programs developed for those groups. A coordinated strategy that reaches out to different groups will help ensure that implementers speak with the same voice and avoid sending mixed messages. The most effective interventions would include a combination of mass media, drama, music, person-to-person interaction, peer education, life-skills training for the youth, counseling and education.
- ***Encourage correct, consistent condom use among high-risk populations.*** Perhaps the greatest challenge facing organizations promoting HIV/AIDS awareness and safe sex in Kenya is to convince sexually active persons to use condoms consistently with non-regular partners in a general epidemic. Most respondents who do not use condoms attribute non-use to trusting a sex partner. Special initiatives are needed to promote condom use among the highest-risk core and bridge populations, such as female sex workers and bodaboda cyclists. These groups are at the highest risk of acquiring HIV and transmitting it to the general population. Kenya and its development partners need to target these highest-risk groups with many interventions, including educating peer groups; promoting the proper use and consistent availability of condoms, including female condoms; managing sexually transmitted infection; and discussing risk, risk settings and risk solutions.

- ***Minimize stigma and discrimination.*** A coordinated strategy for information, education and behaviour-change communication would help minimize stigma, misconceptions and myths about HIV/AIDS and encourage care for people with AIDS. Stigma and misconceptions about HIV/AIDS are widespread. The stigma associated with HIV discourages people from learning their HIV status, hampers efforts to provide proper care, and causes great hardship for many people with AIDS. Eliminating the stigma and discrimination will improve the quality of life of those living with HIV/AIDS and bolster efforts to prevent further spread. Mass media and information and education activities should address stigma and misconceptions to enhance behaviour change.
- ***Equip health centres and health workers to provide sexually transmitted infection care.*** Availability of services for detecting and controlling other sexually transmitted infections, such as syphilis, gonorrhoea, and chancroid or herpes that cause genital ulcers or sores, can be critical in managing the HIV/AIDS epidemic. In this behavioural surveillance survey, the prevalence of sexually transmitted infection symptoms in the last 12 months was relatively low, except among bodaboda cyclists and female sex workers (both 8%), probably because of under-reporting or because many sexually transmitted infections at their early stages are asymptomatic in women. Kenya and its development partners should conduct educational campaigns to encourage healthy behaviour and promote early detection, diagnosis and treatment of sexually transmitted infections. The existing health program trains health workers in syndromic management of sexually transmitted infections, but training needs to cover all providers in the country, including private practitioners. Ensuring that all health facilities have well-trained staff supplied with appropriate drugs will help achieve the goal of detecting, diagnosing, treating and controlling sexually transmitted infections.
- ***Promote voluntary counseling and testing services.*** Studies have indicated that voluntary counseling and testing can be cost effective in preventing HIV transmission. A high proportion of respondents in this behavioural surveillance survey expressed willingness to use voluntary counseling and testing services, if made available. More should be established and promoted throughout the country. As soon as the voluntary counseling and testing centres are established, the government and its development partners should publicize them and encourage people to go for HIV tests. Promotion of voluntary counseling and testing should emphasize confidentiality. Voluntary counseling and testing can be an important entry point to care, but this behaviour survey found many people who had had an HIV test did not receive pre-test and post-test counseling. There is a need to develop counseling guidelines and training manuals and train health providers to be counselors. Furthermore, community members could be trained as HIV/AIDS counselors, relieving health workers of some of the burden of HIV care and support.

- ***Focus on youth.*** Youth represent the future of Kenya and deserve special attention in HIV prevention. Youth report high sexual activity and low condom use, putting them at increased risk of sexually transmitted infection, including HIV. A multipronged approach that involves abstinence, faithfulness and condom use is urgently needed. Around the world, successful prevention programs among the youth are ones that equip them with the knowledge, skills and attitudes to delay sexual activity and prevent infection once they become sexually active. Kenya and its development partners should develop and promote youth centres where out-of-school youth can obtain information, education and counseling on how to improve their reproductive health, how to reduce their risk of exposure to HIV/AIDS, and how to gain access to HIV voluntary counseling and testing services. Most out-of-school youth are unemployed, which may contribute to their high-risk sex behaviour. The government, non-governmental organizations and other development partners need to equip out-of-school youth with life and entrepreneurial skills. It would also be beneficial to help out-of-school youth set up associations that could receive seed money for income-generating activities and programs. Female out-of-school youth are at particularly high risk of HIV infection because they tend to have sex partners older than themselves. There is an urgent need for the government and its development partners to develop and promote programs for empowering female youth and equipping them with life and negotiation skills.

