Condom Use and the Accuracy of AIDS Knowledge In Côte d'Ivoire

CONTEXT: Condom use remains low in Côte d'Ivoire, despite an increasing prevalence of HIV and widespread awareness of how the virus is transmitted. Information is needed about characteristics that predict condom use and about the role of AIDS knowledge and sex differences in the use of condoms.

METHODS: Data from the 1994 Côte d'Ivoire Demographic and Health Survey were analyzed for respondents who had had sex in the two months before the survey. Logistic regressions were performed separately by sex to determine whether the accuracy of men's and women's knowledge about AIDS predicted condom use at their most recent sexual intercourse.

RESULTS: Accuracy of knowledge about AIDS did not significantly predict condom use. For male respondents, the odds of condom use at last intercourse were significantly lower among those aged 35 or older than among those aged 15–19 (odds ratios, 0.3–0.5). The odds were also lower among married men (0.4) and those who reported friends, family or neighbors as their only source of AIDS knowledge (0.5). Compared with uneducated men, men with secondary or higher education were significantly more likely to report condom use (1.7). Among women, those aged 25 or older had significantly lower odds of condom use at last intercourse than those aged 15–19 (0.2–0.6). The odds of use were significantly reduced among women who were married (0.2) and those who had learned about AIDS from family, friends or neighbors or from television or radio (0.3–0.6); however, the odds were significantly higher for women with secondary or higher education than for uneducated women (2.2).

CONCLUSION: The level of accuracy of AIDS knowledge did not predict the likelihood of recent condom use in this sample. Efforts to increase educational attainment in Côte d'Ivoire may be more effective in increasing condom use than a focus on improving the accuracy of AIDS knowledge.

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Given the AIDS pandemic across Africa, health professionals and researchers are trying to understand the social context in which people are likely to take precautions to protect themselves against HIV infection. Because HIV has spread across Africa mostly through sexual contact, research has focused on condom use—particularly in southern and eastern Africa, where as many as one in four adults are HIV-positive. Although the prevalence of HIV infection among adults in the West African nation of Côte d'Ivoire had reached approximately 10% by 1999, and only about 1% of Ivoirian adults reported using condoms, the determinants of condom use in the country have not been investigated extensively.

Descriptive statistics from the 1994 Demographic and Health Survey (DHS) conducted in Côte d'Ivoire reveal that when asked how HIV is contracted, 92% of men and 80% of women mentioned at least one means of sexual transmission. However, when asked about their inclination to use condoms, only 23% of Ivoirian men and 7% of Ivoirian women indicated that they had ever used a condom.⁴ Thus, information about links between knowledge and condom use is important for the development of appropriate interventions.

By Sara L. Zellner

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SOCIAL CONTEXT

Although family planning and AIDS awareness programs in Africa promote the use of condoms, studies have revealed many obstacles to use. Negative attitudes about condoms are a major barrier. For many Africans, condoms suggest unfaithfulness and mistrust. Because of such beliefs, personal and emotional concerns often supersede the choice to use condoms. And even if a man has a positive attitude about condoms, they may not be readily available to him. For example, a study in South Africa found that condom availability varied greatly according to the type of distributor, and could be hindered by short business hours and the attitudes of providers. 6

Another barrier to condom use is that African men control much of the decision-making regarding sexual encounters. For example, a cohort of men from Zimbabwe expressed the belief that women need their partners' permission to use contraceptives, and a sample of men from Uganda conveyed concerns about retaining control over their female partner. As a result of this male-female power differential, women may find themselves in situations that increase their risk for sexually transmitted infections (STIs), including HIV infection, despite knowledge they may have

about how to protect themselves.

