ETHIOPIA FURTHER ANALYSIS

Changes in HIV-Related Knowledge and Behavior in Ethiopia, 2000-2005

Further Analysis of the 2005 Ethiopia Demographic and Health Survey

This report presents findings from a further analysis study undertaken as part of the follow up to the 2000 and 2005 Ethiopia Demographic and Health Surveys (EDHS). Macro International Inc. provided technical assistance for the project. Funding was provided by the U.S. Agency for International Development (USAID) under the terms of Contract No. GPO-C-00-03-00002-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

This report is part of the MEASURE DHS programme, which is designed to collect, analyse, and disseminate data on fertility, family planning, maternal and child health, nutrition, and HIV/AIDS.

Additional information about the 2005 EDHS may be obtained from the Central Statistical Agency (CSA), P.O. Box 1143, Addis Ababa, Ethiopia; Telephone: (251) 111 55 30 11/111 15 78 41, Fax: (251) 111 55 03 34, E-mail: csa@ethionet.et. Additional information about the DHS project may be obtained from Macro International Inc., 11785 Beltsville Drive, Calverton, MD 20705 USA; Telephone: 301-572-0200, Fax: 301-572-0999, E-mail: reports@macrointernational.com, Internet: www.measuredhs.com.

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Further Analysis of the 2000 and 2005 Ethiopia Demographic and Health Surveys

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Summary

According to the 2005 Ethiopia Demographic and Health Survey, 1.4 percent of Ethiopian adults (age 15-49) were infected with HIV. The prevalence was much higher in urban areas, among women, and among adults who had multiple sexual partners and non-regular partners. Using data from the two recent Ethiopia Demographic and Health Surveys, conducted in 2000 and 2005, this study examined changes in key HIV-related knowledge, attitudes, and sexual behavior indicators. Significant changes in selected indicators during 2000 and 2005 were determined using the t-test. The study revealed a number of encouraging signs that HIV/AIDS prevention programs are having the intended effects. Knowledge of HIV prevention methods increased in recent years, and there has been considerable increase in youth practicing sexual abstinence. Fewer adults reported having multiple partners and the proportion reporting sexual intercourse with a non-spousal partner decreased substantially. Although, the overall use of condoms remained low, use of condoms with non-spousal partners increased substantially. However, there has been little change in the proportion of women who know that HIV can be transmitted from mother to child, indicating a need for intensified communication program efforts on PMTCT targeting women.

1 Introduction

Ethiopia has more than 77 million people, making it the country with the second highest population in Africa (after Nigeria). Ethiopia has seen a steady increase in HIV prevalence over the years, with an estimated number of adults who are living with HIV ranging from 380,000 to 1.2 million, of children living with HIV ranging from 30,000 to 220,000, and the number of orphans due to HIV/AIDS ranging from 280,000 to 870,000 (UNAIDS 2007). The 2005 Ethiopia Demographic and Health Survey (EDHS) revealed that 1.4 percent of Ethiopian adults age 15-49 were infected with HIV (Central Statistical Agency Ethiopia and ORC Macro, 2006). The Government of Ethiopia has been intensifying its response to the epidemic, and initiated a new Ethiopian Strategic Plan in January 2005, along with a free antiretroviral treatment program (UNAIDS 2007). Increasing knowledge and awareness related to HIV/AIDS, and promoting safer sexual behavior are pillars of HIV/AIDS prevention efforts.

A number of studies have been carried out to examine HIV prevalence, and HIV/AIDS-related awareness, perceptions, attitudes, and sexual behavior (Yeraw et al., 2002; Sahlu et al., 1999; Fontanet et al. 1998). The study by Fontanet and colleagues in Addis Ababa revealed that HIV prevalence at study sites was as high as 6-7 percent, with the peak among adults age 25-29. Sahlu and his colleagues found that while the awareness regarding HIV among factory workers was high, higher-risk sexual behaviors (i.e., engaging in sexual intercourse with multiple sexual partners and with casual sexual partners) were of concern particularly among men. Yerdaw and his colleagues found that the vast majority of participants in the study from Addis Ababa knew how HIV is transmitted, and yet held negative attitudes towards people living with HIV. These studies provide some insights into the HIV/AIDS situation in Ethiopia. However, the applicability of these findings to the country in general remains limited as these studies were carried out among selected subgroups of the population, mostly in communities in or around Addis Ababa. Moreover, although a number of studies have been carried out in east and southern Africa that have examined trends in HIV/AIDS knowledge and sexual behavior using surveillance and population-based survey data (Mwaluko et al. 2003; Fylkesnes et al., 2001; Bloom et al. 2000; Asiimwe-Okiror et al., 1997), little is known about recent changes in these key indicators in Ethiopia.

Furthermore, a number of studies have pointed to a growing concern regarding the vulnerability of young people to HIV infection. A study on sexual behavior and level of awareness of reproductive health problems among young people in eastern Ethiopia found that among unmarried young men and women, the mean age at first sexual intercourse was 16.9 years for men and 18.0 years for women. While less than 10 percent of unmarried females age 14-17 have had sexual intercourse, over 20 percent of unmarried male youth in the same age group have had sexual intercourse (Korra and Haile, 1999). Estimates of HIV incidence in the age group 16-22 years obtained by Fontanet and his colleagues in their study in urban Addis Ababa ranged from 1.3-2.3 percent for men and from 2.1-2.4 percent for women (Fontanet et al. 1998).

The objective of this study is to describe recent changes in key HIV/AIDS-related knowledge, attitudes, and sexual behavior indicators using data from the two recent Ethiopia Demographic and Health Surveys (EDHS), conducted in 2000 and 2005. To address the growing concern of young people's vulnerability to HIV/AIDS, the current study also examines a number of indicators that are specific to young people.

While HIV tests were carried out as part of the 2005 survey, it was not part of the 2000 survey. Thus, changes in HIV prevalence cannot be investigated in this study. Nevertheless, the findings of this study will inform the Government of Ethiopia's HIV/AIDS prevention efforts, and contribute to the planning process.