- ***Measure behaviour at regular intervals and design appropriate interventions on the results.*** This behavioural surveillance survey has provided valuable baseline information on HIV/AIDS knowledge, attitudes and sex behaviour. These findings should be used to redesign and improve interventions and renew efforts to curtail the spread of HIV/AIDS and sexually transmitted infections in Kenya. To measure the success of the interventions, it will be necessary to conduct a behavioural surveillance survey among the same groups every two or three years. Additionally, more research—both quantitative and qualitative—might be conducted to provide insight into the causes of some risky sex behaviour and the barriers to adopting healthier sex behaviour.

Annexes

Annex 1. Indicators used in Kenya BSS 2002

No.	Indicators for all groups	Denominator
1	<p>Knowledge of HIV prevention methods</p> <p>Percentage of respondents able to identify abstaining from sexual intercourse, having one uninfected faithful sex partner, and using a condom correctly every time they have sexual intercourse as effective means of protecting themselves from HIV infection, in response to prompted questions.</p>	
2	<p>No incorrect beliefs about HIV transmission</p> <p>Percentage of respondents who in response to prompted questions correctly reject two most common local misconceptions about AIDS transmission: that HIV can be transmitted by mosquito bites or by sharing a meal with an infected person; and who know that a healthy-looking person can transmit HIV.</p>	
3	<p>Comprehensive knowledge about AIDS</p> <p>Percentage of respondents able to answer all the questions in the knowledge (no. 1) and no incorrect beliefs (no. 2) indicators correctly.</p>	
4	<p>Accepting attitudes towards people living with HIV/AIDS</p> <p>Percentage of respondents able to provide the following answers, which jointly measure the absence of stigmatizing and discriminating attitudes against people living with HIV/AIDS:</p> <ul style="list-style-type: none"> - Should people infected with HIV/AIDS be quarantined? (no) - Willingness to share a meal with an HIV-positive person (yes) - Willingness to care for a male relative infected with HIV (yes) - Willingness to care for a female relative infected with HIV (yes) - Should an HIV infected colleague be allowed to continue working?^a (yes) - Willingness to buy food from a shopkeeper or food seller whom one knew was HIV positive (yes) - If a member of the family became ill with HIV, would the respondent want it to remain a secret? (no) 	Entire sample
5	<p>Sex with non-regular sexual partner(s) in the last 12 months</p> <p>Percentage of respondents reporting sex with at least one non-regular partner in the last 12 months.</p>	Number of sexually active respondents during the past 12 months
6	<p>Condom use at last sex with a non-regular sexual partner</p> <p>Percentage of respondents reporting condom use at the last sexual encounter with a non-regular partner.</p>	Number of respondents who have had sex with at least one non-regular partner in the last 12 months
7	<p>Consistent (100%) condom use with non-regular partners over the last 12 months</p> <p>Percentage of respondents reporting consistent condom use with non-regular partners over the last 12 months.</p>	Number of sexually active respondents during the last 12 months
8	<p>Sex with commercial sex worker(s) in the last 12 months</p> <p>Percentage of respondents reporting sex with at least one commercial sex worker in the last 12 months.</p>	Number of respondents who have had sex with at least one commercial sex worker in the last 12 months
9	<p>Condom use at last sex with a commercial sex worker</p> <p>Percentage of respondents reporting condom use at last sexual encounter with a commercial sex worker.</p>	Number of respondents who have had sex with at least one commercial sex worker in the last 12 months
10	<p>Consistent (100%) condom use with commercial sex workers over the last 12 months</p> <p>Percentage of respondents reporting consistent condom use with commercial sex workers over the last 12 months.</p>	Number of respondents who have had sex with at least one commercial sex worker in the last 12 months

No.	Indicators for all groups	Denominator
11	Unprotected sex with a higher-risk partner in the last 12 months Percentage of respondents reporting not using a condom with any non-regular, non-commercial partner and any commercial sex worker or partner during the last 12 months.	Number sexually active respondents during the past 12 months
12	Prevalence of STI symptoms in the last 12 months Percentage of respondents reporting having had any abnormal discharge or genital ulcer or sores in the last 12 months.	
13	People seeking HIV test Percentage of respondents reporting ever voluntarily requesting an HIV test.	Entire sample

^aFor ethical reasons, this question is not included in computing the female sex workers' indicator.

