

## **Sexual practices conducive to HIV transmission in Southwest Nigeria**

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### **ABSTRACT**

Several studies have shown that the AIDS pandemic in sub-Saharan Africa is associated with prevalent sexual practices that facilitate HIV transmission. The objective of this study was to determine the influence of knowledge of transmission routes for HIV in relation to high-risk sexual behaviour and to find factors significantly associated with condom use among sexually active respondents. High-risk sexual activities were assessed among 208 Nigerians using self-administered questionnaires, in three cities of Southwest Nigeria: Ado-Ekiti, Ibadan and Lagos. Knowledge of HIV transmission routes, high-risk sexual behaviour and condom use were measured. A majority of the sexually active respondents, significantly more males than females, had two or more sexual partners. The highest proportion of sexually active respondents who perceived themselves at high risk of being HIV-positive were aged 19 or below, had poor knowledge of the modes of transmission for HIV and had never used condoms. Using logistic regression analysis, significant determinants of condom use among sexually active respondents were having sexual relations with a prostitute and being in a stable sexual relationship, and self-perception of testing positive for HIV if tested. In urban Southwest Nigeria, there is quite a high level of knowledge of HIV and AIDS, and self-reported condom use. However the non-use of condoms by the adolescents is disturbing; reproductive health and AIDS education programs need to be especially targeted at this group since they are at greatest risk of contracting or spreading HIV. A reasonable generalization from urban Southwest Nigeria to the rest of this region can be made. With the rapid spread of HIV infection in all sub-Saharan African countries, adequate and representative studies on high-risk behaviour are needed in Nigeria.

Of all the modes of transmission for HIV infection, sexual transmission is predominant in sub-Saharan Africa, accounting for as many as 90 per cent of all HIV infections (De Kock *et al.* 1994). It is currently estimated that about 14 million people in sub-Saharan Africa are infected with HIV, over 60 per cent of the global total (*Weekly Epidemiological Record* 1997). Previous studies in sub-Saharan Africa have found the risk factors for HIV to be infections with sexually transmitted diseases (STDs) and genital ulcers, multiple sexual partners, lack of circumcision in men, frequent sex with prostitutes, use of herbs and other substances for enhancement of sexual pleasure and exposure of men to menstrual blood (Malamba *et al.* 1994; Hunter *et al.* 1994; Bwayo *et al.* 1994; Mbugua *et al.* 1995; Runganga and Kasule 1995).

The distribution of self-reported number of sexual partners in Nigeria among sexually active individuals has been shown to be similar to those reported in many East and Southern African countries (Orubuloye, Caldwell and Caldwell 1993), but there are sharp differences in the reported number of HIV infections between Nigeria and most East and Southern African countries. Nigeria reportedly has an estimated 1 million people infected with HIV (WHO

1995). This estimate represents between one and two per cent of the total sexually active population, while estimates among the sexually active population in some East and Southern African countries are higher than 30 per cent (US Bureau of the Census 1997). Knowledge of AIDS as an incurable disease is widespread in sub-Saharan Africa, but sexual behaviour putting this knowledge into practice is known to be lacking (Orubuloye, Caldwell and Caldwell 1990; Mbizvo *et al.* 1994; Okojie, Ogbeide and Nwulia 1995).

It is essential to carry out regular KAP surveys of high-risk sexual behaviour to facilitate education on health and on HIV prevention strategies. This probably remains the best way of controlling the spread of the infection. This study used self-administered questionnaires to determine the present HIV-transmission related practices among sexually active respondents in Southwest Nigeria.

## **Methods**

### ***Sampling criteria***

The population selected for this study consisted of adolescents, young adults and mature adults from three cities of Southwest Nigeria: Ado-Ekiti, Ibadan and Lagos. The participants were randomly selected from members of the general public, students at senior secondary schools and tertiary institutions, and workers in the public and private sectors.

### ***Questionnaire design***

The study questionnaire was structured to find out respondents' knowledge of methods of infection with HIV. The total attainable number of points was 10 and respondents who indicated sexual intercourse, injections and blood transfusions as possible ways of acquiring the infection were awarded 6, 2 and 2 points respectively. A breakdown of the classification of knowledge of modes of HIV transmission is as follows: no knowledge: 0 points; poor knowledge: 2-4 points; good knowledge: 6-8 points; complete knowledge: 10 points.

