

HIV Prevalence and Associated Behavioral Factors in Lesotho, Kenya, Malawi, and Uganda

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Communicable diseases contribute to the bulk of disease in low-income nations, especially in Africa (1). Non-communicable diseases, coupled with weak and struggling responses, are also becoming an important component.

Among the communicable diseases that are present in Africa are HIV and AIDS, malaria, tuberculosis, childhood diarrheal diseases, and acute respiratory infections (many of these vaccine preventable and could be controlled by adequate child nutrition). While Africa is home to the largest number of HIV-infected and AIDS patients, the situation is currently not entirely hopeless. There has been a documented decline in the prevalence, but more importantly, in the incidence of HIV in Kenya, Uganda, and Zimbabwe (2-5). In many other countries, prevalence and incidence have stabilized. Positive changes in behavioral factors have been suggested as possible reasons for the decline in HIV infection rates in the eastern and southern African countries (2-7). Much of southern Africa, however, is yet to experience declines in HIV prevalence. In this text, I described HIV prevalence and associated behavioral factors in Uganda and Kenya (East Africa) and Lesotho and Malawi (Southern Africa) using nationally representative data obtained some 5 years ago.

WHAT WAS DONE?

A review of nationally representative cross sectional studies using the Demographic and Health Surveys for Lesotho, Kenya, and Malawi from 2004 and the Uganda HIV/AIDS Sero-behavioural Survey from 2004-2005 was conducted in order to obtain data on HIV prevalence and behavioral reports. The data obtained from the reports included the prevalence of HIV among 15-49 year old persons and HIV-related behavioral factors, such as the number of sexual partners, exposure to higher-risk sex, and use of condoms. Prevalence odds ratios were calculated using Rothman's Episheet (www.epidemiolog.com), with Uganda's prevalence as the referent.

Uganda was selected as the referent country because it was the first country in Africa to report a sustained reduction in HIV prevalence. Lesotho, Kenya, and Malawi were selected as they are eastern and southern African countries that had completed and reported national HIV prevalence estimates between 2003 and 2005. A review of the literature was also conducted to assess the trend of HIV prevalence in the studied countries.

WHAT WAS FOUND?

Adult HIV prevalence in 1994 was highest in Uganda (14.5%), lowest in Lesotho (3.1%), intermediate in Kenya (8.3%), and high in Malawi (13.6%) (8). Taking Uganda as the referent, prevalence odds ratios and 95% confidence intervals were the following: Lesotho – 0.2 (0.1-0.3), Kenya – 0.5 (0.4-0.7), and Malawi – 0.9 (0.7-1.3), ie, compared with Uganda, Malawi did not have significantly lower HIV prevalence, but Lesotho and Kenya did.

A decade later, overall HIV prevalence declined by 55.9% ($P<0.001$), 19.8% ($P=0.200$), and 18% ($P=0.200$) in Uganda, Kenya, and Malawi, respectively (Table 1). The decline in Malawi was not significant, but in Kenya and Uganda it was. In Lesotho, however, HIV prevalence increased by 65.8% ($P<0.001$). There was no significant difference in HIV prevalence between Kenya and Uganda, while in Lesotho and Malawi HIV prevalence was significantly higher than in Uganda. These differences were observed for the overall national prevalence for the age group 15-49 years (Table 2).

It is of interest that, although Malawi had a much higher HIV prevalence than Uganda, in Malawi there was significantly lower prevalence of people who reported having had more than one partner in the past 12 months and a lower mean number of sexual partners, and who engaged in higher-risk sexual activity than in Uganda. Also, Malawi had lower prevalence of condom use for higher

TABLE 1. HIV prevalence (%) and prevalence odds ratio in persons aged 15-49 years by sex and residence status in Uganda, Lesotho, Kenya, and Malawi, 2003-2005