Indicators for out-of-school youth		
No.	Indicator	Denominator
1	Ever had sexual intercourse Percentage of youth reporting ever having had sexual intercourse.	Entire sample
2	Mean age at first sex Mean age of youth at the first sexual intercourse.	Number of youth who have ever had sexual intercourse
3	Condom use at first sex Percentage of youth using condoms at first sexual encounter.	
4	Sexually active in the last 12 months Percentage of youth having had sexual intercourse in the last 12 months.	
5	Sex with commercial partner(s) in the last 12 months Percentage of youth reporting sex with at least one commercial partner in the last 12 months.	Number of sexually active youth during the past 12 months
6	Condom use at last sex with a commercial partner Percentage of youth reporting condom use at the last sexual encounter with a commercial partner.	Number of youth who had sex with at least one commercial partner in the last 12 months
7	Consistent (100%) condom use with commercial partners over the last 12 months Percentage of youth reporting consistent condom use with commercial partners over the past 12 months.	
8	Sex with non-commercial partner(s) in the last 12 months Percentage of youth reporting sex with at least one non-commercial partner in the last 12 months.	Number of sexually active youth during the past 12 months
9	Condom use at last sex with a non-commercial partner Percentage of youth using a condom at last sexual encounter with a non-commercial partner.	Number of youth who have had sex with at least one non-commercial partner in the last 12 months
10	Consistent (100%) condom use with non-commercial partners over the last 12 months Percentage of youth consistently using condoms with non-commercial partners over the last 12 months.	

Indicators for female sex workers (FSWs)		
No.	Indicator	Denominator
1	Sex with non-paying partner(s) in the last 7 days Percentage of FSWs reporting sex with at least one non-paying partner in the last 7 days.	Entire sample
2	Condom use at last sex with a non-paying partner Percentage of FSWs reporting condom use at the last sexual encounter with a non-paying partner.	Number of FSWs who have had sex with at least one non-paying partner
3	Consistent (100%) condom use with non-paying partners over the last 12 months Percentage of FSWs reporting consistent condom use with non-paying partners over the last 12 months.	

Indicators for female sex workers (FSWs)		
No.	Indicator	Denominator
4	Sex with paying client(s) in the last 7 days Percentage of FSWs reporting sex with at least one paying client in the last 7 days.	Entire sample
5	Condom use at last sex with a paying client Percentage of FSWs using a condom at last sexual encounter with a paying client.	Number of FSWs who had sex with at least one paying client
6	Consistent (100%) condom use with paying clients over the last 30 days Percentage of FSWs consistently using a condom with paying clients over the last 30 days.	
7	Prevalence of STI symptoms in the last 12 months Percentage of FSWs reporting having had any abnormal discharge and/or genital ulcer or sores in the last 12 months.	Entire sample

Annex 2. Out-of-school youth

a. Sociodemographic characteristics, and alcohol and drug use

Sociodemographic characteristics	Out-of-school youth (age 15–24)		
	Male (n = 2886) %	Female (n = 3239) %	Total (n = 6125) %
Age			
Median age	19.0	19.0	19.0
Mean age	19.5	18.8	19.1
Age distribution			
15–19	54.5	64.3	59.7
20–24	45.5	35.7	40.3
Education			
None	5.0	9.8	7.5
Primary	59.8	57.2	58.5
Secondary	33.7	31.5	32.5
Higher	1.5	1.5	1.5
Religion			
Protestant	48.4	51.4	50.0
Catholic	29.3	28.7	29.0
Muslim	17.4	17.3	17.4
Traditionalist	0.6	0.3	0.4
Other or none	4.3	2.3	3.2
Province (and district)			
Nairobi (Nairobi)	11.3	12.5	11.9
Central (Thika)	11.3	11.9	11.6
Coast (Mombasa)	11.5	12.6	12.0
Eastern (Machakos)	12.5	11.7	12.1
North Eastern (Garissa)	10.2	10.6	10.4
Nyanza (Suba)	10.7	4.8	7.6
Rift Valley (Nakuru and Nandi)	21.5	23.6	22.5
Western (Kakamega and Busia)	11.2	12.4	11.9
Alcohol use in the last 4 weeks			
Every day	1.6	1.0	1.3
Once per week	14.0	4.3	8.9
Less than once per week	5.5	2.6	4.0
Never	78.9	92.1	85.9
Ever use of drugs			
Khat (miraa)	18.5	5.0	11.4