2 Methods

2.1 Study subjects and sampling design

The analysis is based on data collected in the two rounds of the Ethiopia Demographic and Health Surveys (EDHS), which were carried out in 2000 and 2005. The EDHS surveys are nationally-representative population-based surveys implemented to obtain detailed information related to the various aspects of health, including knowledge, attitudes, and behaviors related to HIV/AIDS. The EDHS samples were collected using a two-stage cluster sampling method. In the first stage, clusters were selected from the list of census enumeration areas. In the second stage, a complete listing of households in each selected cluster was carried out and households were selected systematically for participation in the surveys. The data were collected from nationally-representative probability samples of adult women and men in the reproductive age groups 15-49 and 15-59, respectively. The 2000 survey collected information from 15,367 women and 2,607 men, and the 2005 survey from 14,070 women and 6,033 men.

2.2 Measurements

Variables examined in the analysis include those that were measured in both the 2000 and 2005 surveys. Indicators included in the analysis are described below.

2.2.1 HIV/AIDS related knowledge

- Heard of HIV/AIDS: Percentage of respondents who responded affirmatively to the question, “Have you ever heard of an illness called AIDS?”
- Knowledge of HIV/AIDS prevention methods:
  1. Percentage of respondents who said that people can reduce their chances of getting HIV/AIDS by abstaining from sexual intercourse. The 2000 survey did not include a prompted question on knowledge of abstinence, so the trend on this indicator is based on responses to an unprompted question;
  2. Percentage of respondents who, in response to a prompted question, said that people can reduce their chances of getting HIV/AIDS by using a condom every time they have sexual intercourse;
  3. Percentage of respondents who, in response to a prompted question, said that people can reduce their chances of getting HIV/AIDS by having just one partner who is not infected and who had no other partners
- Knowledge of prevention of mother-to-child transmission (PMTCT): Percentage of respondents who knew that HIV can be transmitted from mother to child during pregnancy, during delivery or by breastfeeding

2.2.2 Misconceptions

- Percentage of respondents who knew that a healthy-looking person can have HIV

2.2.3 Accepting attitudes toward people living with HIV/AIDS (PLHIV)

- Percentage of respondents who said they are willing to care for a relative who is sick with AIDS in their own households
- Percentage of respondents who would not want to keep the HIV-positive status of a family member secret

2.2.4 Sexual behavior

- Sexual debut among young people age 15-24: Percentage of young people (15-24) who had sexual intercourse before age 15;

- Percentage of never married young people (15-24) who have ever had sexual intercourse;
- Primary abstinence: Percentage of young people (15-24) who have never had sexual intercourse;
- Secondary abstinence: Percentage of sexually experienced young people (15-24) who did not have sexual intercourse in the past 12 months;
- Median age at sexual debut among women age 20-49 and among men age 25-49;
- Number of sexual partners in the past 12 month among those who had sexual intercourse in the past 12 months;
- Non-spousal sexual intercourse: Percentage of respondents who engaged in sexual intercourse with a non-marital, non-cohabiting partner in the past 12 months, among those who had sexual intercourse in the past 12 months
- Condom use at last sexual intercourse: Percentage of respondents who used a condom at last sexual intercourse, among those who had sexual intercourse in the past 12 months;
- Condom use with last non-spousal sexual partner in the past 12 months: Percentage of respondents who used a condom during the last non-spousal sexual intercourse, among those who had sexual intercourse with a non-spousal partner in the past 12 months;
- Consistent condom use: Percentage of respondents using condoms with each sexual partner in the past 12 months (detailed information collected for up to three partners).

2.2.5 Program coverage

- Ever tested for HIV: Percentage of respondents age 15-49 who ever had an HIV test

Also examined is the reported prevalence of sexually transmitted infections (STIs) or STI symptoms, including abnormal genital discharge, genital sore or ulcer in the past 12 months, among those who have ever had sexual intercourse. However, this information was not available for women in the 2000 survey, so the changes are discussed only for men.

2.3 Statistical analysis

The figures obtained in the 2000 and 2005 EDHS surveys were compared with assess whether there were significant changes during the five-year period using t-tests. Temporal changes in indicators were considered significant at a *p*-value of <0.05. Each variable was examined first for the total sample and separately by rural and urban samples, and where appropriate by age groups.

3 Results

3.1 Sample characteristics

Table 3.1 presents data on changes in the key indicators describing background characteristics of women and men age 15-49 in Ethiopia. Overall, between 2000 and 2005, there was an increase in the level of education among both men and women. The percentage of women who had no education decreased from 75 percent to 66 percent, while the percentage of women who had achieved primary education increased from 16 percent to 22 percent. Similarly, the percentage of men who had no education decreased from 48 percent to 40 percent, while the percentage of men who had achieved primary education and the percentage of men who had achieved secondary education both increased slightly from 36 percent to 40 percent, and from 14 percent to 19 percent, respectively.

Table 3.1 Sample distribution of interviewed women and men age 15-49 by background characteristics, Ethiopia 2000-2005

Variable	Women 2000	Women 2005	Men 2000	Men 2005
Age				
15-19	24.1	23.2	25.9	24.4
20-24	18.6	18.1	17.6	19.5
25-29	16.8	17.9	14.8	13.6
30-34	12.0	12.9	11.9	13.8
35-39	11.2	11.4	13.1	11.9
40-44	9.1	8.4	7.9	9.1
45-49	8.2	8.1	8.9	7.7
Marital status				
Never married	24.0	25.0	44.7	44.2
Married	62.8	63.4	50.5	52.4
Living together	0.9	1.1	0.4	0.5
Divorced/separated	8.7	6.6	3.9	2.5
Widowed	3.6	4.0	0.5	0.4
Education				
No education	75.2	65.9	47.6	39.6
Primary	15.8	22.2	36.0	39.2
Secondary	8.5	10.5	14.3	18.7
Higher	0.6	1.4	2.1	2.5
Regularly exposed to mass media				
Yes	13.6	20.1	29.4	36.9
No	86.4	79.9	70.6	63.1
Wealth quintile				
Lowest	18.6	17.3	18.8	17.9
Lower	18.8	18.8	20.0	19.3
Middle	19.1	19.4	19.8	17.9
Higher	19.5	18.8	19.2	19.9
Highest	24.1	25.7	22.2	25.0
Residence				
Urban	18.2	17.8	15.2	15.6
Rural	81.8	82.2	84.8	84.4
Number of years living at their current place of residence				
<3 years	5.6	6.1	4.7	3.5
3-9 years	11.1	13.0	9.1	6.2
10+ years	80.8	80.0	83.5	89.4
Number	15,367	14,070	2,319	5,464

Furthermore, the percentage of men and women who are regularly exposed to mass media increased between 2000 and 2005. Regular exposure to mass media was defined as listening to the radio, watching television, or reading a newspaper or magazine at least once a week. Twenty percent of women reported having been regularly exposed to mass media in 2005, relative to 14 percent in 2000. Thirty-seven percent of men reported being regularly exposed to mass media in 2005, relative to 29 percent in 2000. Mass media are often used as communication channels to raise awareness about health issues and to facilitate changes in attitudes and behavior. The increasing trend in exposure to mass media suggests that communication programs, including HIV/AIDS prevention campaigns, are reaching a wider audience. In terms of other key characteristics, there was little change between 2000 and 2005.