Because of patriarchy and a history of polygamy, extramarital relationships are common in many African societies.⁹ The risk of such relationships is increased by the frequent migration of African men to seek seasonal or long-term employment. Meanwhile, the stigma associated with condom use inhibits persons in extramarital sexual relationships from protecting themselves and their partners. In a study of extramarital relations that focused mostly on countries in Sub-Saharan Africa, regular condom use during sexual encounters was uncommon. 10 Moreover, Mbizvo and Bassett have reported that the risk and incidence of STIs in Sub-Saharan Africa increased as labor migration of husbands became necessary and, consequently, the number of male and female sexual partners increased. 11 In addition, in a study of male truck drivers in Nigeria, 72% of married men reported having multiple extramarital sexual partners, and 60% reported being unwilling to use condoms because they did not like using them or were unaware of the risks of unprotected sex. 12

Extramarital liaisons include exchanges of sex for money or goods and may or may not involve partners who are sex workers. Although many prostitutes and their clients know that condoms can guard against STIs, 13 condom use in commercial sex encounters is relatively rare. In one South African study, only 29% of urban prostitutes and 14% of suburban prostitutes reported condom use in sexual encounters with their clients. 14 Clients of sex workers may use various tactics-from financial incentives to violence-to avoid using condoms in solicited sexual encounters. Female sex workers, who lack the leverage to convince clients to use condoms, may have little choice but to put themselves and their partners at risk for HIV and other STIs. Similarly, in situations in which men provide gifts or financial support to young women in exchange for sex, young women may compromise on condom use to receive material goods. 15

CONDOM USE IN CÔTE D'IVOIRE

For the most part, Ivoirian men's attitudes toward condom use and the social context of sexual relationships reflect patterns seen throughout Africa. Among women, the condom is the most widely known method of contraception; 16 however, women have little power to advocate its use.

One study reported that married men were more likely to use condoms with extramarital sexual partners than with their wives. ¹⁷ Another study, however, found that men often seek out prostitutes who do not insist on condom use. ¹⁸ With almost 70% of sex workers carrying HIV, ¹⁹ the consequences of this lack of precaution are staggering: One study estimated that the odds of acquiring HIV were 1.7–2.7 times as high among men who had had unprotected sexual contact with a female sex worker as among those who had not. ²⁰ Not surprisingly, in a study of 490 HIV-infected

men in Abidjan, Côte d'Ivoire, approximately half of the participants' wives were infected with HIV.²¹

Because of its relatively strong economy, especially in the agricultural and industrial sectors, Côte d'Ivoire has seen substantial increases in the number of migrant workers from neighboring West African nations. As a result, many women come to Côte d'Ivoire to earn money as commercial sex workers.²² In cities such as Abidjan, where approximately 40% of the total population is foreign-born,²³ the mix of customs and cultures challenges the capabilities of AIDS awareness programs, which may not be suited to effectively convey their messages in multiple languages and dialects. Furthermore, the large number of migrant workers creates conditions for widespread dissemination of disease. The country's HIV epidemic is especially concentrated in the main agricultural and industrial centers-Abidjan, Bouake and Daloa-largely as a consequence of transmission involving transient populations.²⁴

AIDS KNOWLEDGE AND CONDOM USE

No previous research in Côte d'Ivoire has explored the effects of Ivoirians' knowledge of AIDS on their likelihood of using condoms. Elsewhere in Africa, research on links between AIDS knowledge and condom use has produced mixed results. An examination of AIDS knowledge and sexual behavior among secondary school and college students in Tanzania found that participants with "good" knowledge of how HIV is transmitted were unlikely to use condoms despite their awareness of the increased risk for HIV infection from such behavior.²⁵ Conversely, among adults in a cross-sectional study in rural Senegal, persons with "good" knowledge* of AIDS were more likely than persons without "good" knowledge to use condoms. ²⁶ Data from longitudinal studies provide insight into the effect of acquisition of AIDS knowledge on condom use over time. For example, a study of gold miners in South Africa showed that as the male participants became more knowledgeable about AIDS, their use of condoms increased with all types of sexual partners.²⁷ Moreover, a study in Senegal of female sex workers and their male clients showed that after two years of intervention, clients' AIDS knowledge and consistent condom use significantly increased, as did sex workers' efforts to use condoms. 28

Why would AIDS knowledge and condom use be linked? From a theoretical standpoint, knowledge can be used as a form of self-empowerment. According to the AIDS Risk Reduction Model, knowledge of AIDS is necessary to recognize one's behavior as high risk and then to take action to change that behavior. Accuracy of knowledge may therefore influence the degree to which persons acknowledge their behavior as risky and the types of precautions they take to reduce their risk. For example, persons who believe they are at risk for HIV infection and know that condom use reduces that risk can adopt measures to protect themselves, whereas persons who think that HIV is spread by mosquitoes will not know of appropriate measures.