Sociodemographic characteristics	Out-of-school youth (age 15–24)		
	Male	Female	Total
	(n = 2886)	(n = 3239)	(n = 6125)
	%	%	%
Bhang	9.0	1.8	5.2
Glue, petrol	1.2	0.3	0.7
Mandrax	0.2	0.1	0.1
Cocaine	0.3	0.1	0.2
Heroin	0.2	0.1	0.2

b. Knowledge of HIV/AIDS, STIs and VCT

BSS indicators	Out-of-school youth (aged 15–24)		
	Male	Female	Total
	(n = 2886)	(n = 3239)	(n = 6125)
	%	%	%
Has heard of HIV	98.4	97.7	98.1
Knows someone infected with HIV or who has died of AIDS	67.5	63.1	65.2
Has a close friend or relative with HIV or who has died of AIDS	34.2	35.2	34.8
Knowledge of HIV prevention methods	52.2	43.4	47.5
Abstinence	86.0	81.8	83.8
Being faithful to one uninfected partner	80.4	77.0	78.6
Condom use	66.2	55.9	60.8
No incorrect beliefs about AIDS transmission	58.7	53.0	55.7
HIV can be transmitted by mosquito bites (no)	72.9	69.4	71.1
HIV can be transmitted by sharing a meal with an infected person (no)	85.5	82.9	84.2
A healthy-looking person can transmit HIV (yes)	89.3	84.9	87.0
Comprehensive knowledge about AIDS	33.6	27.6	30.4
Additional HIV/AIDS knowledge indicators			
Injections with a used needle can transmit HIV (yes)	95.4	93.5	94.4
A person can get HIV through taboo, curse or witchcraft (no)	89.8	88.4	89.0
Having sex with a virgin can cure HIV (no)	92.1	87.4	89.5
If one has HIV and spreads it around through unprotected sexual intercourse with different people, the amount of virus will reduce and that person will live longer (no)	92.1	88.9	90.4
A woman can transmit HIV to her unborn child (yes)	84.3	82.0	83.0
Taking medication (ARVs) can reduce risk of transmission from mother to unborn child (yes)	8.7	6.6	7.6
A woman can transmit HIV to her child through breastfeeding (yes)	77.3	78.3	77.8
Heard about STIs?	94.1	88.1	90.9
Knowledge of STI symptoms in women			
Abdominal pain	10.3	15.0	12.8
Genital discharge	14.3	17.3	15.8
Foul-smelling discharge	8.6	9.3	8.9
Burning pain on urination	16.0	18.6	17.4
Genital ulcers or sores	12.8	13.8	13.3
Itching	10.8	16.7	13.8
Knowledge of STI symptoms in men			
Genital discharge	27.5	14.4	20.8
Burning pain on urination	41.6	20.4	30.7
Genital ulcers or sores	21.7	11.4	16.4
Swellings in groin area	11.9	5.7	8.7
Knowledge about availability of VCT facilities in the area	25.6	20.2	22.8
Willingness to use VCT service if available to respondent	87.7	84.9	86.2

BSS indicators	Out-of-school youth (aged 15–24)		
	Male	Female	Total
	(n = 2886)	(n = 3239)	(n = 6125)
	%	%	%
Young population seeking HIV tests	10.8	12.9	11.9
Voluntarily requested HIV test	8.2	9.0	8.6
Required to take HIV test	1.9	2.6	2.3
Found out the results of the test?	9.9	12.1	11.0
Respondents who had an HIV test	n = 312	n = 418	n = 730
Received pre-test and post-test counseling	50.5	50.1	50.3
Received only pre-test counseling	9.2	11.2	10.4
Received only post-test counseling	8.6	9.2	8.9
Received no counseling	31.0	28.7	29.7
Found out test results?	91.6	93.8	92.9
Accepting attitudes towards people living with HIV/AIDS (no stigma and discrimination against PLWA)	20.0	17.3	18.6
Should people infected with HIV/AIDS be quarantined? (no)	66.4	68.1	67.3
Willingness to share a meal with an HIV positive person (yes)	69.0	61.8	65.2
Willingness to care for a male relative infected with HIV (yes)	87.1	83.4	85.2
Willingness to care for a female relative infected with HIV (yes)	81.9	86.3	84.2
Should an HIV infected colleague be allowed to continue working? (yes)	62.1	63.3	62.7
Willingness to buy food from a shopkeeper or food seller whom one knew was HIV positive (yes)	53.5	49.0	51.1
If a member of the family became ill with HIV, would the respondent want it to remain a secret? (no)	63.7	57.9	60.6
	(n = 1303)	(n = 981)	(n = 2284)
Prevalence of STI symptoms in the last 12 months (among sexually active)	5.1	4.1	4.6
Had abnormal genital discharge in the last 12 months (among sexually active)	4.3	3.6	4.0
Had genital ulcers or sores in the last 12 months (among sexually active)	3.2	1.9	2.7