3.2 Changes in HIV-related knowledge

Table 3.2 presents changes in the HIV/AIDS-related knowledge and attitude indicators among women and men age 15-49 in Ethiopia. Knowledge of HIV/AIDS and its prevention methods increased among both women and men between 2000 and 2005. In 2005, 90 percent of women had heard of HIV/AIDS, relative to 85 percent in 2000. Similarly, 97 percent of men had heard of HIV/AIDS in 2005, relative to 95 percent in 2000.

Table 3.2 Changes in HIV related knowledge and attitudes indicators among women and men age 15-49, Ethiopia 2000-2005

	Women			Men		
Variable	2000	2005	*p-value*	2000	2005	*p-value*
Heard of HIV/AIDS						
Rural	81.9	88.0	*	94.5	95.9	*
Urban	97.3	98.6	*	98.9	99.7	
Total	84.7	89.9	*	95.2	96.5	*
Knowledge of HIV prevention methods						
Abstaining from sex						
Rural	10.0	30.3	*	16.9	54.7	*
Urban	14.2	57.5	*	22.3	72.1	*
Total	10.8	35.1	*	17.7	57.4	*
Abstaining from sex (prompted)						
Rural	na	59.3	na	na	78.6	na
Urban	na	75.9	na	na	89.5	na
Total	na	62.3	na	na	80.3	na
Having only one sexual partner (prompted)						
Rural	60.1	58.3	*	83.8	77.2	*
Urban	89.4	81.8	*	95.9	89.0	*
Total	65.4	62.5	*	85.6	79.0	*
Using condoms when having sex (prompted)						
Rural	24.2	33.3	*	55.1	60.9	*
Urban	75.4	72.2	*	89.2	82.5	*
Total	33.5	40.2	*	60.3	64.3	*
Knowledge on both B & C methods[1]						
Rural	22.7	28.0	*	53.1	53.4	
Urban	73.0	65.5	*	87.3	75.5	*
Total	31.8	34.7	*	58.3	56.9	
Knowledge on prevention of mother-to-child transmission						
Knows that HIV can be transmitted from mother to child						
Rural	51.9	70.0	*	69.2	82.2	*
Urban	86.6	92.3	*	91.8	93.9	
Total	58.2	73.9	*	72.6	84.0	*
Misconceptions						
Knows that a healthy-looking person can have HIV						
Rural	29.9	44.5	*	50.6	65.2	*
Urban	69.9	78.8	*	82.6	90.2	*
Total	37.2	50.6	*	55.5	69.1	*
Accepting attitudes toward PLHIV						
Willing to care for relative with AIDS						
Rural	31.7	46.2	*	42.0	65.2	*
Urban	68.5	84.7	*	80.3	90.6	*
Total	38.4	53.0	*	47.9	69.1	*
Would not want to keep HIV-positive status of family member secret						
Rural	62.4	56.1	*	82.4	73.6	*
Urban	82.5	70.1	*	87.5	79.0	*
Total	66.1	58.6	*	83.2	74.4	*
Ever tested for HIV						
Rural	na	0.5		0.9	2.9	*
Urban	na	7.3		8.9	19.6	*
Total	na	1.7		2.1	5.5	*
Number	15,367	14,070		2,320	5,464	

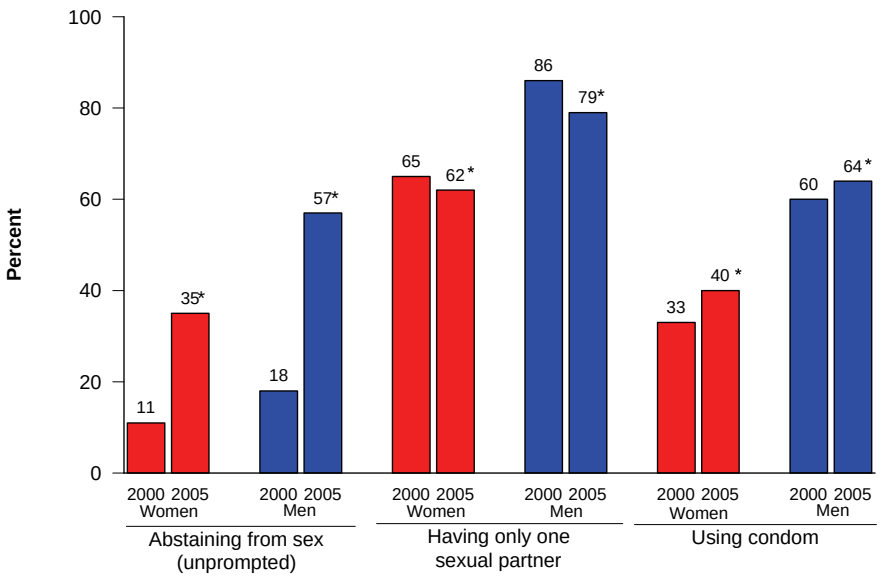
Note: An asterisk indicates significance at p value ≤ 0.05.
[1] Knowledge on both B & C methods is defined as those who say that the risk of getting the AIDS virus can be reduced by using a condom every time they have sex and by having sex with just one partner who is not infected and who has no other partners.
na = Not applicable

The proportion of women who knew that one can prevent HIV infection by abstaining from sexual intercourse increased significantly from 11 percent in 2000 to over 35 percent in 2005. This increase was more pronounced among men, with the proportion who were aware of abstinence as a prevention method increasing significantly from 18 percent in 2000 to 57 percent in 2005. The increase was observed among women and men living in urban areas (from 14 percent to 57 percent among women, and from 22 percent to 72 percent among men) as well as those living in rural areas (from 10 percent to 30 percent among women, and from 17 percent to 55 percent among men). It is important to note that when respondents were probed for their knowledge of abstinence as a

prevention method in the 2005 survey, a much higher proportion of both women (62 percent) and men (80 percent) reported having such knowledge compared with only 35 percent of women and 57 percent of men when they responded to an unprompted question on HIV/AIDS prevention methods.

