

## Gender differences in university students' HIV/AIDS-related knowledge and sexual behaviours in Malawi: a pilot study

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### Abstract

A cross-sectional study was conducted among first-year university students in Malawi to determine distributions of HIV/AIDS-related knowledge, and sexual behaviours. A total of 314 (199 male and 115 female) students were eligible to participate, and of these 221 (70.4%) participated in the survey. Generally, levels of HIV/AIDS-related knowledge were similar between sexes. Overall, 68.9% of students of both sexes felt that they knew enough about HIV/AIDS. Altogether, 83.3% of students reported that they knew where to access HIV testing on campus, but only 19.0% reported that they knew their HIV status. Some 60.3% of students who had never been tested intended to have an HIV test. A history of having ever been tested was not associated with sex. Most (68.4%) students felt that they were not at risk of acquiring HIV infection. Overall, 66.8% of students knew where to get a condom on campus, and 38.7% stated that they knew exactly how to use it. About half (52.6%) of the students used a condom at last vaginal sexual intercourse. Having multiple sex partners in the last 12 months was reported by 40.4% of students.

**Keywords:** University students, HIV/AIDS-related knowledge, sexual behaviours, Malawi.

### Résumé

Une étude transversale a été réalisée parmi les étudiants de première année en université au Malawi pour déterminer la distribution des connaissances relatives au VIH/SIDA et les comportements sexuels. Au total, 314 étudiants (199 hommes et 115 femmes) ont été sélectionnés pour y participer. Un total de 221 (70.4 %) sur les 314 étudiants éligibles a participé à l'étude. Généralement, les niveaux de connaissances relatives au VIH/SIDA étaient similaires selon les sexes. Dans l'ensemble, 68.9% des étudiants des deux sexes pensaient en savoir suffisamment sur le VIH/SIDA. En tout, 83.3% des étudiants ont rapporté qu'ils savaient où accéder à un test de dépistage sur le campus et seulement 19.0% des étudiants ont rapporté connaître leur état sérologique. Quelques 60.3% des étudiants qui n'avaient jamais été testés ont essayé de passer un test de dépistage du VIH. Le fait de n'avoir été jamais testé n'était pas associé aux rapports sexuels. La majorité (68.4%) des étudiants pensait ne pas courir le risque d'une infection par le VIH. Dans l'ensemble, 66.8% des étudiants savaient où aller pour se procurer un préservatif sur le campus, et 38.7% des étudiants ont déclaré savoir exactement comment s'en servir. Environ la moitié (52.6%) des étudiants a utilisé un préservatif au cours du dernier rapport sexuel vaginal. Le fait d'avoir eu plusieurs partenaires sexuels au cours des 12 derniers mois a été rapporté par 40.4% des étudiants.

**Mots clés:** Etudiants à l'université, connaissances relatives aux VIH/SIDA, comportements sexuels, Malawi.

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## Introduction

The distribution of HIV infection across the ages in sub-Saharan Africa suggests that females acquire HIV infection much earlier in their lives than men (Ghosh & Kalipeni, 2005; Pettifor, Hudgens, Levandowski, Rees & Cohen, 2007). One explanation for such age disparity in the acquisition of HIV is that there is cross-generational sexual intercourse, where younger women preferentially have sex with older males, who may have higher HIV infection rates compared with young men (Hallett, Gregson, Lewis, Lopman & Garnett, 2007). The Malawi National Statistical Office and ORC Macro (2005) estimated that in the age groups 15 - 19 and 20 - 24 years, 3.7% and 13.2% of females, and 0.4% and 3.9% of males were infected with HIV, respectively. Swidler and Watkins (2007) have suggested that economic imperatives may be driving the transactional nature of sexual exchange in these relationships. It is therefore important to design interventions that are gender sensitive.

Most of the HIV prevalence and sexual behaviour data from Malawi have come from the Demographic and Health Survey, studies of women attending antenatal care (Kumwenda, Hoffman, Chirenje *et al.*, 2006), sexually transmitted diseases care (Zachariah, Harries, Nkhoma *et al.*, 2002), prison inmates (Zachariah, Harries, Chantulo, Yadidi, Nkhoma & Maganga, 2002) and sex workers (Zachariah, Harries, Buhendwa, Spielmann, Chantulo & Bakali, 2003). However, these sources of information may not be representative of university students.

While studies on university students have been conducted elsewhere, it is important to recognise that different settings may have different experiences and behaviours that necessitate the importance of local data. Peltzer, Nzewi and Mohan (2004) found that while only 10.2% of Indian students reported having had sex, 64.1% and 74.9% of South African and US students respectively had sex in the past 12 months. Ike and Aniebue (2007) in Nigeria reported that 70% had not had any HIV testing before. Voluntary testing and counselling (VCT) can be the entry point to HIV prevention intervention programmes, and it would be important to determine its correlates.

We have little information about the levels of HIV/AIDS-related knowledge and sexual behaviour of university students in Malawi and how they relate to sex. We therefore conducted this study to determine the distributions of HIV/AIDS-related knowledge and sexual behaviours among first-year University of Malawi students.

