

Attitudes towards Premarital Testing on Human Immunodeficiency Virus Infection among Malawians

Humphreys Misiri, Adamson S. Muula

Department of Community Health, University of Malawi College of Medicine, Blantyre, Malawi

Aim. To determine factors influencing voluntary counseling and premarital testing on human immunodeficiency virus (HIV) in Malawi.

Method. We analyzed the data collected by the Malawi Demographic and Health Survey (MDHS) 2000 to determine the likelihood of Malawi population to accept HIV testing. The MDHS was a nationwide cross-sectional study where cluster sampling technique and an interviewer-administered questionnaire were used. We applied the Logit model of analysis to determine the HIV testing likelihood according to the following parameters: age, place of residence (urban vs. rural), belief that sexual abstinence protects from HIV infection, knowledge of a location of HIV testing, belief that diagnosis of HIV should be kept secret, and knowledge of anyone with AIDS.

Results. Out of 3,092 participants, 23.3% lived in urban and 76.7% in rural areas. Willingness to have premarital HIV counseling and testing was positively associated with increased age, urban residence, and wish to keep one's own HIV testing result confidential. However, knowledge of a person with HIV/AIDS, HIV testing location, and other sexually transmitted infections/diseases, as well as belief that abstinence protects against HIV were inversely related to desire to take an HIV test.

Conclusion. Not all population groups have an equal likelihood of accepting voluntary HIV counseling and testing. Public health intervention on HIV counseling and testing should be tailored specifically for each population group.

Key words: *counseling; health surveys; HIV infection; Malawi; patient acceptance of health care*

Malawi is one of the countries in the sub-Saharan region heavily affected by the pandemic of human immunodeficiency virus (HIV) infection and acquired immunodeficiency syndrome (AIDS). The estimated infection rate among the general population is between 10-15% (1). In selected high-risk groups, such as women attending antenatal clinics, infection rates are estimated to be over 30% in urban and 12% in rural areas (2). It is estimated that about 250 Malawians become infected with HIV each day (3).

The public health effects resulting from the current HIV/AIDS pandemic are increasing number of orphans and widows, increasing incidence and prevalence of tuberculosis and Kaposi's sarcoma (4), and increasing incidence of Pneumocystis carinii pneumonia (PCP) and other infectious diseases resulting in increased bed occupancy by HIV infected persons (5,6). The Government of Malawi has accepted voluntary HIV counseling and testing as one of the key elements in the prevention and control of HIV/AIDS in the country, and the awareness of the authorities of the extent and importance of the problem is reflected in the Malawi HIV/AIDS Policy, 2003 (7), the Malawi National Health Plan 1999-2004 (8), and the Malawi

Poverty Reduction Strategy Paper (9). Therefore, the Ministry of Health and Population has established, or facilitated the establishment of, the following interventions: sentinel HIV surveillance sites, provision of anti-retroviral therapy in three tertiary-level hospitals at US\$30 per month for each patient, and provision of antiretroviral drugs for the prevention of mother-to-child transmission of HIV in selected facilities. C Campaigns raising awareness of HIV/AIDS and healthy life skills, including family life and sexual and reproductive health training for young people, are being promoted in collaboration with the Ministries of Education, Science, and Technology, and non-governmental organizations. In 2003, the Government of Malawi has created the Ministry of State in the President's Office Responsible for HIV/AIDS Programs as a way to ensure that HIV/AIDS is accorded highest priority.

Voluntary counseling and HIV-testing has been identified as a cost-effective measure for the prevention and control of HIV in certain areas of Africa (10). Voluntary HIV counseling can also be one of the promising approaches to increase HIV screening, prevention, and control (11). A study in rural Malawi

area reported that HIV testing and cotrimoxazole use prevented death in one out of 13 patients with tuberculosis (12). There are increasing initiatives by the government, international agencies, and non-governmental organizations to increase the availability and accessibility of HIV counseling and testing.

Premarital voluntary HIV counseling and testing is one way of preventing both vertical and heterosexual transmission of the virus in areas with high HIV prevalence (13-15). There are, however, reports of non-willingness to use contraceptives among women who know they are HIV-infected. The most probable reason for such a behavior is to avoid stigmatization and abandonment (16-19).

We re-analyzed the data collected by the Malawi Demographic and Health Survey 2000 to determine the likelihood of population to accept HIV testing with regard to the following parameters: age, place of residence (urban vs. rural), belief that sexual abstinence protects from HIV-infection, knowledge of HIV-testing sites, belief that diagnosis of HIV should be kept secret, and knowledge of anyone who has AIDS.

Material and Methods

For our analysis we used the data collected by the Malawi Demographic and Health Surveys 2000 (20). Permission to use the data was obtained from the National Statistical Office, Zomba, Malawi.

The Malawi Demographic and Health Survey was a nationwide cross-sectional study where multistage cluster sampling technique was used based on region/province, districts within a region, and traditional authority areas within a district. A female to male ratio was 4:1. Questionnaires were interviewer-administered and the questions were closed-ended offering a choice among "yes", "no", or "I don't know" answers.