The proportion who knew that the risk of HIV infection can be reduced by having sexual intercourse with just one partner who is not infected and who has no other partners declined slightly for both women and men between the two surveys. On the other hand, the proportion of women and men who knew that one can prevent HIV infection by using a condom every time they have sexual intercourse increased. The proportion of women who knew that one's risk of HIV infection can be reduced by using a condom every time they have sexual intercourse increased significantly from 33 percent in 2000 to over 40 percent in 2005. Similarly, the proportion of men who knew that one's risk of HIV infection can be reduced by using a condom every time they have sexual intercourse increased from 60 percent to 64 percent (Figure 3.1). This increase was due mainly to an increase in rural areas (from 24 percent to 33 percent among women, and from 55 percent to 61 percent among men), while there was a slight decline in such knowledge in urban areas (from 75 percent to 72 percent among women, and from 89 percent to 82 percent among men). An improvement in the knowledge of condoms in rural areas is encouraging, and suggests that HIV/AIDS prevention messages have been increasingly reaching the rural areas where a large majority of Ethiopians live.

Figure 3.1 Knowledge of HIV prevention methods, Ethiopia 2000 and 2005

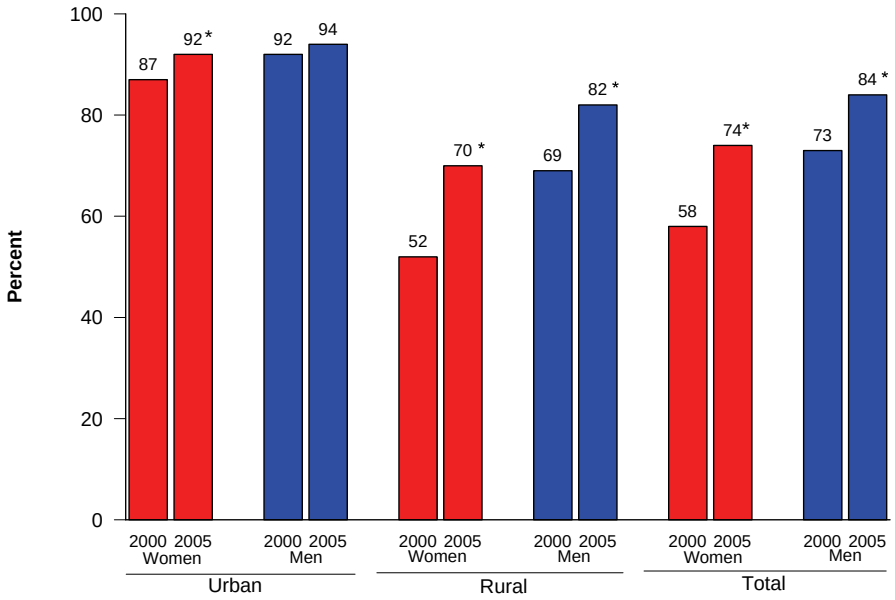


Note: An asterisk indicates significance at p value < or = 0.05.

The study also revealed that the proportion of women who knew that one's risk of HIV infection can be reduced by (1) having sexual intercourse with just one partner who is not infected and who has no other partners *and* (2) using a condom every time they have sexual intercourse increased slightly from 32 percent in 2000 to 35 percent in 2005. The increase was mainly due to an increase among women living in rural areas (from 23 percent to 28 percent). A corresponding increase was not observed among women living in urban areas or among men.

With regard to knowledge on the prevention of mother-to-child transmission (PMTCT), the proportion of women who knew that HIV can be transmitted from mother to child during pregnancy, child birth, or breastfeeding increased from 58 percent in 2000 to 74 percent in 2005. Again, the increase was mainly due to an increase among women living in rural areas (from 52 percent to 70 percent), and a relatively small increase among women living in urban areas, where 87 percent of women already had such knowledge in 2000, which increased further to 92 percent in 2005. Similarly, the proportion of men who knew that HIV can be transmitted from mother to child increased from 73 percent in 2000 to 84 percent in 2005 (Figure 3.2). The change was also observed among men living in rural areas (from 69 percent to 82 percent), but there was not much increase among men living in urban areas, where 92 percent already had knowledge of PMTCT in 2000, which increased slightly to 94 percent in 2005.

Figure 3.2 Knowledge of prevention of mother-to-child transmission, Ethiopia 2000 and 2005

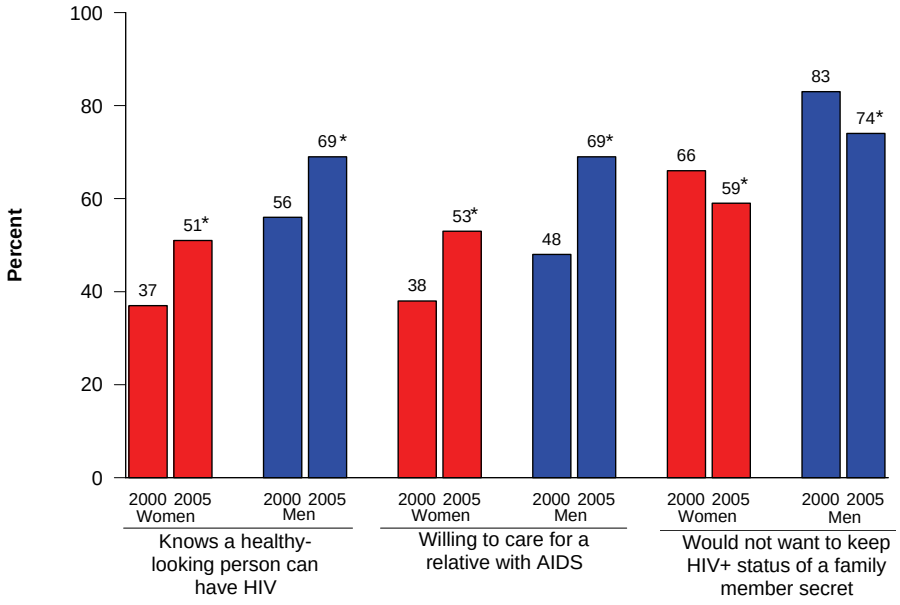


Note: An asterisk indicates significance at p value < or = 0.05.