## Methods

### Study design

Data for this study come from a baseline cross-sectional study for an intervention project conducted in 2007, aimed at promoting sexual health among university students in Malawi.

### Sample size and participant recruitment

The sample size was not predetermined. We intended to recruit all first-year students who had not been exposed to on-campus HIV/AIDS awareness programmes. There were a total of 628 first years (398 males, and 230 females). When those students who had attended an HIV/AIDS awareness campaign were excluded, 314 (199 male and 115 female) students were eligible to participate in the survey. We had a convenient sample. The university administration divided students into four groups for the orientation programme. Two groups were available for our survey, while the other two attended an HIV/AIDS awareness programme.

### Ethical considerations

The protocol was reviewed by the HIV/AIDS department at the University of the Western Cape in South Africa, and respective colleges/schools/departments of the participating universities in Malawi, Zambia and Namibia. Students were invited to a briefing session about an HIV intervention programme. Participation in the study was voluntary. These students were then requested to anonymously self-complete the questionnaire.

### Questionnaire

A self-completed questionnaire in English was administered. The items in the questionnaire included the following: socio-demographic characteristics, knowledge of where to access HIV testing on campus, where to obtain condoms, how to use condoms, knowledge on HIV transmission, experience with vaginal and anal sex, perceptions on vaginal and anal sex, use of illicit drugs, transactional sexual intercourse, HIV testing experiences, and forced sex.

### Data analysis

Data were analysed using SPSS for windows Release 14.0.1. We estimated proportions (percentages) of the various relevant attributes. We used the Yates corrected Chi-square test to compare proportions between males and females. When expected frequencies were less than 5, the Fisher's exact test two-tailed probability was reported. The distributions of continuous

variables that were not normally distributed were compared between sexes using the Mann-Whitney U test. A multivariate logistic regression analysis was conducted in order to determine independent predictors for ever been tested for HIV infection. Adjusted odds ratios (AORs) and 95% confidence intervals (CIs) are reported. A result yielding a  $p$  value of  $<0.05$  was deemed statistically significant.

## Results

Out of a total of 314 students who were available to participate in our survey, 221 (70.4%) responded to the questionnaire. Participation rates were 61 (53.0%) for females, and 160 (80.4%) for males. Male (median age 20 years;  $Q_1 = 19$ ,  $Q_3 = 21$ ) respondents were older than females (median age 18 years;  $Q_1 = 17$ ,  $Q_3 = 19$ );  $Z=6.63$ ,  $p<0.001$ ). All participants were single, except one female and six males who were married. Significantly more females (52/61 (85.2%)) than males (105/159 (66.0%)) lived in urban areas (Chi-square = 7.05,  $p=0.008$ ).

### HIV/AIDS-related knowledge

The distributions of HIV/AIDS-related knowledge by sex are shown in Table 1. The levels of knowledge between sexes were similar, except for knowing someone with HIV/AIDS (85.2% females, 60.4% males,  $p<0.001$ ), thinking HIV can be transmitted through oral sex (80.0% females, 52.4% males,  $p=0.015$ ), and thinking HIV can be transmitted through anal sex (95.0% females, 76.5% males,  $p=0.020$ ).

Overall, 68.9% of both sexes felt that they knew enough about HIV/AIDS. About three-quarters of the students disagreed/strongly disagreed that they were sick and tired of hearing about AIDS. Altogether, 83.3% of the students reported that they knew where to access HIV testing on campus, while only 19.0% of the students reported that they knew their HIV status because they had been tested. The majority of students agreed/strongly agreed that they thought they were not at risk of acquiring HIV infection (68.4%). Meanwhile, 15.2% of the students indicated that they would not feel comfortable sharing a toilet with someone with HIV/AIDS. Concerning condoms, 66.8% of the students knew where to get condoms on campus. Only 38.7% of the students stated that they exactly knew how to use a condom.

### HIV/AIDS-related sexual behavioural factors

Table 2 shows the distributions of HIV/AIDS-related sexual behavioural factors by sex. Only ever had vaginal sex (16.9%

females, 46.3% males,  $p<0.001$ ), and ever been tested for HIV infection (13.3% females, 29.6% males,  $p=0.022$ ) were significantly associated with sex. However, after adjusting for age, residence (urban or rural), and knowing someone with HIV/AIDS, no significant association between ever been tested for HIV infection and sex was observed (OR=0.72, 95%CI (0.45, 1.15);  $p=0.170$ ).

Concerning lifestyles, 2.7% of students smoked cigarettes, while 21.5% of the students drank alcohol. Overall, 1.8% of the students had anal sex, 20.3% had oral sex, 3.1% had transactional sex, 3.6% had sexual intercourse with a partner of the same sex, and 1.8% had sexual intercourse after using illicit drugs. The proportions of students who ever forced anyone to have sex, and who had ever been forced to have sex were 11.5% and 16.7%, respectively. Having multiple sex partners in the previous 12 months to the survey was reported by 40.4% of the students. Among students who ever had vaginal sex, 52.6% of them had used a condom at last vaginal sexual intercourse. Among students who had never taken an HIV test, 60.3% of them intended to have an HIV test.