A Logit model was used to determine the factors that affect the probability of consent to premarital HIV counseling and testing. As the data were categorical and the response binary, a Logit model was found appropriate (21,22). The relationship between willingness to accept voluntary HIV counseling and testing and the following variables: age, place of residence (urban vs rural), belief that sexual abstinence protects from HIV-infection, knowledge of location where HIV testing is done, knowledge of sexually transmitted diseases (STDs) other than HIV/AIDS, belief that AIDS infection has to be kept secret, knowledge of a person who has or is dying of AIDS. We used the following model:

$$\log\left(\frac{p}{1-p}\right) = \alpha + B_j + C_k + D_l + E_m + F_o + G_s + H_t$$

where i to $t = 1, 2$; α was the intercept, where B_j , C_k , D_l , E_m , F_o , G_s , and H_t were parameters for respondent's age, place of residence (urban vs rural), belief that abstinence from sex protects from HIV/AIDS, knowledge where HIV testing is performed, knowledge about other sexually transmitted diseases, belief that HIV infection has to be kept secret, and knowledge of a person who has or is dying of AIDS, respectively. Except for the intercept, each parameter of the Logit model has a subscript that can assume any value between 1 and 2.

$$p = \frac{\exp(a + B_j + C_k + D_l + E_m + F_o + G_s + H_t)}{1 + \exp(a + B_j + C_k + D_l + E_m + F_o + G_s + H_t)}$$

Statistical Analysis

All analyses were performed with Statistical Package for the Social Sciences (SPSS, Standard Version, Release 9.0.0, SPSS Inc., Chicago, IL, USA). We used descriptive statistics for age; odds ratio with 95% confidence intervals were calculated for variables such

as knowledge of HIV/AIDS patient, knowledge of HIV testing location, knowledge of other sexually transmitted diseases, place of residence, and belief that sexual abstinence protects from HIV-infection. The level of statistical significance was set at $p < 0.05$.

Results

Out of a total of 3,092 respondents, 544 (17.6%) lived in the Northern Region, 1,116 (36.1%) in the Central Region, and 1,432 (46.3%) in the Southern Region of Malawi. There were 721 (23.3%) participants from the urban areas and 2,371 (76.7%) from the rural areas. Of the 3,092 respondents, 308 (10%) had never been sexually active, 56% (1,733) had sexual intercourse in the week preceding the study, whereas 34% (1,050) had not had sexual intercourse in the preceding several weeks. Almost two-thirds (76.3%) of participants responded that HIV-infection could be prevented by sexual abstinence, 22.9% answered that sexual abstinence could not prevent HIV-infection, 0.8% did not know, and one result was missing. The majority of participants were of younger age, with 58.3% younger than 29 (Table 1). There were only 5.6% respondents aged over 50. About two-thirds (67.7%) of the participants had completed primary education, whereas about 10% had no formal education at all (Table 1).

Table 1. Socio-demographic characteristics of 3,092 study participants

Characteristic	No. (%)
Age-group (years):	
15-19	674 (21.8)
20-24	584 (17.6)
25-29	544 (17.6)
30-34	335 (10.8)
35-39	333 (10.8)
40-44	240 (7.8)
45-49	209 (6.8)
50-54	173 (5.6)
Education level:	
no education	301 (9.7)
primary	2,091 (67.6)
secondary	682 (22.1)
tertiary	18 (0.6)

The following factors were inversely related to desire for HIV testing: knowledge of sexually transmitted infections other than HIV/AIDS, knowledge of someone who has HIV/AIDS, knowledge of HIV testing location, and belief that sexual abstinence was a viable alternative in the fight against HIV/AIDS (Table 2). This means that respondents who had knowledge of sexually transmitted diseases, knowledge of HIV testing place, and belief that sexual abstinence is beneficial in prevention of HIV transmission were less likely to desire testing prior to marriage. On the other hand, those that preferred maintenance of confidentiality if one is HIV positive and urban dwellers were more likely to accept HIV testing prior to marriage.

According to the number of respondents who gave a particular response with regard to the different variables studied, it seems that willingness for premarital HIV testing was significantly associated with the all variables studied (Table 3), ie, with belief that sexual abstinence protects from HIV infection and that positive HIV status should be kept in secret, as

Table 2. Factors influencing voluntary premarital human immunodeficiency virus (HIV) counseling and testing in Malawian population*

Variable	Estimate	SE	Wald chi-square	p*	Odds ratio (95% confidence interval)
Intercept [†]	-1.3246	0.358	13.679	<0.001	-
Age	0.0153	0.0073	4.413	0.036	1.015 (1.0-1.03)
Urban residence	0.5515	0.182	9.221	0.002	1.74 (1.22-2.48)
Knowledge of an AIDS patient	-0.6859	0.176	15.143	<0.001	0.50 (0.36-0.71)
HIV testing confidentiality	0.7603	0.176	18.610	<0.001	2.14 (1.51-3.02)
Knowledge of an HIV testing site	-0.634	0.183	12.056	<0.001	0.53 (0.37-0.76)
Knowledge of other sexually transmitted diseases	-0.8452	0.286	8.738	0.0031	0.43 (0.25-0.75)
Sexual abstinence protects from HIV-infection	-0.5888	0.188	9.799	0.0017	0.55 (0.38-0.80)

*Chi-square test, p < 0.05.