3.3 Changes in misconceptions and attitudes toward PLHIV

Communication campaign efforts also aim to dispel misconceptions about HIV/AIDS. One of the common misconceptions relates to the fact that a healthy-looking person can have HIV. The study revealed that the proportion of women and men who knew that a healthy-looking person can have HIV increased significantly between 2000 and 2005 (from 37 percent to 51 percent for women, and from 55 percent to 69 percent for men) (Figure 3.3). This increase was observed in both the urban and rural samples. It is encouraging to note that 90 percent of men living in urban areas were aware that a healthy-looking person can have HIV.

Figure 3.3 Misconceptions and attitudes, Ethiopia 2000 and 2005



Note: An asterisk indicates significance at p value < or = 0.05.

Stigma and discrimination against people living with HIV/AIDS (PLHIV) are a major concern and a barrier to prevention efforts. HIV/AIDS programs in many countries aim to reduce these attitudes through awareness-raising and sensitization efforts. A number of indicators were used in the Ethiopia DHS to measure accepting attitudes toward PLHIV. The study showed that, in general, stigma against PLHIV decreased over the past five years (Figure 3.3). The proportion who were willing to care for a relative with AIDS increased significantly (from 38 percent to 53 percent for women and from 48 percent to 69 percent for men). This improvement in the willingness to care for a sick relative was observed in both urban and rural samples, with urban women and men being much more accepting than rural women and men. However, the proportion of women who said they would not want to keep the HIV-positive status of a family member secret decreased for both women (from 66 percent in 2000 to 59 percent in 2005) and men (from 83 percent to 74 percent).

3.4 Changes in HIV-related behaviors of youth

As seen in Table 3.3, the median age at first sexual intercourse in 2005 was about five years older for men (21.1 years) than for women (16.4 years). There has been a slight increase in the median age at first sexual intercourse in the past five years, especially in urban areas where it increased from 17.3 years in 2000 to 18.5 years in 2005 for women, and from 18.7 years in 2000 to 20.5 years in 2005 for men.

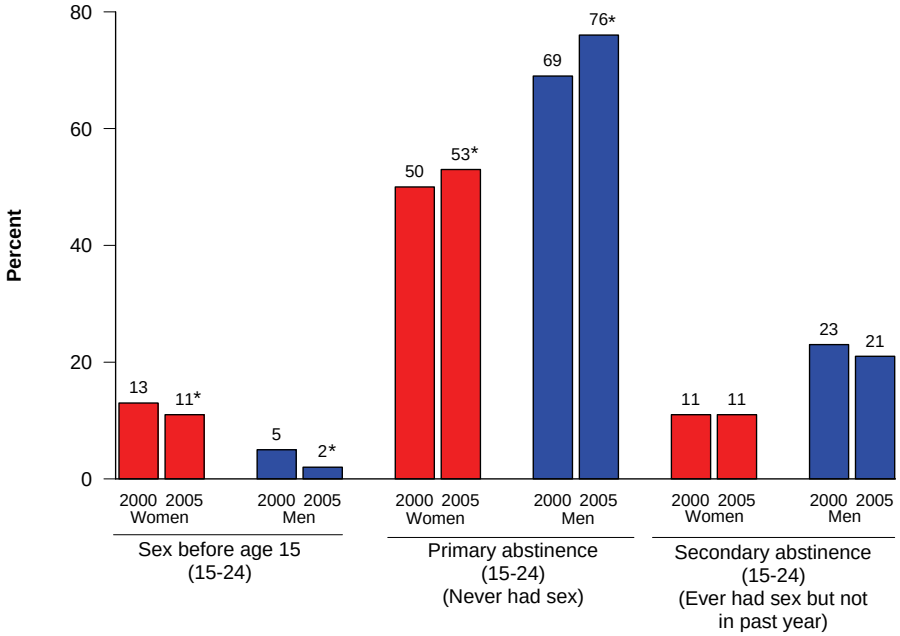
Table 3.3 Changes in median age at sexual debut and HIV-related behavior indicators among women and men age 15-24, Ethiopia 2000-2005

	Women			Men		
Variable	2000	2005	*p-value*	2000	2005	*p-value*
Median age at sexual debut (women age 20-49; men age 25-49)						
Rural	16.1	16.1		20.5	21.3	
Urban	17.3	18.5		18.7	20.5	
Total	16.3	16.4		20.2	21.1	
Number	11,657	10,804		1,312	3,064	
All respondents age 15-24						
Proportion of respondents who had sex before age 15						
Rural	18.3	17.9		3.9	1.7	*
Urban	7.1	7.4		6.9	1.6	*
15-19 years old	13.5	11.2	*	5.1	1.7	*
20-24 years old	19.4	21.5		3.2	1.7	
Total	16.0	15.7		4.3	1.7	*
Number	6,570	5,813		1,008	2,399	
Proportion of never-married respondents who have had sex						
Rural	2.0	1.7		19.5	9.6	*
Urban	7.7	9.4		36.3	23.5	*
15-19 years old	2.0	2.2		13.4	5.4	*
20-24 years old	9.2	9.5		38.7	24.1	*
Total	3.7	4.0		22.2	12.4	*
Number	3,366	3,165		891	2,081	
Proportion of respondents who have never had sex						
Rural	45.8	48.4	*	71.1	77.3	*
Urban	65.4	68.4		59.6	72.8	*
15-19 years old	69.3	72.3	*	84.6	92.7	*
20-24 years old	24.6	27.4	*	46.8	56.0	*
Total	49.9	52.6	*	69.3	76.5	*
Number	6,566	5,813		1,008	2,397	
Sexually experienced respondents age 15-24						
Proportion of respondents who did not have sex in the past 12 months						
Rural	10.0	9.4		23.3	18.7	
Urban	17.5	23.6	*	23.6	29.4	
15-19 years old	15.4	12.8		31.2	19.9	
20-24 years old	8.8	10.7		20.1	21.2	
Total	11.1	11.4		23.4	21.0	
Number	3,292	1,368		309	565	

Note: An asterisk indicates significance at p value ≤ 0.05.

