

Wealth and Extramarital Sex Among Men in Zambia

CONTEXT: In Zambia, most people know about sexually transmitted infections (STIs) and HIV/AIDS, but this knowledge has not translated into safer sexual practices. An estimated 16% of adults are HIV-positive, with the majority having acquired the infection through heterosexual contact. It is important to know whether characteristics such as wealth are correlated with extramarital sex among men, because men who have sex outside of marriage are key agents of heterosexual transmission of STIs and HIV.

METHODS: Data for analysis came from 1,239 married men who participated in the 2001–2002 Zambia Demographic and Health Survey. Multivariate analyses were performed to identify factors associated with men's extramarital sexual behavior, with a focus on wealth.

RESULTS: Overall, 19% of married men had had extramarital sex in the year prior to the survey; their mean number of partners was 1.3. Of the three proxies for wealth included in the multivariate analyses—education, occupation and household wealth index—none were associated with extramarital sex. Living in Southern and Western Provinces of Zambia was associated with significantly increased odds of extramarital sex (2.3 and 3.5, respectively); older age (0.4), older age at first sex (0.6–0.7) and living in Northern Province (0.4) were associated with significantly decreased odds of sex outside of marriage.

CONCLUSIONS: Cultural norms specific to regions play an important part in sexual behavior. Socially defined sexual behavior patterns can shed light on extramarital sex and the spread of STIs, including HIV.

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According to 2000 data, Zambia has more than 10 million people, and an estimated 830,000 Zambians older than 15 are living with HIV/AIDS.¹ In the urban areas of Lusaka and Ndola, one in every four sexually active adults is HIV-positive; in rural areas, one in seven sexually active adults has the virus. Among adults, the main channel of transmission is heterosexual sex.

Because of the HIV/AIDS pandemic, topics that were once taboo for research have now come to the forefront. Researchers are studying sexuality, and sexual practices and behavior, not only as major public health issues, but as demographic issues as well. Before the 1994 International Conference on Population and Development (ICPD), men had not received much attention in research in spite of their role as partners and fathers. However, male sexuality, sexual practices and behavior have since gained attention, particularly in Sub-Saharan Africa, where more women than men are now being infected—often by their husbands or long-term partners.² Yet, women tend to be blamed for HIV transmission,³ which indicates how HIV/AIDS is bound up with gender roles and gender struggles.

In Zambia, levels of knowledge about sexually transmitted infections (STIs) and HIV/AIDS is very high. More than 90% of all adolescents and adults have heard of HIV/AIDS, and most know that HIV infection can be avoided by using condoms during sexual intercourse, being faith-

ful to one partner, limiting the number of partners and being abstinent.⁴ Some 62–71% of men and 48–65% of women know that using condoms during sexual intercourse could prevent HIV infection, and 33–82% of men and 46–84% of women indicate that being faithful to only one sexual partner or limiting the number of partners could also prevent infection with the virus that causes AIDS. Furthermore, 44% of women and 53% of men cited abstinence as a preventive measure.⁵ However, this high level of knowledge has not translated into safer sexual practices: According to the 2001–2002 Zambian DHS, current condom use is 4% among married women; data on current condom use among married men are not available.

This study examines the prevalence and correlates of extramarital sex among men in Zambia. Men who have sex outside of marriage are the key agents of heterosexual transmission of HIV because they act as a bridge between the outside world and their household environment.⁶

CONTEXT

Several studies have examined factors associated with the likelihood of having sexual relationships outside of marriage. These studies were mostly designed to answer questions on some aspects of marital infidelity, cultural values and norms of the societies under study. For example, in the United States, the emphasis has been on how marital

happiness and premarital sexual permissiveness are associated with extramarital sex,⁷ as well as on lifestyle and gender power imbalances that affect opportunities to meet extramarital partners as factors in marital infidelity.⁸