This article contributes to the literature on AIDS knowledge and condom use, focusing on the data on sexually active

^{*}The reports by Masawayna and Lagarde and their colleagues do not clearly define "good" knowledge, but indicate that it is measured by additive AIDS knowledge summary scores (sources: references 25 and 26). Thus, "good" knowledge probably reflects a high cumulative number of correct responses to questions on HIV.

respondents in the 1994 Côte d'Ivoire DHS. The current study started with the hypothesis that having more-accurate knowledge about how HIV is transmitted would be associated with a greater likelihood of having used a condom at last sex.

METHODS

The 1994 Côte d'Ivoire DHS collected basic information on households as well as demographic data and information on contraceptive practices and knowledge from nationally representative samples of women and men. A supplement included in the survey also inquired about knowledge of AIDS, protective sexual behavior and condom use.

To compare the data on men and women and to obtain relevant information on television and radio ownership, data from the DHS women's and men's individual surveys were merged with those from the DHS household survey. Because the current study examines AIDS knowledge and condom use at last sex, the analysis was restricted to Ivoirians who responded that they had heard of AIDS and had had sexual intercourse in the two months before the survey. The sample for the current analysis comprised 5,653 participants (4,429 women and 1,224 men).

In previous research on AIDS knowledge, 30 the degree of AIDS knowledge was evaluated by awarding a respondent a point for each accurate response given about AIDS. However, that method, which measures accuracy on the basis of the quantity of correct responses, does not account for incorrect responses that could potentially inhibit respondents from effectively protecting themselves and others from contracting HIV. To better examine the varying degrees of AIDS knowledge, the independent variable in this study was derived from two open-ended survey questions that measured the accuracy of knowledge respondents had about AIDS: 1) "How can one become infected with AIDS?" and 2) "How can one avoid contracting AIDS?"31 Individual-level data were coded according to the accuracy of the participants' responses: all accurate, partly accurate or all inaccurate.

To examine the influence of sources of AIDS information, an independent variable was created on the basis of study participants' responses to the question "Where did you hear about AIDS?" The responses fell into seven main categories: television or radio; friends, family or neighbors;

TABLE 1. Percentage distribution of sexually active women and men knowing of AIDS, by source of information, 1994 Demographic and Health Survey, Côte d'Ivoire

Source	Women (N=4,429)	Men (N=1,224)
TV/radio only	20.1	24.7
Family/friends/neighbors only	30.8	7.6
TV/radio and family/friends/neighbors	24.8	18.6
TV/radio and newspapers/magazines	2.9	13.7
TV/radio, family/friends/neighbors and		
newspapers/magazines	2.1	4.3
Other	19.3	31.1
Total	100.0	100.0

TABLE 2. Percentage distribution of women and men, by selected characteristics

Women

Men

Characteristic

	(N=4,429)	(N=1,224
Accuracy of AIDS information		
Accurate	73.7	78.7
Mixed*	13.2	18.1
Inaccurate	13.2	3.2
Age		
15–19	20.6	11.1
20-24	21.7	18.0
25-29	19.6	19.7
30-34	15.5	18.8
35-39	10.2	14.6
40–44	7.1	10.8
45–49	5.3	7.0
Marital status		
Single	22.0	38.1
Married	71.5	60.4
Formerly married	6.5	1.5
Religious affiliation		
Muslim	33.8	37.3
Catholic	24.3	24.8
Protestant	18.9	13.0
Traditional	4.5	7.9
None	18.6	17.0
Type of region		
Rural forest	36.3	36.1
Urban forest	17.2	15.7
Urban savannah	16.4	15.4
Rural savannah	14.7	16.4
Abidjan	15.5	16.3
Formal education		
None	56.0	35.0
Primary	27.6	25.4
≥secondary	16.4	39.7
Owns TV		
Yes	30.6	28.4
No	69.4	71.6
Owns radio		
Yes	62.5	66.3
No	37.5	33.7
Total	100.0	100.0

^{*}Respondents who listed both accurate and inaccurate responses.

newspapers or magazines; posters or public campaigns; health clinics or health workers; spouse or partner; and "other" sources.