Table 3.3 also presents changes in HIV-related behavior indicators among young women and men age 15-24. The study found that the proportion of young men (15-24) who had sexual intercourse before age 15 decreased slightly from 4 percent in 2000 to less than 2 percent in 2005. This decrease was more pronounced in urban areas than in rural areas. Never married women age 15-24 were much less likely to report having had sexual intercourse than men in both surveys. While this proportion remained unchanged for women at 4 percent between 2000 and 2005, it declined significantly for men from 22 percent in 2000 to 12 percent in 2005. The proportions of women and men age 15-24 who had never had sexual intercourse (i.e., primary abstinence) increased slightly between 2000 and 2005, from 50 percent to 53 percent for women and from 69 percent to 76 percent for men (Figure 3.4). Corresponding increases were observed among urban and rural youth, as well as among adolescents (15-19) and older youth (20-24). Overall, there was little change in the proportion of sexually experienced women and men age 15-24 who did not have sexual intercourse in the past 12 months (i.e., secondary abstinence) between the two survey years. However, this proportion increased somewhat among older and urban youth.

Figure 3.4 Sexual behavior of youth 15-24, Ethiopia 2000 and 2005



Note: An asterisk indicates significance at p value < or = 0.05.

3.5 Changes in HIV-related behaviors of adults

Table 3.4 presents changes in HIV-related behavior indicators among women and men age 15-49 who had sexual intercourse in the past 12 months (i.e., sexually active in the past 12 months). The study revealed improvements in a number of indicators of safer sexual behaviors. First, the proportion of women and men who reported having only one sexual partner in the past 12 months increased between the two survey years. In 2005, almost all women and 96 percent of men reported having had only one sexual partner. The proportion of respondents who reported having two or more sexual partners decreased from 1.6 percent to 0.2 percent among women and from 11 percent to 4 percent among men during the past five years (Figure 3.5). Corresponding declines were observed in both urban and rural areas and among both unmarried and married women and men.

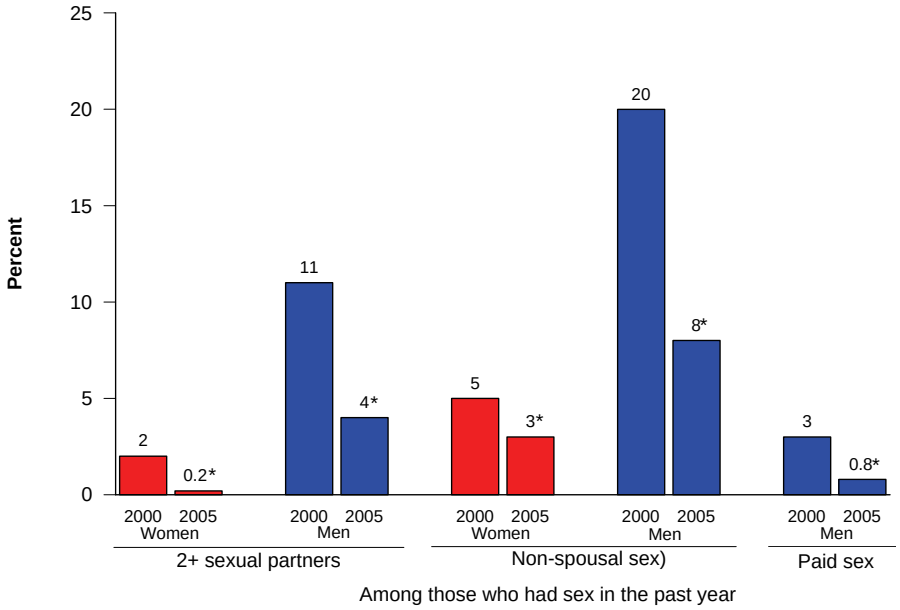
Table 3.4 Changes in HIV-related behavior indicators among women and men age 15-49 who have been sexually active in the past 12 months, Ethiopia 2000-2005

	Women			Men		
Variable	2000	2005	*p-value*	2000	2005	*p-value*
Number of sexual partners in the past 12 months						
1	98.4	99.8	*	89.3	95.9	*
2	1.3	0.2	*	7.3	3.8	*
3+	0.3	0.0	*	3.4	0.3	*
Number	10,128	4,352		1,424	3,121	
Proportion of respondents with multiple sexual partners in the past 12 months						
Rural	1.4	0.2	*	10.3	4.3	*
Urban	2.4	0.3	*	12.7	3.2	*
Not married	8.9	0.8	*	24.5	8.5	*
Married	1.0	0.2	*	7.6	3.7	*
Total	1.6	0.2	*	10.7	4.1	*
Number	10,128	4,352		1,424	3,121	
Proportion of respondents who engaged in sex with non-marital, non-cohabiting partner in the past 12 months						
Rural	3.1	1.4	*	17.8	5.4	*
Urban	13.9	13.3		32.8	29.9	
Not married	47.5	46.6		89.7	85.7	
Married	1.3	0.5	*	4.9	0.8	*
Total	4.6	2.7	*	20.1	8.5	*
Number	10,120	4,352		1,424	3,121	
Proportion of respondents who paid for sex in the past 12 months						
Rural	na	na		3.1	0.8	*
Urban	na	na		5.3	1.0	*
Not married	na	na		15.6	4.0	*
Married	na	na		0.8	0.5	
Total	na	na		3.5	0.8	*
Number	na	na		1424.5	3120.8	
Proportion of respondents who ever used a condom						
Rural	0.3	0.0	*	2.8	5.3	*
Urban	7.8	1.2	*	32.8	43.2	*
Not married	3.7	0.1	*	19.4	35.9	*
Married	1.0	0.3	*	4.0	5.9	*
Total	1.5	0.2	*	7.7	10.8	*
Number	11,853	5,525		1,557	3,443	
Proportion of respondents who used a condom at last sex in the past 12 months						
Rural	0.2	0.4		2.7	1.9	
Urban	5.9	6.0		21.7	25.8	
Not married	7.8	12.2		29.6	45.9	*
Married	0.5	0.4		0.5	0.9	
Total	1.0	1.0		5.7	4.9	
Number	10,128	4,352		1,424	3,119	
Proportion of respondents who used condoms during last non-spousal sex in the past 12 months						
Rural	5.1	3.0		15.6	29.5	*
Urban	25.6	39.9	*	55.4	79.8	*
Not married	16.6	26.7	*	26.8	54.2	*
Married	4.9	7.8		22.4	28.3	
Total	13.5	23.6	*	26.1	51.9	*
Number	466	119		367	264	
Proportion of respondents who used condoms consistently in the past 12 months						
Rural	0.2	0.4		2.7	1.9	
Urban	5.9	6.0		18.8	25.8	*
Not married	7.5	12.2	*	27.8	45.9	*
Married	0.5	0.4		0.3	0.9	*
Total	1.0	1.0		5.2	4.9	
Number	10,128	4,352		1,424	3,121	
Ever tested for HIV						
Rural	na	0.5		0.9	2.9	*
Urban	na	7.3		8.9	19.6	*
Total	na	1.7		2.1	5.5	*
Number	15,367	14,070		2,320	5,464	