c. Sexual behaviour and condom use

BSS Indicators	Out-of-school youth (aged 15–24)		
	Male	Female	Total
	(n = 2886)	(n = 3239)	(n = 6125)
	%	%	%
Ever had sex	75.1	55.2	64.6
Had sex during the last 12 months	45.1	30.2	37.2
Mean age at first sex	15.3	16.2	15.7
Median age at first sex	15.0	16.0	16.0
Condom use at first sex (among sexually active youth; male = 2172, female = 1789)	17.1	26.6	21.4
Main reasons for first sex			
Personal desire	57.0	34.7	46.9
Mean age of sexual partner at first sex	14.6	19.4	16.7
Median age of sexual partner at first sex	15.0	19.0	16.0
How much older or younger was the sexual partner at first sex?			
5–9 years older	9.9	44.5	25.5
About the same age as myself	53.5	25.7	40.9
5–9 years younger	28.4	1.9	16.4
Ever heard of a male condom	95.4	89.2	92.1
Ever used a male condom	38.4	27.4	32.6
Ever heard of a female condom	50.0	37.4	43.3

BSS indicators	Out-of-school youth (aged 15–24)		
	Male	Female	Total
	(n = 2886) %	(n = 3239) %	(n = 6125) %
Ever used a female condom	2.3	3.1	2.6
Number of out-of-school youth who ever had sex	n = 2168	n = 1788	n = 3956
Sexually active in the last 12 months (among those who ever had sex)	60.1	54.9	57.7
Sexual partners last 12 months	n = 1303	n = 981	n = 2284
Sex with non-commercial partner(s)	95.3	95.2	95.3
Median number of non-commercial partners in the last 12 months	1.0	1.0	1.0
Mean number of non-commercial partners in the last 12 months	2.0	1.0	2.0
Sex with commercial partner(s)	13.1	9.5	11.5
Median number of commercial partners in the last 12 months	2.0	1.0	1.0
Mean number of commercial partners in the last 12 months	2.0	2.0	2.0
Had sexual intercourse in return for a gift or favour	7.2	11.8	9.3
Males ever having had a male sexual partner	0.6	n/a	0.6
Unprotected sex with a higher-risk partner in the last 12 months (among sexually active)	76.5	78.8	77.5
Condom use with non-commercial partners last 12 months	n = 1242	n = 934	n = 2176
Condom use at last sex with a non-commercial partner	42.4	38.7	40.8
Who suggested condom use that time?			
Myself	69.0	52.4	62.2
My partner	11.2	18.6	14.3
Joint decision	19.8	28.9	23.6
Consistent (100%) condom use with non-commercial partners over the last 12 months	24.5	22.0	23.4
Condom use with commercial partners last 12 months	n = 172	n = 110	n = 282
Condom use at last sex with a commercial partner	62.2	42.7	54.6
Who suggested condom use that time?			
Myself	81.3	52.9	72.2
My partner	4.7	23.5	10.8
Joint decision	14.0	23.5	17.1
Consistent (100%) condom use with commercial partners over the last 12 months	42.4	26.3	36.1

Annex 3. Adult target population groups

a. Sociodemographic characteristics, and alcohol and drug use

Sociodemographic characteristics	Female sex workers (n = 1754) %	Women in low-income settings (n = 2112) %	Matatu operators (n = 673) %	Bodaboda cyclists (n = 622) %	Policemen (n = 592) %	Men in worksites (n = 2120) %
Age						
Median age	25.0	30.0	28.0	24.0	33.0	35.0
Mean age	26.8	32.2	28.8	25.4	34.0	35.1
Age distribution						
15–19	13.1	0.2	2.4	13.0	–	0.8
20–24	33.6	1.3	27.6	42.1	8.8	11.0
25–29	22.8	43.3	30.5	22.8	21.5	17.0
30–34	16.6	24.3	23.6	14.1	27.0	20.0
35–39	7.5	13.2	8.8	4.2	19.1	17.6
40–44	4.5	10.1	4.8	2.3	14.2	17.7
45–49	1.9	7.6	2.4	1.4	9.5	15.8
25–49	53.3	98.5	70.0	44.9	91.2	88.2