Because respondents were permitted to identify multiple sources of information, the outcome data included numerous combinations of these sources. The majority of these combinations fell into five categories, leaving a residual group of "other" combinations* that was used as the reference category (Table 1).

Table 2 shows the distribution of respondents by each of the social and demographic characteristics that served as independent variables. Women constituted almost four-fifths of the total sample. The majority of women (72%)

^{*}Individually, most of these combinations represented only a few cases and accounted for fewer than 2% of responses.

TABLE 3. Odds ratios from logistic regression predicting men's condom use at last sex, by selected characteristics, according to set of variables included in regression

Variable	Knowledge only	Plus social/ demographic factors	Plus education	Plus sources of knowledge
Accuracy of AIDS information				
Accurate (ref)	1.00	1.00	1.00	1.00
Mixed	1.12	1.06	1.02	1.00
Inaccurate	†	†	†	†
Age				
15–19 (ref)	na	1.00	1.00	1.00
20–24	na	0.96	1.05	1.03
25–29	na	0.71	0.80	0.79
30–34	na	0.69	0.75	0.70
35–39	na	0.49*	0.56	0.52*
40–44	na	0.29**	0.35**	0.32
45–49	na	0.27**	0.31*	0.31*
Marital status				
Single (ref)	na	1.00	1.00	1.00
Married	na	0.37***	0.39***	0.39***
Formerly married	na	0.97	1.06	1.07
Tomlenymameu	IIa	0.97	1.00	1.07
Religious affiliation		1.00	1.00	1.00
Muslim (ref)	na	1.00	1.00	1.00
Catholic	na	1.44*	1.16	1.12
Protestant	na	1.02	0.83	0.87
Traditional	na	0.96	0.87	0.89
None	na	0.96	0.81	0.86
Type of region				
Rural forest (ref)	na	1.00	1.00	1.00
Urban forest	na	0.77	0.78	0.79
Urban savannah	na	0.56**	0.62*	0.68
Rural savannah	na	0.58	0.63	0.71
Abidjan	na	0.82*	0.81	0.80
Formal education				
None (ref)	na	na	1.00	1.00
Primary	na	na	1.01	0.97
≥secondary	na	na	1.99***	1.72**
Radio ownership	na	na	na	1.29
TV ownership	na	na	na	1.14
Sources of AIDS information				
Other sources (ref)	na	na	na	1.00
TV/radio only	na	na	na	0.72
Family/friends/neighbors only	na	na	na	0.45*
TV/radio and family/friends/neighbors	na	na	na	1.00
TV/radio and newspapers/magazines	na	na	na	1.04
TV/radio, family/friends/neighbors and				
newspapers/magazines	na	na	na	1.49
–2 log likelihood:	1406.11	1250.46	1214.65	1200.86
-				

^{*}p < .05.**p < .01.***p < .001.†No men with inaccurate knowledge had used condoms. *Notes*: na=not applicable. ref=reference category.

and men (60%) in the sample were married; married persons are more likely than their unmarried counterparts to have a steady sexual partner. Approximately three-quarters of respondents were Muslim or Christian, and about half lived in rural areas. One-third of men and one-half of women had had no formal schooling. Two-thirds of men and women lived in a household with a radio, and almost one-third owned a television.

The dependent variable in the logistic regressions measures condom use at last sex. Age was included as an independent variable because previous research has shown that age plays a significant role in condom use;³³ this vari-

able is categorized according to five-year intervals.* Education was measured by comparing respondents who had had no education with those who had had primary or secondary schooling; the influence of this characteristic on condom use previously has been shown to significantly predict condom use.³⁴ The largest cities in Côte d'Ivoire have had the highest prevalence of HIV infection and have probably seen the most efforts to prevent the spread of HIV, 35 therefore, regional comparisons are included in the model.† The model also examines the effects of television and radio ownership; because AIDS-awareness programs are often broadcast on television and radio, exposure to these media has proven to be an important factor.³⁶ Finally, marital status is coded as a binary variable; previous research suggests that married couples are less inclined than other couples to use condoms.37

Because the characteristics vital to condom use may differ between men and women, a combined analysis for men and women was compared with models run separately according to sex to determine which of these two options would be most appropriate for the logistic analyses. According to log likelihood ratios, the separated models displayed a better fit to the data (1205.2 and 1834.9, –2 log likelihood) than did the combined model (3347.8, –2 log likelihood). Thus, the association between accuracy of AIDS knowledge and use of condoms was analyzed separately for each sex. Further analyses were performed to control for social and demographic characteristics, education, radio and television ownership and sources of AIDS information. All analyses were conducted by using SAS software, version 8.0.

