

HIV- and AIDS-Related Knowledge, Awareness, and Practices in Madagascar

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The prevalence of HIV in Madagascar has been slowly rising in the past decade but in 1999 was still less than 0.5%.¹ Although this rate is low compared with the rates in many other countries, including the United States (0.61%) and especially sub-Saharan African nations such as Zimbabwe (25%) and South Africa (20%),¹ the risk factors for an epidemic are present. High rates of syphilis,² hepatitis B virus,³ and other sexually transmitted diseases, as well as extreme poverty,⁴ suggest that many of Madagascar's 14 million people are at risk for acquiring HIV. The AIDS Impact Model projected that HIV seroprevalence could reach 15% by 2015 if Madagascar follows the epidemic trend of countries like Kenya.⁵

We sought to determine directly whether high-risk behaviors that might lead to rising infection rates were present in this population. The aims of this study were to (1) determine a baseline level of public awareness and knowledge about HIV and AIDS and (2) ascertain the HIV and AIDS risk-related behaviors of a segment of the general population in the capital city, Antananarivo.

METHODS

During July and August 2000, we conducted 134 interviews with patients and visitors in the 2 teaching hospitals of the University of Antananarivo School of Medicine. All interviews used a 3-part, 41-item questionnaire eliciting information about demographics and previous sources of HIV and AIDS knowledge, an assessment of this knowledge, and a detailed personal history of HIV and AIDS risk-related behaviors.

The questionnaire, written in French, was translated for patients who spoke only Malagasy. The same American medical student and at least 1 Malagasy medical student or resident conducted each interview. Patients and visitors were eligible for participation if they were 18 years of age or older and could ambulate to a private room. We performed frequency calculations, *t* tests, analysis of variance tests, and Spearman rank correlation tests with SPSS, Version 10.0 (SPSS Inc, Chicago, Ill).

RESULTS

Demographics

One hundred thirty-six people participated in the informed consent process, after which 2 people declined to participate and 2 other participants completed only the demographics and HIV and AIDS knowledge sections. Of the 134 participants, 71 (53%) were women. The participants' median age was 33.5 years; 90 (67%) had completed high school. Ninety (67%) were married, and 32 (24%) lived in rural areas. Every participant had previously received HIV and AIDS information, most commonly from radio (118, 88%), but only 23 (17%) had received it from a health care provider.

HIV and AIDS Knowledge

One hundred twenty-four (93%) participants correctly identified having unprotected vaginal sex with a person who has HIV or AIDS and receiving an unscreened transfusion from someone with HIV or AIDS as high risk (Table 1). However, 91 (68%) did not know that vaginal sex with a properly used condom is low risk. Forty-one (31%) identified kissing someone on the cheek, a common greeting in Madagascar's central highlands, as carrying some risk. Most participants believed that intimate kisses, mosquitoes, and sneezes could transmit HIV and AIDS.

Personal History

One hundred thirty-two participants completed the personal history section (Table 2). Of the 21 (16%) who had had more than 1 sexual partner in the last 6 months, only 3 (14%) had had more than 2 partners. However, only 2 (10%) reported the consistent

TABLE 1—Responses to HIV and AIDS Risk Assessment Test (N = 134)

Situation	Answers, % of Participants				
	No Risk	Low Risk	Medium Risk	High Risk	Don't Know
Working every day	65.7	16.4	7.5	9.7	0.7
Sharing a drinking glass	61.2	13.4	7.5	17.2	0.7
Having vaginal sexual intercourse <i>without</i> a condom	2.2	0.7	4.5	92.5	0
Having vaginal sexual intercourse <i>with</i> a properly used condom	34.3	32.1	14.2	17.9	1.5
Kissing on the cheek	69.4	13.4	7.5	9.7	0
Kissing intimately	38.8	23.9	12.7	23.9	0.7
Receiving an (unscreened) transfusion	3.7	1.5	2.2	92.5	0
Being bitten by a mosquito	31.3	17.2	20.9	28.4	2.2
Being sneezed on	47.8	19.4	20.1	10.4	2.2

Note. Participants were asked to rate each of the hypothetical situations between a person without HIV or AIDS and a person with HIV or AIDS as carrying no risk, low risk, medium risk, or high risk of contracting HIV for the person without HIV or AIDS. (Correct answers are in boldface type.)