[†]The intercept in the model is the constant.**Table 3.** Attitudes of respondents compared with their supporting of premarital testing to human immunodeficiency virus (HIV) infection

Attitude	Supporting premarital HIV testing		p*
	yes	no	
Abstinence: (138 [†])			0.0108
yes	2,405	105	
no	413	31	
Need for confidentiality: (55 [†])			<0.001
yes	487	54	
no	2,394	102	
Knows place where HIV testing is done: (53 [†])			<0.001
yes	2,350	107	
no	533	49	
Knowledge of an HIV/AIDS patient: (56 [†])			0.042
yes	2,353	107	
no	527	49	
Place of residence: (53 [†])			
urban	663	47	
rural	2,220	109	
Knowledge of other sexually transmitted diseases: (57 [†])			<0.001
yes	2,760	137	
no	119	19	

*Pearson's chi-square test.

[†]Missing answers.

well as with knowing an HIV infected person, where one can be tested for HIV, place of residence (urban vs rural), and knowledge of sexually transmitted infections other than HIV.

Discussion

Our results showed a significant association between all the variables studied (belief that abstinence protects from HIV, need for confidentiality, knowledge of place for HIV testing, having known someone with HIV/AIDS, place of residence and knowledge of a sexually transmitted infection other than HIV) and willingness to accept voluntary HIV counseling and testing prior to marriage. This means that people who believe that confidentiality is essential are less likely to accept HIV testing.

There was a significant, although weak, association between increasing age and supporting HIV-testing prior to marriage. It is possible that older people, who were probably already married, supported premarital HIV testing because it would not involve them. It is also possible the older groups were more appreciative of the reality of HIV/AIDS and their support

of premarital HIV testing was just a manifestation of their desire to know one's HIV status prior to marriage.

Individuals living in the urban areas were 1.74 times more likely than rural dwellers to accept voluntary HIV counseling and testing prior to marriage. Although we cannot determine the reasons for this difference on the basis of the current study, this inequality has far-reaching public health implications because over 85% of Malawians live in rural areas.

People who thought that one's HIV serological status, if positive, must be kept secret were 2.14 times more likely to accept HIV testing than those who thought there was no need to keep that finding confidential. Pool et al (23) in a study among pregnant women in rural Uganda found that the women were willing to accept HIV testing if confidentiality was maintained. Perceived lack of confidentiality and fear of stigmatization were the factors that negatively influenced willingness to accept HIV counseling and testing.

Our findings are in some disagreement to that reported by Zachariah et al (24) in their study of rural Malawi, where approximately 77% of participants presenting for voluntary HIV counseling and testing had done so on the encouragement of others who had taken an HIV test. An interesting point is that people required confidentiality regarding HIV test results if they were to undergo HIV testing. Considering that HIV testing has been suggested as a prerequisite for marriage, if marriage is cancelled due to HIV infection of one of the partners, secrecy may no longer be possible to maintain.

We found an inverse relation between the person's desire to take HIV testing and their belief that sexual abstinence was a viable alternative in the fight against HIV/AIDS, knowledge of sexually transmitted diseases other than HIV/AIDS, someone who had HIV/AIDS, and HIV testing location. These results seem contradictory to a common belief that knowledge empowers people to act positively. According to our findings, it seems that knowledge would lead to fear of HIV-testing or a sense of non-vulnerability, such that the need for HIV testing may not be appreciated. A study from Mali (West Africa), on the other hand, reported that knowing someone who had AIDS or had died of AIDS was a major influence for respondents to accept the reality of HIV/AIDS danger as compared with formal educational (25). Maman et al (26) reported that reluctance to undergo HIV testing among

African women was related to fear of partner's reaction, decision making and communication between partners, and partner's attitude toward HIV testing.

Our study was not designed to assess whether there were any differences in perception/responses with regard to tribe and traditional practices of a particular area. This may be important in a country where the different tribal groups have different traditional and cultural practices towards sex and healthcare.

In conclusion, this study suggests that that not all population groups have an equal likelihood of accepting a public health intervention, such as voluntary counseling for HIV/AIDS. It is imperative that HIV/AIDS prevention and control programs take this fact into account, if they are to design interventions that would attract population groups unlikely to use the HIV counseling and testing services. Further research, especially qualitative studies, would be valuable to obtain in-depth information about the reasons why various population groups do not accept premarital HIV counseling and testing.

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Correspondence to:

Adamson S. Muula
Department of Community Health
University of Malawi College of Medicine
Private Bag 360
Chichiri, Blantyre 3, Malawi
amuula@medcol.mw