Sociodemographic characteristics	Female sex workers (n = 1754) %	Women in low-income settings (n = 2112) %	Matatu operators (n = 673) %	Bodaboda cyclists (n = 622) %	Policemen (n = 592) %	Men in worksites (n = 2120) %
Education						
None	5.0	10.3	2.2	8.8	–	1.7
Primary	58.6	51.5	39.4	75.4	5.6	22.8
Secondary	35.3	32.2	56.2	15.8	89.4	57.2
Higher	1.1	3.0	2.2	–	5.1	18.3
Marital status						
Currently married, living with spouse	1.8	71.3	48.6	60.8	35.6	60.0
Currently married, living with other sexual partner	0.6	0.7	1.5	1.1	4.2	2.1
Currently married, living with no one (alone)	0.9	4.5	10.4	2.4	45.4	19.2
Not married, living with sexual partner	11.3	2.3	3.4	2.7	1.4	0.9
Not married, living with no one (alone)	85.5	21.2	36.1	33.0	13.1	17.7
Religion						
Protestant	48.9	57.1	53.9	56.4	57.4	60.0
Catholic	37.4	24.1	27.0	37.4	34.1	28.8
Muslim	10.8	16.9	11.4	4.0	7.6	7.9
Traditionalist	0.2	0.1	1.3	1.4	–	0.3
Other or none	2.7	1.8	6.2	0.6	0.9	3.0
Province (districts)						
Nairobi	–	–	25.1	–	22.5	–
Central	20.0	–	–	–	–	–
Coast	19.2	33.5	25.4	–	19.8	32.6
Eastern	20.0	–	–	–	–	–
North Eastern	–	–	–	–	20.3	–
Rift Valley	21.2	32.9	25.4	–	17.4	34.0
Western	19.7	33.6	24.1	100.0	20.1	33.4
Alcohol use in the last 4 weeks						
Every day	22.6	2.6	10.3	3.7	4.9	3.7
Once per week	44.4	6.5	27.6	18.3	37.7	19.5
Less than once per week	11.2	3.8	10.3	5.6	11.8	11.7
Never	21.8	87.1	51.7	72.2	36.8	65.0
Ever used drugs						
Khat	38.0	4.7	41.2	11.3	28.4	13.3
Bhang	19.2	1.4	24.7	13.3	8.1	7.7
Glue, petrol	1.0	–	0.7	0.5	0.7	0.2
Mandrax	0.6	0.1	0.9	0.3	0.3	0.2
Cocaine	1.2	0.1	1.0	0.5	0.3	0.2
Heroin	0.7	0.2	0.7	0.3	0.5	0.1

b. Knowledge of HIV/AIDS, STIs and VCT

Indicators	Female sex workers (n = 1754) %	Women in low-income settings (n = 2112) %	Matatu operators (n = 673) %	Bodaboda cyclists (n = 622) %	Policemen (n = 592) %	Men in worksites (n = 2120) %
Has heard of HIV	99.9	99.1	99.4	99.8	99.3	99.3
Knows someone infected with HIV or died of AIDS	87.8	84.3	87.6	90.5	83.0	90.6
Has a close friend/relative with HIV or died of AIDS	76.8	not asked	66.7	75.5	66.7	74.4
Knowledge of HIV prevention methods	72.6	58.6	49.0	58.9	61.5	67.3
Abstinence	88.8	91.7	84.8	88.2	87.1	93.6
Being faithful to one uninfected partner	85.2	92.1	84.6	88.1	89.8	95.3
Condom use	90.5	66.3	62.8	68.6	71.0	72.9
No incorrect beliefs about AIDS transmission	60.1	60.2	60.8	57.1	68.1	74.0
HIV can be transmitted by mosquito bites (no)	71.4	70.6	72.9	68.1	78.3	82.0
HIV can be transmitted by sharing a meal with an infected person (no)	83.4	85.7	85.8	81.5	85.6	90.0
A healthy-looking person can transmit HIV (yes)	92.6	92.3	93.4	94.7	95.4	95.8
Comprehensive knowledge about AIDS	46.5	38.3	32.7	37.3	45.9	52.7
Additional HIV/AIDS knowledge						
Injections with a used needle can transmit HIV (yes)	96.0	93.1	94.9	95.0	91.9	96.1
A person can get HIV through taboo, curse or witchcraft (no)	89.4	89.1	93.3	87.3	92.5	93.9
Having sex with a virgin can cure HIV (no)	91.3	89.1	92.2	89.2	92.9	95.7
If one has HIV and spreads it around through unprotected sexual intercourse with different people, the amount of virus will reduce and that person will live longer (no)	88.9	85.7	91.6	90.8	93.5	92.8
A woman can transmit HIV to her unborn child (yes)	82.4	79.2	80.6	75.7	81.0	78.6