	Country						
	Uganda	Lesotho		Kenya		Malawi	
HIV prevalence	prevalence	prevalence	prevalence OR*	prevalence	prevalence OR*	prevalence	prevalence OR*
In the age group 15-49 years	6.4	23.5	4.5 (3.5-6.0)	6.7	1.1 (0.8-1.5)	11.8	2.0 (1.4-2.7)
Urban	10.1	29.1	3.7 (2.9-4.7)	10	1.0 (0.7-1.3)	17.1	1.8 (1.4-2.4)
Rural	5.7	21.9	4.6 (3.4-6.3)	5.6	1.0 (0.7-1.4)	10.8	2.0 (1.4-2.8)
In women	6.4	26.4	5.2 (3.9-7.0)	8.6	1.4 (1.0-1.9)	11.6	1.9 (1.4-2.6)
In men	5.0	19.3	4.5 (3.3-6.3)	4.6	0.9 (0.6-1.4)	9.5	2.0 (1.4-2.8)

*Prevalence odds ratio and 95% confidence intervals calculated with Uganda as a referent value. Source: Demographic and Health Surveys for Lesotho, Kenya, and Malawi (2004) and the Uganda 2004-2005 HIV/AIDS Sero-behavioural Survey.

TABLE 2. Prevalence of selected HIV-related behavioral characteristics in Kenya, Lesotho, Malawi, and Uganda from 2003-2005

Behavioral characteristic	Uganda	Lesotho	Malawi	Kenya
Percentage of women with more than 2 partners in the past 12 months	3.8	11.1	1.1	1.7
Prevalence odds ratios (95% confidence intervals)*	1	3.2 (2.2-4.6)	0.3 (0.1-0.6)	0.4 (0.2-0.8)
Percentage of men with 2+ partners in the past 12 months	29.3	30.4	11.8	11.7
Prevalence odds ratios (95% confidence intervals)	1	1.1 (0.9-1.3)	0.3 (0.3-0.4)	0.3 (0.3-0.4)
Percentage of men with higher-risk sex in the past 12 months	36.6	63.1	26.9	39.6
Prevalence odds ratios (95% confidence intervals)	1	3.0 (2.5-3.6)	0.6 (0.5-0.8)	1.1 (0.9-1.4)
Percentage of women with higher-risk sex in the past 12 months	15.3	35.6	8.3	17.6
Prevalence odds ratios (95% confidence intervals)	1	3.1 (2.5-3.8)	0.5 (0.4-0.7)	1.2 (0.9-1.5)
Percentage of men with higher risk who used condoms	53.4	48.6	47.1	46.5
Prevalence odds ratios (95% confidence intervals)	1	0.8 (0.7-1.0)	0.8 (0.7-0.9)	0.8 (0.6-0.9)
Percentage of women with higher risk who used condoms	46.7	41.9	30.1	23.9
Prevalence odds ratios (95% confidence intervals)	1	0.8 (0.7-1.0)	0.5 (0.4-0.6)	0.4 (0.3-0.4)
Percentage of men circumcised	24.8	76.5	20.7	83.7
Prevalence odds ratios (95% confidence intervals)	1	9.9 (8.0-12.1)	0.8 (0.6-1.0)	15.6 (12.5-19.4)

*Prevalence odds ratio and 95% confidence intervals calculated with Uganda as a referent value. Source: Demographic and Health Surveys for Lesotho, Kenya, and Malawi (2004) and the Uganda 2004-2005 HIV/AIDS Sero-behavioural Survey.

risk sexual relations. This would suggest that while Uganda had higher prevalence of higher-risk behaviors than Malawi, people who engaged in higher-risk sex in Uganda were also more likely to protect themselves with condoms.

CHALLENGES FOR THE FUTURE

The decline in HIV prevalence in Uganda has sparked international discussion about the epidemiological and programmatic determinants responsible. Political will, massive investment in finances, personnel, and ability to learn from failures have all been suggested as the reasons why Uganda has stood out among other African countries that have experienced devastating consequences of the AIDS pandemic (9,10). Individual studies have pointed also to circumcision, delay in sexual debut, abstinence, use of condoms for higher risk sexual encounters, openness, and reduction in the number of people who had multiple sexual partners (11).

HIV-1 was first described in Uganda in 1982 and was known as "slim disease" (12). In Malawi, the first case of HIV was reported in 1985. The prevalence of circumcision in Uganda in 2004-5 was reported to be slightly higher than 16.5% found by Gray et al in a cohort of 5507 men (13).

HIV and AIDS are critical public health challenges on the African continent. While I would not wish to minimize the gravity of the situation, it is irresponsible not to recognize the enormous strides that have been taken to ensure that prevalence does not increase further, but more importantly, that incidence is stemmed.

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