Note: An asterisk indicates significance at p value ≤ 0.05.
na = Not applicable

The proportion of sexually active respondents who had sexual intercourse with a non-spousal partner (non-marital, non-cohabiting partner) in the past 12 months also declined considerably for both women (from 5 percent to 3 percent) and men (from 20 percent to 8 percent) (Figure 3.5). The prevalence of non-spousal sexual intercourse was much higher in urban areas, but much of the decrease in non-spousal sexual intercourse occurred in rural areas. The proportion of men who reported having had paid sexual intercourse in the past 12 months also declined from 3 percent in 2000 to less than 1 percent in 2005, with corresponding declines among unmarried and married men and in both urban and rural areas.

Figure 3.5 Sexual behavior of adults15-24, Ethiopia 2000 and 2005



Note: An asterisk indicates significance at p value < or = 0.05.

The proportion of men (all interviewed men, not just sexually active) who have ever used a condom increased between the two surveys, from 8 percent in 2000 to 11 percent in 2005. Ever-use levels were much greater among urban and never married men, who also experienced more pronounced increases between the two surveys (from 33 percent in 2000 to 43 percent in 2005 for urban men, and from 19 percent to 36 percent among unmarried men) (Table 3.4). In 2005, only 1 percent of women and 5 percent of men reported using a condom at last sexual intercourse in the past 12 months, and this level remained virtually unchanged since 2000 (Figure 3.6).

The proportion of sexually active women and men who had non-spousal sexual intercourse in the past 12 months and used a condom during last non-spousal sexual intercourse increased between the two surveys (from 13 percent in 2000 to 24 percent in 2005 among women, and from 26 percent to 52 percent among men) (Figure 3.7). This change in the right direction was especially marked among women and men living in urban areas, and among non-married women and men.

Figure 3.6 Condom use at last sex in the past year, Ethiopia 2000 and 2005

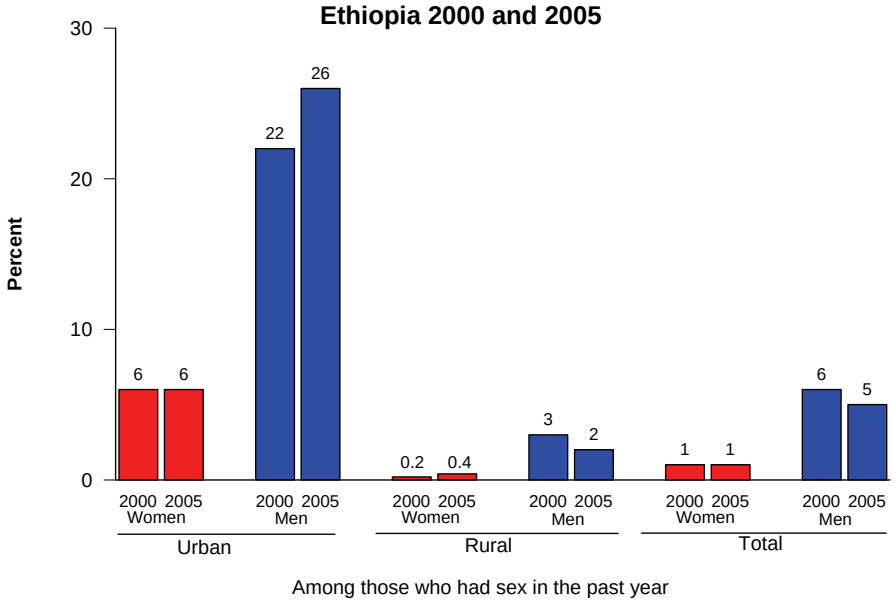
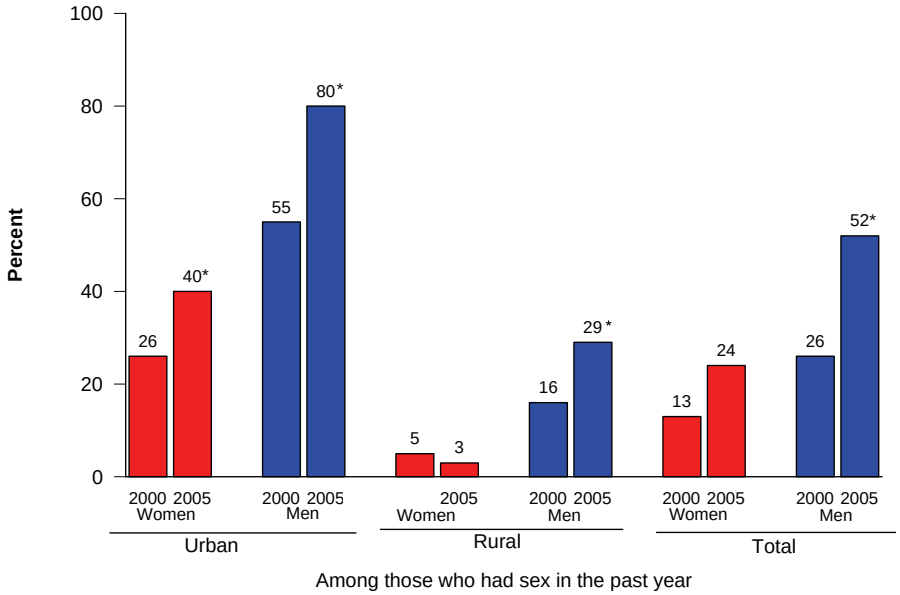


Figure 3.7 Condom use at last non-spousal sex in the past year, Ethiopia 2000 and 2005



Note: An asterisk indicates significance at p value < or = 0.05.

The proportion of sexually active respondents who used condoms consistently in the past 12 months increased significantly among non-married women and men (Table 3.4). The proportion of sexually active non-married women who used condoms consistently increased from 7 percent in 2000 to 12 percent in 2005. This increase was more pronounced among men. The proportion of sexually active non-married men who used condoms consistently increased from 28 percent in 2000 to 46 percent in 2005. Moreover, the increase in consistent condom use was observed also among sexually active men living in urban areas (from 19 percent in 2000 to 26 percent in 2005).