Indicators	Female sex workers (n = 1754) %	Women in low-income settings (n = 2112) %	Matatu operators (n = 673) %	Bodaboda cyclists (n = 622) %	Policemen (n = 592) %	Men in worksites (n = 2120) %
Taking medication (ARVs) can reduce risk of transmission from mother to unborn child (yes)	9.1	9.0	9.1	12.8	25.6	15.3
A woman can transmit HIV to her child through breastfeeding (yes)	80.0	80.1	65.5	78.4	64.2	78.5
Heard about STIs?	97.2	96.4	97.6	95.0	95.6	97.8
Knowledge of STI symptoms in women						
Abdominal pain	52.8	35.7	n.a.	n.a.	n.a.	n.a.
Genital discharge	48.2	34.6	n.a.	n.a.	n.a.	n.a.
Foul-smelling discharge	25.7	16.2	n.a.	n.a.	n.a.	n.a.
Burning pain on urination	36.6	28.5	n.a.	n.a.	n.a.	n.a.
Genital ulcers/sores	25.5	18.4	n.a.	n.a.	n.a.	n.a.
Itching	36.8	26.4	n.a.	n.a.	n.a.	n.a.
Knowledge of STI symptoms in men						
Genital discharge	n.a.	n.a.	52.3	46.4	74.4	60.2
Burning pain on urination	n.a.	n.a.	55.6	46.5	62.4	58.7
Genital ulcers or sores	n.a.	n.a.	29.0	27.2	50.9	34.3
Swellings in groin area	n.a.	n.a.	16.8	20.5	18.4	17.2
Prevalence of STI symptoms in the last 12 months	8.1	3.4	5.6	7.5	3.2	1.9
Had abnormal genital discharge in the last 12 months	6.9	2.5	4.7	5.9	2.3	1.6
Had genital ulcers or sores in the last 12 months	3.9	2.2	2.3	4.8	1.6	0.7
Knowledge about availability of VCT facilities in the area	40.4	34.5	40.3	52.6	48.1	45.6
Willingness to use VCT service if available	78.0	73.2	71.9	75.7	72.8	78.8
Accepting attitudes towards people living with HIV/AIDS (no stigma and discrimination against PLWA)	28.3^a	25.1	22.7	14.6	37.0	43.0
Should people infected with HIV/AIDS be quarantined? (no)	76.7	78.0	74.9	67.3	85.4	85.7
Willingness to share a meal with an HIV positive person (yes)	69.7	72.2	69.1	73.9	77.8	83.6

Indicators	Female sex workers (n = 1754) %	Women in low-income settings (n = 2112) %	Matatu operators (n = 673) %	Bodaboda cyclists (n = 622) %	Policemen (n = 592) %	Men in worksites (n = 2120) %
Willingness to care for a male relative infected with HIV (yes)	87.0	93.1	88.2	91.8	91.2	94.4
Willingness to care for a female relative infected with HIV (yes)	88.8	91.7	91.6	86.6	88.6	93.6
Should an HIV infected colleague be allowed to continue working? (yes)	excluded ^a	71.4	77.2	55.2	85.6	89.1
Willingness to buy food from a shopkeeper or food seller whom one knew was HIV positive (yes)	58.5	55.6	56.5	46.5	70.3	72.7
If a member of the family became ill with HIV, would the respondent want it to remain a secret? (no)	55.1	63.6	59.0	64.7	65.2	73.2
Population seeking HIV tests	35.3	17.0	23.6	24.2	23.9	24.3
Has voluntarily taken HIV test	27.5	9.9	17.3	18.7	16.9	16.5
Has been required to take HIV test	7.8	6.9	6.2	5.1	6.5	7.7
Found out the results of the test?	35.1	15.8	22.4	22.5	22.6	21.7
Respondents who had ever had HIV test	n = 621	n = 359	n = 159	n = 151	n = 141	n = 515
Received pre-test and post-test counseling	57.5	45.1	48.1	66.0	38.8	48.0
Received only pre-test counseling	7.6	8.2	9.5	12.7	15.8	9.4
Received only post-test counseling	8.4	7.9	7.0	8.7	3.6	2.5
Received no counseling	26.4	38.9	34.8	12.7	40.3	39.1
Found out the test results?	93.2	93.0	94.9	92.7	95.0	89.6

Excludes stigma and discrimination question Q819, 'If a colleague/fellow sex worker has HIV but is not sick, should she be allowed to continue working?' for ethical reasons

c. Sexual behaviour and condom use

Indicators	Female sex workers (n = 1754) %	Women in low-income settings (n = 2112) %	Matatu operators (n = 673) %	Bodaboda cyclists (n = 622) %	Policemen (n = 592) %	Men in worksites (n = 2120) %
Ever had sex?	n.a.	98.4	98.4	96.0	99.2	98.2
Median age at first sex	16.0	17.0	16.0	15.0	17.0	17.0