RESULTS

Table 3 shows results from the analyses of men's condom use at last sex. In the initial analysis, no data are reported on the group of men who had no accurate knowledge about AIDS, because none of the respondents in this category had used a condom at last intercourse. The odds of having used a condom did not differ significantly by accuracy of information about AIDS. The addition of social and demographic variables to the model had little effect on the relationship between accuracy of AIDS information and condom use. However, the odds of use were significantly lower among married men than among single men (odds ratio, 0.4). The odds decreased as age increased and were significant for men aged 35 or older (0.3-0.5). Living in the urban savannah or in Abidjan decreased the odds of condom use by 44% and 18%, respectively, whereas being Catholic increased the odds by 44%. Only the effects of age and marital status

^{*}Because birth records are not kept in Africa, age reporting may be unreliable (source: Rutstein SO and Bicego GT, Assessment of the quality of data used to ascertain eligibility and age in the Demographic and Health Surveys, in: An Assessment of DHS-I Data Quality, Columbia, MD, USA: Institute for Resource Development/Macro Systems, 1990). However, grouping participants into five-year age categories reduces this problem.

[†]The variable of region is divided into five different areas. The first is Abidjan, the largest city in Côte d'Ivoire. The rest of the country is then divided topographically into forest (the southern half of the country) and the savanna (the northern half); these regions are then separated into rural and urban areas.

retained their significance in the final model, however.

Although the effect of the accuracy of men's AIDS knowledge on condom use was virtually unchanged by the addition of education to the analysis, men's level of education, by itself, strongly predicted use. Men with a secondary or higher education were significantly more likely than men without formal schooling to have used a condom at last sex (odds ratio, 2.0); the effect of this characteristic remained highly significant even after all other variables had been added to the analysis (1.7).

In the final model, which included the source of AIDS knowledge and ownership of a television or radio, Ivoirian men reporting friends, family or neighbors as their exclusive source of AIDS information had significantly decreased odds of condom use at last intercourse (0.5).

For women, the characteristics predicting condom use were similar to those for men (Table 4). In the initial, unadjusted analysis, however, Ivoirian women with inaccurate knowledge were significantly less likely than those with accurate knowledge to have used a condom at last sexual intercourse (odds ratio, 0.3); nevertheless, after adjustment for social and demographic factors, education and sources of knowledge, the difference was no longer significant (0.6). The variables of age, marital status, religious affiliation and region of residence showed effects similar to those in the men's analyses. For example, the odds of condom use decreased as age increased: Compared with female respondents aged 15-19, women aged 25-50 had significantly reduced odds of condom use (0.2-0.6). Being Catholic or living in the urban savannah each increased the female participants' odds of condom use by 50%, but the effect lost significance once all other variables were added to the analysis. Condom use was strongly related to marital status: The odds of use were significantly lower among married women than among single women (0.2), an effect that remained significant in the final model.

As in the men's analysis, adding education to the model further explained the effect of accuracy of AIDS knowledge on women's odds of using a condom. Compared with women who had had no formal education, women who had had primary schooling were more likely to use a condom (odds ratio of 1.6), but this difference was insignificant after adjustment for sources of AIDS knowledge (1.4). Having had secondary or higher schooling significantly increased the odds of condom use (2.9), even after adjustment for sources of knowledge (2.2).

The inclusion of variables for sources of AIDS information also helped to explain the relationship of the accuracy of women's AIDS knowledge to their use of condoms, as the effect of accuracy of knowledge lost significance. Like men, women who had learned of AIDS only from friends, family or neighbors were significantly less likely to have used condoms at last sex (odds ratio, 0.3). Having heard of AIDS exclusively from television or radio decreased the odds of condom use to 0.6; having learned about AIDS from print and broadcast media and family, friends or neighbors decreased the odds to 0.4.