### ***Statistical analysis***

Data were analysed using the **Statistical Package for the Social Sciences (SPSS/PC)**. The major analyses were restricted to sexually active respondents where 'sexually active' referred to those who reported ever having sexual intercourse. Proportions were compared using the chi-square test, and statistical significance reported when P-values of less than 0.5 were encountered. Factors significantly associated with condom use using univariate analysis were further included in a multivariate model and then subjected to stepwise logistic regression to find significant determinants of condom use as incorporated in a multivariate model. For this odds ratios (Ors) and 95 per cent confidence intervals (CLs) were used in establishing the significant factors in condom use.

## **Results**

Four hundred people in the three selected cities were approached to participate in the study. Only 208 (52%) of this total eventually volunteered to participate; 29(13.9%) from Ado-Ekiti, 72(34.6%) from Ibadan and 107(51.5%) from Lagos. One hundred and ninety-seven (94.7%) completed the questionnaire.

### ***Demographic features***

A majority of the respondents were male (56.4%); 66.5 per cent of respondents were sexually active. Knowledge of AIDS (91.4%), condom use (95.9%) and AIDS being an incurable disease (79.4%) was quite high; 52 respondents knew or had known someone with AIDS. Figure 1 shows the distribution of sexually active men and women according to their knowledge of the modes of HIV transmission; this was high among both sexually active men and women. Fifty-two per cent of men and 70 per cent of women were completely knowledgeable on the modes of HIV transmission; 36 per cent of men and 23 per cent of women had a good knowledge.

### ***Number of sexual partners***

Most sexually active respondents in all age groups had two or more sexual partners. Age, education and marital status were not significant in the distribution of the number of sexual partners; significantly more men than women (84.7% and 61.4%,  $P < 0.01$ ) had more sexual partners (Table 1).

### ***Condom use***

The greatest proportion of consistent condom users had a good knowledge of the routes for HIV transmission, while the highest proportion of sexually active individuals who had never used condoms had a poor knowledge. More people who had previously contracted a sexually transmitted disease (33.3%) than those who had never done so (23.9%) always used condoms for sex. In a similar pattern, twice as many sexually active respondents who knew that a condom could be used to prevent HIV as those who did not know, consistently used condoms (Table 2).

Overall, condom use was reasonably high among the sexually active respondents (79.4%) with approximately 55 per cent reporting inconsistency and 25 per cent reporting consistency in condom use. Significantly, the highest proportion of sexually active respondents who perceived themselves at high risk of being HIV-positive were aged 19 years or below, had only primary educational qualification, had poor knowledge of the modes of HIV transmission, and had never used condoms.

### ***Factors influencing condom use among sexually active respondents using logistic regression***

When univariate analyses were carried out, age, education, knowledge of modes of transmission for HIV, being in a stable sexual relationship, history of sex with a prostitute, number of sexual partners, perception of AIDS risk in Nigeria and self-perception of being found HIV-positive if tested were all significantly associated with condom use. These significant factors were later subjected to a stepwise logistic regression analysis. The significant determinants of condom use among the sexually active respondents were sex with a prostitute (OR = 49.10, 95% CI = 2.73-884.5) and being in a stable sexual relationship (OR = 10.16, 95% CI = 2.14-48.38). Other significant factors associated with condom use were no or slight self-perception of testing positive for HIV if tested (OR = 3.2386, 95% CI = 1.16-9.05) and medium self-perception of testing positive for HIV if tested (OR = 0.1057, 95% CI = 0.02-0.46) compared to those with a high self-perceived HIV-positive risk (Table 3).

**Table 1**  
**Distribution of proportion of sexually active individuals according to number of sexual partners by demographic characteristics**

	Number of sexual partners <sup>a</sup>			N
	0	1	2 or more	
<b>Age<sup>b</sup></b>				
19 or less			100	7
20-29	21.7	11.6	66.7	69
30-39	7.5	10.0	82.5	40
40 plus		6.7	93.3	15
<b>Sex</b>				
Male	10.6	4.7	84.7	85
Female	18.2	20.5	61.4	44
<b>Education</b>				
Primary			100	4
Secondary		12.2	12.2	75.6
Tertiary	15.5	9.5	75.0	84
<b>Marital status</b>				
Single	14.8	9.1	76.1	88
Married	33.3		66.7	3
(monogamous)				
Married	6.5	16.1	77.4	31
(polygamous)				
Separated/widowed		14.3		85.7

Notes: <sup>a</sup> In the last 2 years. <sup>b</sup> All other totals exclude two missing values.

## Discussion

The continued increase in the prevalence of HIV in sub-Saharan Africa has become a threat to life expectancy in many countries of the region. Recent KAP surveys carried out in Nigeria have revealed that high-risk sexual behaviour is still being practised in some parts of the country among certain sentinel groups (Asindi, Ibia and Young 1992; Okojie *et al.* 1995; Araoye, Onile and Jolayemi 1996).