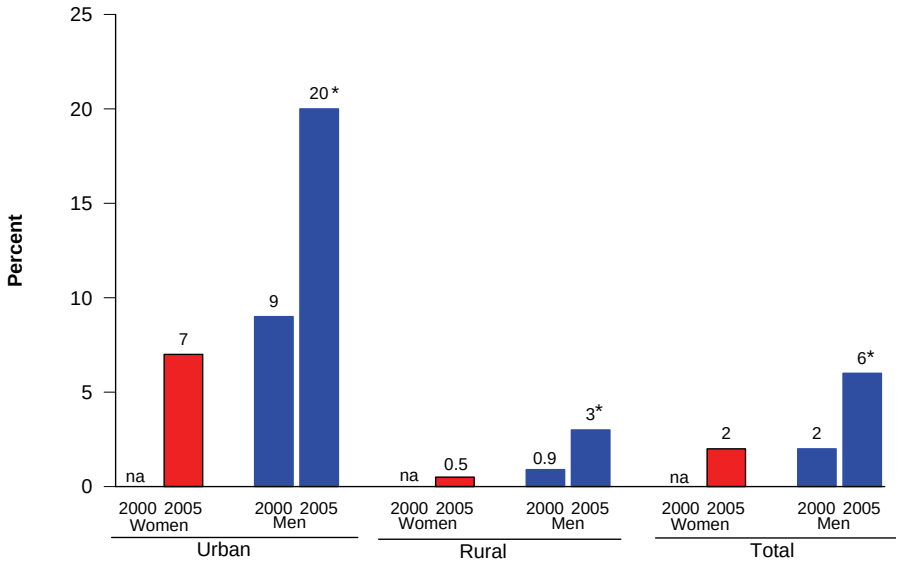
3.6 Changes in the prevalence of STI/STI symptoms

The study also examined changes in self-reported prevalence of STI or STI symptoms among men during the past 12 months. Data from the DHS surveys show that in 2005, 1.5 percent of women and 1.0 percent of men reported having experienced an STI or STI symptoms in the past 12 months. For men, where data on STIs and STI symptoms were available in both surveys, the proportion with STI/STI symptoms in the past 12 months declined from 2.2 percent in 2000 to 1.0 percent in 2005. The indicators pertaining to self-reported prevalence of STIs and STI symptoms among women were not measured in the 2000 survey, and thus no change analysis is possible for the female sample.

3.7 Changes in coverage of HIV testing

The coverage of HIV counseling and testing programs remains very low in Ethiopia, with less than 2 percent of women and less than 6 percent of men having ever been tested for HIV in 2005 (Figure 3.8). Since this question was not collected for women in the 2000 survey, no comparison between 2000 and 2005 can be made. The proportion of men who have ever been tested for HIV increased from 2 percent in 2000 to 6 percent in 2005. This increase was more pronounced among men living in urban areas, where the proportion of those who have ever been tested for HIV more than doubled from 9 percent in 2000 to 20 percent in 2005.

Figure 3.8 Ever tested for HIV, Ethiopia 2000 and 2005



Note: An asterisk indicates significance at p value < or = 0.05.
na = Not applicable

4 Discussion

This study used two rounds of nationally representative population-based surveys carried out in Ethiopia in 2000 and 2005 to describe changes in key HIV/AIDS-related knowledge, attitudes, and behavior indicators. The study revealed a number of encouraging signs that HIV/AIDS prevention programs are having the intended effects. First, almost all men and women in Ethiopia have heard of HIV/AIDS. The study also indicated that an increasing proportion of men and women recognize abstinence and condom use as HIV prevention methods. Furthermore, an increasing proportion of men and women know that a healthy-looking person can have HIV. In terms of stigma against PLHIV, the proportion of men and women who are willing to care for a relative with HIV/AIDS increased. However, there has been little change in the proportion of women who know that HIV can be transmitted from mother to child, indicating a need for intensified communication program efforts on PMTCT targeting women.

With regard to HIV-related behaviors among young people, the study revealed that the proportion of young women and men who have never had sexual intercourse increased during the past five years. Moreover, proportions of young men who initiated sexual intercourse before age 15 and those who had premarital sexual intercourse decreased in the past five years. These changes are encouraging for HIV prevention efforts.

There is also evidence of improvements in risky sexual behavior of adults. The proportions of women and men having multiple sexual partners, the proportions of women and men having sexual intercourse with a non-spousal partner, and the proportion of men having paid for sexual intercourse all declined in the past five years. During the same period, the study found evidence of increasing use of condoms. While the overall levels of condom use remains very low, ever use of condoms, use at last sexual intercourse in the past 12 months, and consistent condom use, all increased somewhat during the past five years. Condom use during sexual intercourse with non-spousal partners also increased during this period.

The proportion of men who have ever tested for HIV increased between the two surveys. This may be due to the scaling-up of voluntary counseling and testing (VCT) programs, particularly in urban areas. At the same time, the study indicated that only a small proportion of women and men in the rural areas have ever tested for HIV (less than 1 percent of women and less than 3 percent of men in 2005). Thus, VCT programs need to be expanded and testing be made available in rural areas.

This study has a number of limitations. First, it lacks longitudinal data on HIV/AIDS-related knowledge and associated factors in Ethiopia for a more in-depth analysis of trends. Instead, this analysis is based on two cross-sectional surveys with independently drawn samples, which makes assessing causal determinants of changes difficult. In particular, it is difficult to conclude whether the changes in knowledge, attitudes, and behaviors are associated with the level of program efforts and coverage. Moreover, the study is unable to reach any definitive conclusion regarding the association between knowledge and behavior (i.e., an association between the increase observed in the level of HIV-related knowledge and the increase observed in the level of HIV-related behaviors). Finally, this analysis is based on reported information on sexual behavior. The results may be biased to the extent of misreporting of sexual behaviors (Mensch et al., 2003). In a given social context, the extent of such misreporting could vary by sex, educational level, economic status, and area of residence (Hewett et al., 2004).

Nevertheless, this study is the only study that describes the changes in HIV-related knowledge, attitudes, and behaviors in Ethiopia. Overall, the study shows considerable improvements in a range of knowledge and behavior indicators, but also highlights unacceptably low levels of VCT coverage and condom use. As such, the study's findings are valuable inputs for policies and programs in Ethiopia, and can guide the process of identifying the issues where HIV/AIDS-related program efforts and coverage should be intensified.

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