TABLE 4. Odds ratios from logistic regression predicting women's condom use at last sex, by selected characteristics, according to set of variables included in regression

Accuracy of AIDS information Accurate (ref) 1.00 Mixed accuracy 1.29 Inaccurate 0.26** Age 15–19 (ref) na 20–24 na 35–39 na 35–39 na 40–44 na 45–49 na Marital status Single (ref) na Married na Formerly married na Religious affiliation Muslim (ref) na Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Rural savannah na Rural sovannah na Rural savannah na	1.00 1.25 0.37** 1.00 1.00 0.62* 0.28* 0.55* 0.21** 0.17*	1.00 1.22 0.46* 1.00 0.97 0.60*	1.00 1.16 0.58
Accurate (ref) 1.00 Mixed accuracy 1.29 Inaccurate 0.26* Age 15–19 (ref) na 20–24 na 25–29 na 35–39 na 40–44 na 45–49 na Marital status Single (ref) na Married na Formerly married na Formerly married na Religious affiliation Muslim (ref) na Traditional na None na Type of region Rural forest (ref) na Urban savannah na Rural sovannah na Rural sovan	1.25 0.37** 1.00 1.00 0.62* 0.28* 0.55* 0.21**	1.22 0.46* 1.00 0.97 0.60*	1.16 0.58
Mixed accuracy 1.29 Inaccurate 0.26* Age 15–19 (ref) na 20–24 na 25–29 na 30–34 na 35–39 na 40–44 na 45–49 na Marital status Single (ref) na Married na Formerly married na Religious affiliation na Muslim (ref) na Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership TV ownership na Sources of AIDS information Other sources (ref) <t< td=""><td>1.25 0.37** 1.00 1.00 0.62* 0.28* 0.55* 0.21**</td><td>1.22 0.46* 1.00 0.97 0.60*</td><td>1.16 0.58</td></t<>	1.25 0.37** 1.00 1.00 0.62* 0.28* 0.55* 0.21**	1.22 0.46* 1.00 0.97 0.60*	1.16 0.58
Inaccurate	** 0.37** 1.00 1.00 0.62* 0.28* 0.55* 0.21**	0.46* 1.00 0.97 0.60*	0.58
Age 15–19 (ref)	1.00 1.00 0.62* 0.28* 0.55* 0.21**	1.00 0.97 0.60*	
15–19 (ref) na 20–24 na 25–29 na 30–34 na 35–39 na 40–44 na 45–49 na Marital status Single (ref) na Married na Formerly married na Formerly married na Religious affiliation Muslim (ref) na Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Urban savannah na Rural savannah na Rural savannah na Rural sovannah na Rome (ref) na Primary na ≥secondary na Sources of AIDS information Other sources (ref) na TV ownership na TV ownership na TV ownership na	1.00 0.62* 0.28* 0.55* 0.21**	0.97 0.60*	1.00
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40–44 na 45–49 na Marital status Single (ref) na Married na Formerly married na Religious affiliation Muslim (ref) na Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Rural sovannah na Sources of AIDS information Other sources (ref) na TV ownership na TV ownership na TSources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	0.21**	0.53*	0.52*
Marital status Single (ref) na Married na Formerly married na Religious affiliation Muslim (ref) na Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Formal education None (ref) na Rural sovannah na Sources of AIDS information Other sources (ref) na TV ownership na		0.24**	0.23**
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Single (ref) na Married na Formerly married na Religious affiliation Muslim (ref) na Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Formal education None (ref) na Frimary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only		0.20	0.17
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Religious affiliation Muslim (ref) na Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Urban forest na Rural savannah na Rural savannah na Formal education None (ref) na Primary na secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	0.18***	0.21***	0.21***
Muslim (ref) na Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	0.84	0.99	1.02
Muslim (ref) na Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only			
Catholic na Protestant na Traditional na None na Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	1.00	1.00	1.00
Protestant na Traditional na None na Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	1.00	1.00	1.00
Traditional na None na Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	1.50*	1.15	1.10
None na Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	1.11	0.90	0.87
Type of region Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	0.67	0.68	0.74
Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	0.90	0.82	0.85
Rural forest (ref) na Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only			
Urban forest na Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	1.00	1.00	1.00
Urban savannah na Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	1.00	1.00	1.00
Rural savannah na Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only	1.38	1.13	1.04
Abidjan na Formal education None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only na	1.45*	1.20	1.05
Formal education None (ref) Primary secondary Radio ownership TV ownership Sources of AIDS information Other sources (ref) TV/radio only Family/friends/neighbors only na	0.98	0.97	1.06
None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only na	1.28	1.04	0.89
None (ref) na Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only na			
Primary na ≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only na	na	1.00	1.00
≥secondary na Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only na			
Radio ownership na TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only na	na	1.58**	1.38
TV ownership na Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only na	na	2.90***	2.24***
Sources of AIDS information Other sources (ref) na TV/radio only na Family/friends/neighbors only na	na	na	1.05
Other sources (ref) na TV/radio only na Family/friends/neighbors only na	na	na	1.15
Other sources (ref) na TV/radio only na Family/friends/neighbors only na			
TV/radio only na Family/friends/neighbors only na		22	1.00
Family/friends/neighbors only na	na	na	1.00
	na	na	0.61**
TV/radio and family/friends/neighbors na	na	na	0.33***
		na	0.78
TV/radio and newspapers/magazines na	na	na	0.76
TV/radio, family/friends/neighbors and	na na		
newspapers/magazines na	na na na		0.42*
–2 log likelihood 2240.	na na na	na	0.43*