## Discussion

In our study we found, generally, no significant differences in HIV/AIDS-related knowledge between sexes. A fifth of students reported that they knew their HIV status, and 60.3% of students who had not been tested intended to be tested. Two in three students felt that they were not at risk of acquiring HIV infection, and knew where to get condoms on campus. A third of students reported knowing exactly how to use a condom. Condom use rate at last vaginal sexual intercourse was 52.6%. Having multiple sex partners was common among students.

We found a higher proportion of males than females who agreed/strongly agreed that they knew exactly how to use a condom. Similarly, Peltzer (2001) reported that male students at a university in South Africa were more likely to report correct condom use than females. Male condoms are worn by (insertive) men and partners may not know how to use them correctly.

We also found that males were less likely to know someone with HIV compared with females. It is unclear why this may be the case. One possibility though is that since women are the main primary health care givers, they may be more likely to be exposed to ill individuals (including HIV-infected persons) than men.

The Knowledge-Attitude-Practice (KAP) model of health behaviour suggests that individuals are able to intentionally change their behaviour if they have adequate information about a health-related issue (Fishbein & Ajzen, 1975). The KAP model, although not explicit as to how behaviour may eventually change, proposes that humans are rational beings who will make decisions based on the information that they have. Although this theory is limited in some sense, in that intentional behavioural change may occur even in the absence of adequate information, the KAP model has been used in HIV/AIDS research. We found a reasonable knowledge base about HIV among our sample, but exposure to HIV risk behaviours was common too.

Although only less than 2% of students ever had anal sex in our study group, students who thought that HIV cannot be transmitted through anal sex, might likely engage in such sex and not use condoms. Lowray (2006) argues that we can no longer continue to characterise the sexual practices of communities in Africa as purely heterosexual or peno-vaginal. In this study we explored the possibility of college students having same-sex partners. Muula (2007), in his review of Malawi's newspapers, reported that public discourse about same sexual practices in Malawi was problematic. Wade, Kane, Diallo, *et al.* (2005) have reported on the correlates of HIV infection among men having sex with other men in West Africa. In this paper, we do not intend to explore the issue of same-sex relationships, but rather to highlight the fact that we indeed found some study participants in our setting who reported to have ever engaged in this practice. A recent study of 100 homosexuals in Malawi, in fact, revealed that at least 15% of them were in schools (Ntata & Nyadani, 2007, unpublished). Also interesting was the fact that 41% of the respondents defined themselves as bisexual. This suggested that there could be significant proportions of people in Malawi who have sex with both men and women. In the case of homosexual men, anal sex is quite common. The public health implications of this finding, especially with regard to the transmission of HIV and other sexually transmitted diseases, are quite serious. Bisexual men are unlikely to reveal their sexual orientation to both sexes, raising questions of their ability to discuss safe sex openly.

We were interested to assess the prevalence of smoking, because data from other settings seem to suggest that smoking is associated with sexual intercourse among adolescents and young people (Kuzman, Simetin & Franelic, 2007). Overall, we found a relatively low prevalence of current smoking among this cohort, and the impact of these lifestyles may not be significant in the transmission of HIV.

Perception of risk may be a reliable indicator of actual risk in some settings. Roberts and Kennedy (2006) found that women

who perceived themselves at lower risk of contracting HIV were found not to engage in 'high'-risk behaviour. However, there are several ways to transmit HIV, and a realistic attitude is that of assuming that everyone is at risk of acquiring HIV infection.

We assessed the knowledge of students regarding where they could obtain HIV testing on campus. It was perceived that knowledge of such a site was important, as it would be one step towards testing for those who intended to test. The proportion of students who knew where to obtain an HIV test on campus was likely to go up with the commencement of the intervention.

Over 10% of students reported ever having forced anyone to have sex, and ever been forced to have sex. This finding is of public health importance because forced sex may be associated with non-use of condoms (Dude, 2007). We suggest further exploration of this phenomenon among both males and females in the intervention.

It has been reported in other settings that young adults and adolescents may engage in anal sex as a form of contraception (Houston, Fang, Husman & Peralta, 2007). We did not ask the reasons behind any of the sexual practices in our study. We suggest that future studies aim to assess the motivations for some of the sexual practices that we have documented in the current study.

### Limitations of the study

Our study had several limitations. Our sample was not random, and we had a poor response rate among females, and as such our results may have poor internal validity. We, however, do not have reasons to believe that the findings in the current study would be very different among the students who did not take part in our study. We did not attempt to define some terms, such as 'forced sex', and 'anal sex', and as a result a significant proportion of students indicated in their responses that they did not know what these acts were. Hence we lost some power in our study. Also, study participants were those who responded to an invitation to this project. To the extent that the demographic and sexual behaviours of this group are different from those who did not wish to participate, our estimates will be biased.

### Conclusion

There is room for improvement in the levels of HIV/AIDS-related knowledge, and in creating positive sexual behaviour among Malawian university students in the prevention of HIV transmission. As there were no major differences between sexes in knowledge levels, and sexual behaviours, it would appear that HIV education and behavioural interventions may not have resulted in inequities in these behaviours in Malawi.

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