Being in a stable sexual relationship was a significant determinant of condom use. This, coupled with self-reporting of two or more sexual partners, suggests that condom use would probably be most prevalent outside stable sexual relationships: with casual partners or commercial sex workers. Knowledge of the correct routes for HIV transmission appears to have played a role in condom use frequency. Respondents who used condoms consistently were the most knowledgeable on the correct transmission routes for HIV and were also mostly aware of the role of condoms in the prevention of HIV. On the other hand, sexually active respondents who had never used condoms were the least knowledgeable on HIV transmission. To some extent knowledge of HIV/AIDS is being put into practice in Southwest Nigeria through condom use; this practice could reduce the spread of HIV.

In many parts of urban Southwest Nigeria, there have been public campaigns promoting the use of condoms and education on the transmission of HIV. The most encouraging finding of this study was the high overall use of condoms among the sexually active respondents. On

the other hand, the most disturbing finding was that many adolescents had never used condoms, thus being the group most likely to spread HIV. This is consistent with Kapiga's (1992) finding in Tanzania that adolescents were at greatest risk of spreading HIV. It is therefore recommended that extensive health education be targeted at Nigerian adolescents in order to avert a major epidemic of AIDS.

**Table 2**  
**Distribution of the frequency of condom use according to known HIV risk factors for sexually active individuals**

	Frequency of condom use			N
	Never	Sometimes	Always	
<b>Knowledge of AIDS<sup>a</sup></b>				
None (0 points)	80.0	20.0	5	8
Poor (2-4 points)	37.5	50.0	12.5	8
Good (6-8 points)	25.6	46.2	28.2	49
Complete (10 points)	12.2	60.8	27.0	74
<b>Knowledge of condom use to avoid AIDS<sup>b</sup></b>				
No	28.6	57.1	14.3	14
Yes	16.4	55.5	28.2	110
<b>Number of sexual partners<sup>c</sup></b>				
0	16.7	44.4	38.9	18
1	7.7	69.2	23.1	7.3
2 or more	18.8	57.3	24.0	96
<b>History of STD<sup>d</sup></b>				
No	21.7	54.3	23.9	92
Yes	6.1	60.6	33.3	33

Notes: <sup>a</sup> Excludes 5 missing values. <sup>b</sup> Excludes 7 missing values. <sup>c</sup> Excludes 4 missing values.

<sup>d</sup> Excludes 2 missing values.

Findings from several studies carried out in East and Southern Africa have shown a low prevalence of condom use (Kapiga 1992; Konde-Lule and Sebina 1993; Moyo *et al.* 1993; Munyika, Kvale and Klepp 1993; Pattulo *et al.* 1994; Mbizvo *et al.* 1994; Kapiga *et al.* 1995; Ashebir 1996). Some of these studies have also shown that despite the disease, there was a reluctance by men to use condoms except among those with a high self-perceived HIV-positive risk, who are likely to be the most knowledgeable on HIV transmission.

This study shows that the prevalence of high-risk sexual behaviour reported in Southwest Nigeria is lower than in previous studies in Nigeria and some other sub-Saharan African countries; it is possible that there is a decline in high-risk sexual behaviour in Southwest Nigeria. Results from previous findings in Southern Nigeria indicating high-risk sexual behaviour among certain groups may have been due to the way these studies were conducted, which is different from that for this study. If the sexual practices reported in this study are representative of Southern Nigeria as a whole, it could be asserted that high-risk sexual practices conducive to HIV transmission have declined in Southern Nigeria. This is likely to be the case if patterns of high-risk sexual behaviour in the urban communities of Southwest Nigeria are similar to those in the rural communities. Meanwhile, extensive KAP surveys are needed to determine the nationwide trends in sexual behaviour. The fact that a

quarter of the respondents knew someone infected with HIV may have caused them to modify their sexual behaviour. The findings may also indicate some success in the efforts of the Government and NGOs to educate the public about AIDS.

**Table 3**  
**Significant determinants for ever use of condom among sexually active respondents using logistic regression**

	OR(95% CI)
<b>Stable sexual relationship</b>	
No	1.00
Yes	10.16(2.14 – 48.38)
<b>History of sex with prostitute</b>	
No	1.0
Yes	49.10(2.73 – 884.50)
<b>Self-perception of HIV risk if tested</b>	
None / slight	3.24(1.16 – 9.058)
Medium	0.11(0.11 – 0.46)
High	1.00

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