^{*}p < .05. **p < .01. ***p < .001. *Notes*: na=not applicable. ref=reference category.

DISCUSSION

Of the two previous studies on AIDS knowledge and condom use that included men and women, ³⁸ neither analyzed data according to sex. In the current study, accuracy of AIDS information seemed to play a mixed role in predicting condom use. For men, the weakness of the association found between correct information about AIDS and condom use at last sexual intercourse may have resulted from the lack of a comparison group of male condom users without knowledge of AIDS. Among women, the connection between accuracy of AIDS knowledge and condom use was statistically significant; however, after controlling for all other variables, the relationship lost significance.

Secondary or higher education appears to have been an important characteristic in determining condom use. With the ability to better comprehend the complex information about and implications of both HIV infection and family planning, formally educated persons may take more precautions. Am Marriage strongly predicted condom use for men and women. Married men's greater likelihood of condom use compared with that of married women in Côte d'Ivoire may reflect men's greater tendency to engage in extramarital affairs; Ivoirian men have been shown to use condoms more often with their casual partners than with their spouses. The finding that older adults had reduced odds of condom use may also be associated with marital status, because older adults are more likely to be in a stable relationship—a situation in which condoms are not frequently used.

The source from which participants learned about AIDS also significantly predicted condom use. Men and women who had heard of AIDS through word of mouth only (i.e., friends, family or neighbors) had decreased odds of using condoms. These sources might not emphasize taking precautionary measures to prevent transmission of HIV. In addition, these social networks may emphasize procreation, thus discouraging use of condoms. Adult Ivoirian women, most of whom are married, may have no control over contraceptive decisions or may not want to use condoms because of a desire to become pregnant. Further research is needed to explore these hypotheses.

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RESUMEN

Contexto: El uso del condón aún permanece muy limitado en Côte d'Ivoire, a pesar de una creciente prevalencia del VIH y un mayor conocimiento sobre la forma en que se transmite este virus. Se necesita disponer de información sobre las variables predictivas del uso del condón, y sobre el papel que desempeña el nivel de conocimiento sobre el SIDA y las diferencias entre los sexos con respecto al uso del condón.

Métodos: Se analizaron los datos obtenidos en la Encuesta Demográfica y de Salud de 1994 realizada en Côte d'Ivoire, correspondientes a entrevistados que habían tenido relaciones sexuales durante los dos meses previos a la encuesta. Se realizaron análisis de regresión logística, en forma separada para cada sexo, para determinar si la exactitud del conocimiento con respecto al SIDA era una variable predictiva para el uso del condón durante la más reciente relación sexual.