TABLE 2—Personal Behavior Survey Results (N = 132)

Behavior	No. Reporting Behavior	% Reporting Behavior
Sexual activity		
> 1 sexual partner in last 6 mo	21 (19 men, 2 women)	15.9 (30.2% of men, 2.8% of women)
Of above, used condoms with every partner	2	9.5
Ever had sexual intercourse with someone of same sex	2	1.5
Ever received money for sexual activity	2	1.5
Ever paid for sexual activity	23 (all men)	17.4 (36.5% of men)
Ever had sexual relations with someone non-Malagasy	17	12.9
Blood transfusion or injection drugs		
Ever received a blood transfusion	25	18.9
Ever used injection drugs	0	0
Travel		
Ever traveled within Madagascar	123	93.2
Ever traveled out of Madagascar	29	22.0
Ever traveled to mainland Africa	0	0

use of condoms. Twenty-three participants, all men (37% of the men), reported having previously paid for sex.

HIV Knowledge and Demographic Correlations

Education level was not associated with the number of questions answered correctly on the risk assessment test ($P=.350$), but age correlated significantly with test scores, with younger participants performing better ($r=-0.264$, $P=.002$). No significant difference was found in the mean test scores of men and women ($P=.350$) or of participants from rural or urban areas ($P=.723$). There was a trend toward better scores in

participants who had previously spoken with health care workers about HIV or AIDS ($P=.071$).

DISCUSSION

The data from the HIV knowledge assessment suggest that HIV and AIDS awareness is high in Antananarivo, but knowledge of how HIV and AIDS cannot be transmitted and the use of condoms in prevention are limited. Understanding how HIV is not transmitted is important for preventing stigma against individuals with HIV and AIDS.⁶ Fear of stigma is known to deter citizens from being tested for HIV,^{7,8} an important

opportunity for HIV and AIDS prevention counseling.⁹

The rate of multiple partnering among Malagasy men in this study was similar to World Health Organization reported rates in Uganda, Kenya, and Zimbabwe, whereas reported condom use rates in this study were much lower than the rates in these sub-Saharan African nations.¹

The 2 potential protective factors found in this study were minimal travel to mainland Africa and the lower reported number of sexual partners for persons with multiple partners.

STUDY LIMITATIONS

In this hospital-based survey, sexual activity could have been less than participants would normally report because of personal or family illness. Although every effort was made to make participants feel comfortable, rates of same-sex sexual relations and multiple partnering could have been underreported because of sensitivity and social stigma.

Antananarivo is not representative of all of Madagascar, as indicated by higher education levels—67% of the study participants had completed high school in a country where 12% start high school⁶—and by higher rural hepatitis B virus prevalence.³

CONCLUSIONS

In this initial survey of the HIV and AIDS awareness, knowledge, and related behavior

in Antananarivo, Madagascar, we observed that HIV and AIDS awareness is high, but knowledge about transmission is incomplete. High rates of multiple partnering and low condom use rates among people with multiple partners suggest that Madagascar is at risk for an epidemic. Intervention by health care workers, the Malagasy government, and non-governmental organizations is warranted to prevent the disastrously high AIDS rates seen in Madagascar's neighbors. A larger study that pairs HIV- and AIDS-related knowledge and behavior surveying with HIV testing and includes participants from other parts of the country is needed to confirm these findings and to develop specific and effective surveillance and prevention programs. ■

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Contributors

N.M. Lanouette designed the study, conducted the interviews, analyzed the data, and wrote the brief. R. Noelson assisted with design of the questionnaire, coconducted many of the interviews, and contributed to the writing of the brief. A. Ramamonjisoa assisted with study design, particularly the questionnaire, and with the writing of the brief. J.M. Jacobson and S. Jacobson contributed to and supervised the study design, data analysis, and writing of the brief.

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Human Participant Protection

This study, questionnaire, and consent forms were approved by the Mount Sinai Hospital Institutional Re-

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