Indicators	Female sex workers (n = 1754) %	Women in low-income settings (n = 2112) %	Matatu operators (n = 673) %	Bodaboda cyclists (n = 622) %	Policemen (n = 592) %	Men in worksites (n = 2120) %
Mean age at first sex	15.9	17.4	15.9	15.2	17.0	17.2
Sexually active in last 12 months (among those who ever had sex)	n.a.	87.2	91.7	87.4	90.0	92.0
Ever heard of a male condom	99.8	96.1	99.4	99.4	96.4	98.8
Ever used a male condom	89.8	28.1	59.9	27.2 ^a	28.4	48.7
Ever heard of a female condom	65.1	39.4	54.9	67.8	62.3	61.1
Ever used a female condom	12.6	6.1	0.3	5.5	3.3	3.1
Regular partner						
Sex with regular sexual partner in last 12 months (among sexually active)	n.a.	89.1	75.3	80.5	90.2	91.0
Median number of regular partners in the last 12 months	n.a.	1.0	1.0	1.0	1.0	1.0
Mean number of regular partners in last 12 months	n.a.	1.0	1.0	1.0	1.0	1.0
Condom use at last sex	n.a.	5.9	6.2	7.9	7.8	7.5
Who suggested condom use that time?						
Myself	n.a.	36.5	48.4	39.4	51.4	23.1
My partner	n.a.	20.8	6.5	6.1	10.8	9.2
Joint decision	n.a.	41.7	45.2	54.5	37.8	67.7
Consistent (100%) condom use with regular partners over last 12 months	n.a.	1.8	2.0	2.9	2.8	1.4
Non-regular partner						
Sex with non-regular partner(s) in last 12 months (among sexually active)	45.4^b	12.1	47.6	42.5	35.6	20.8
Median number of non-regular partners in last 12 months	1.0 ^c	1.0	1.0	2.0	1.0	1.0
Mean number of non-regular partners in last 12-months	1.0 ^d	1.0	2.0	3.0	2.0	2.0
Condom use at last sex with non-regular partner	50.7 ^e	39.7	56.4	55.0	68.6	57.5
Who suggested condom use that time?						
Myself	61.1	62.1	70.6	73.8	70.5	63.8
My partner	12.6	6.9	9.8	12.3	7.0	7.0
Joint decision	26.2	31.0	19.6	13.0	22.5	28.8
Consistent (100%) condom use with non-regular partners over last 12 months	34.5 ^f	33.8	39.1	39.6	58.5	42.5

Indicators	Female sex workers (n = 1754) %	Women in low-income settings (n = 2112) %	Matatu operators (n = 673) %	Bodaboda cyclists (n = 622) %	Policemen (n = 592) %	Men in worksites (n = 2120) %
Commercial sex partner						
Sex with non-regular sex partner(s) in last 12 months (among sexually active)	87.2^s	2.3	11.7	13.8	6.2	3.9
Median number of commercial partners in last 12 months	3.0 ^h	3.0	2.0	2.0	3.0	1.0
Mean number of commercial partners in last 12 months	4.0 ⁱ	4.0	4.0	4.0	3.0	2.0
Condom use at last sex with a commercial sex worker	87.5^j	75.0 (36/48) CI = (60.8, 89.1)	72.3 (57/79) CI = (60.8, 83.9)	63.9 (54/86) CI = (50.0, 75.7)	79.0 (29/37) CI = (64.1, 93.8)	61.6 (51/83) CI = (43.8, 74.9)
Who suggested condom use that time?						
Myself	74.9	80.6	70.2	94.4	75.9	60.8
My partner	10.0	2.8	15.8	–	6.9	11.8
Joint decision	15.1	16.7	14.0	5.6	17.2	27.5
Consistent (100%) condom use with commercial sex workers over last 12 months	67.3^k	62.5 (30/48) CI = (41.7, 79.8)	63.2 (50/79) CI = (49.8, 76.5)	50.0 (43/86) CI = (35.0, 64.9)	56.7 (21/37) CI = (35.5, 77.8)	49.3 (41/83) CI = (34.1, 64.6)
Unprotected sex with a higher-risk partner in last 12 months (among sexually active)	n.a	7.6	21.6	20.3	10.8	8.8
Free ride for sex favour (sare)	n.a	n.a	21.6	18.4	n.a.	n.a.
Males ever having had a male sex partner	n.a.	n.a.	1.5	2.5	0.8	0.3

^a Data incomplete. Q702 was never asked

^b Sex with non-paying partner(s) in the last 7 days (1 week)

^c Median number of non-paying partners in the last 7 days (1 week)

^d Mean number of non-paying partners in the last 7 days (1 week)

^e Condom use at last sex with a non-paying partner

^f Consistent condom use with non-paying partners over the past 12 months

^g Sex with paying client(s) in the last 7 days (1 week)

^h Median number of paying clients in the last 7 days (1 week)

ⁱ Mean number of paying clients in the last 7 days (1 week)

^j Condom use at last sex with a paying client

^k Consistent condom use with paying clients over the past 30 days (1 month)

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