Resultados: La exactitud del conocimiento sobre el SIDA no fue una variable predictiva significativa con respecto al uso del condón. Entre los hombres entrevistados, las probabilidades del uso del condón en la última relación sexual fue significativamente más bajas entre aquellos de 35 o más años de edad que entre los jóvenes de 15–19 (razones de momios, 0,3–0,5). Las probabilidades también fueron más bajas entre los hombres casados (0,4) y entre aquellos que informaron que su única fuente de conocimiento sobre el SIDA eran amigos, familiares o vecinos (0,5). Al compararse al grupo de hombres sin educación, aquellos que habían cursado enseñanza secundaria o superior presentaron una razón de momios más elevada del uso del condón (1,7). Entre las mujeres, aquellas de 25 o más años de edad presentaron probabilidades significativamente más bajas de haber usado un condón durante su última relación sexual que el grupo de mujeres de 15-19 años (0,2-0,6). Las razones de momios para el uso fueron significativamente más bajas entre las mujeres casadas (0,2) y aquellas que habían recibido conocimientos sobre el SIDA de sus familiares, amigos, vecinos o la televisión o radio (0,3-0,6); sin embargo, las probabilidades del uso fueron significativamente más elevadas entre las mujeres que tenían educación secundaria o superior que entre aquellas que no tenían educación (2,2).

Conclusiones: El nivel de exactitud del conocimiento sobre SIDA no resultó ser una variable predictiva para el uso del condón en esta muestra. Los esfuerzos dirigidos a aumentar los niveles globales de educación en Côte d'Ivoire pueden resultar más eficaces en aumentar el uso del condón que una estrategia de centrar la atención en mejorar la exactitud del conocimiento sobre el SIDA.

RÉSUMÉ

Contexte: L'usage du préservatif reste faible en Côte d'Ivoire, en dépit d'une prévalence en hausse du VIH et d'une conscience étendue de la manière dont le virus se transmet. Les caractéristiques prédictives de l'usage du préservatif doivent être documentées, de même que le rôle joué dans cet usage par la connaissance du SIDA et les différences entre les hommes et les femmes.

Méthodes: Les données de l'Enquête démographique et de santé de 1994 de la Côte d'Ivoire ont été analysées pour les répondants qui avaient eu des rapports sexuels durant les deux mois précédant l'enquête. Des régressions logistiques ont été effectuées séparément, par sexe, afin de déterminer si la justesse de la connaissance des hommes et des femmes à l'égard du SIDA laissait prédire l'usage du préservatif lors de leurs derniers rapports sexuels.

Résultats: La justesse de la connaissance relative au SIDA ne s'est pas révélée significativement prédictive de l'usage du préservatif. Pour les répondants de sexe masculin, la cote d'usage du préservatif lors des derniers rapports sexuels était significativement inférieure parmi ceux âgés de 35 ans et plus, par rapport à la tranche de 15 à 19 ans (rapports de cotes de 0,3 à 0,5). La cote était également inférieure parmi les hommes mariés (0,4) et parmi ceux ayant déclaré leurs amis, parents ou voisins comme seule source de leur connaissance relative au SIDA (0,5). Par rapport aux hommes non scolarisés, ceux dotés d'une éducation secondaire ou supérieure étaient significativement plus susceptibles de déclarer l'usage du préservatif (1,7). Côté femmes, celles âgées de 25 ans et plus atteignaient des cotes d'usage du préservatif lors des derniers rapports sexuels significativement inférieures à celles de la tranche de 15 à 19 ans (0,2 à 0,6). Les cotes d'usage étaient significativement moindres parmi les femmes mariées (0,2) et parmi celles dont la source d'information sur le SIDA était la famille, les amis ou voisins ou la télévision et la radio (0,3 et 0,6). Elles étaient toutefois significativement supérieures chez les femmes instruites au niveau secondaire ou supérieur (2,2), par rapport à celles non scolarisées.

Conclusions: La justesse de la connaissance du SIDA n'a pas permis de prédire la probabilité de l'usage récent du préservatif dans l'échantillon à l'étude. Les efforts d'accroissement des niveaux d'éducation en Côte d'Ivoire pourraient faire croître plus efficacement l'usage du préservatif qu'une concentration sur l'amélioration de la justesse de la connaissance du SIDA.

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