In contrast, recent studies of extramarital sex in Africa have considered prolonged postnatal abstinence as a factor in men's extramarital sexual behavior. According to data from a survey conducted in West Africa, husbands whose wives were observing postpartum abstinence were more likely than those whose wives were not abstaining to engage in extramarital sex.⁹ Extramarital sex has been linked to HIV/AIDS risks, especially in regions where the rate of contraceptive use is relatively low.¹⁰

Research on extramarital sex has paid little attention to household wealth, and studies that do address wealth include it only as a control variable.¹¹ There are indications, however, that mating decisions are strongly linked to evolutionary considerations such as resources. Horne contends that people consider the value of resources and perceive the actual usefulness of such resources for childrearing as important factors of sexual norms in society.¹² Darwin explained this evolutionary model in broader terms as the theory widely known as "survival of the fittest."¹³ He argued that for species that rely on sexual reproduction, males could best maximize their capabilities by mating with many females. However, because this mating scheme is subject to competition between males, the fittest ones would have access to more females.

Two important concepts help describe differences in male and female mating and reproductive strategies. The first concept is that of male as provider, derived from literature on hunting-gathering societies¹⁴ and studies of nonhuman primates.¹⁵ The idea is that the greater a male's ability to acquire, possess and provide resources in a population, the greater his chances of gaining access to females. Second is the concept of the "high-quality male." Several studies have shown that males with more resources have greater access to females, because females need resources to survive¹⁶ and because high-quality males outcompete other males who do not have enough resources to provide for or help females.¹⁷

Few studies have examined these two concepts and their related hypotheses in human populations. Data from U.S. censuses for the Utah territory in the mid-to-late 19th century suggest that wealthier men had more wives than those who were less wealthy.¹⁸ The study confirmed findings from previous work that men who control more resources or have higher social capital (e.g., having a brother who can inherit one's wife and children after one's death) have greater access to female sex partners.¹⁹ However, no quantitative study has examined the implications of wealth on men's extramarital sexual behavior.

This study looks at the association between men's wealth and their extramarital sexuality. Borrowing from the evolutionary concepts of male as provider and high-quality male, we posit that wealthier men will be more likely than less wealthy men to engage in extramarital sex. This is be-

cause resources attract women and because wealthier men can afford subsequent costs that would be associated with their sexual acts.

METHODS

Data and Sample

This study is based on data from the 2001–2002 Zambia Demographic and Health Survey (ZDHS). The ZDHS collected information from a nationally representative sample of women and men on various health, sexual, marital and household characteristics. Detailed information about the sampling methods, the survey and basic results has been published elsewhere.²⁰

Between 2001 and 2002, 7,658 women aged 15–49 and 2,145 men aged 15–59 were interviewed as part of the ZDHS. Of the men, 37% were single (never-married), 58% were currently married and the rest (6%) were either cohabiting or formerly married. For this analysis, we limited our sample to the 1,239 men in legal or formal marriages. We did not include cohabiting men in this article because that kind of union is rare in Zambia and its definition is controversial. For example, some women in cohabiting relationships consider themselves married.²¹

Variables

Our dependent variable is extramarital sexuality, defined as sexual intercourse with a woman other than one's own wife in the last 12 months. Additional questions were asked to determine the number of such partners, the length of each relationship and whether condoms were used during intercourse with these partners.

As our analysis aimed to examine the association between wealth and extramarital sex, we chose three independent variables as proxies for wealth: education, occupation and the wealth index. We expected married men with higher education, occupational status (e.g., professional) and wealth index to be more likely than others to have had extramarital sexual relations in the last 12 months. Similarly, those who scored higher on these three variables were expected to have more extramarital sex partners than their counterparts with lower wealth attributes.

Previous research suggests that education is correlated with extramarital sexual behavior.²² Educational attainment in Zambia is low, and thus we divided respondents into four educational categories: none and incomplete primary, complete primary, incomplete secondary, and complete secondary and more. Our variable for occupation also consisted of four categories: professional, service and skilled, agriculture and self-employed, and other. The "other" category includes the 3.5% of married men who were unemployed at the time of the survey.

The wealth variable is an index combining information on household ownership of selected amenities. An exploratory analysis found that only six amenities were useful for assessing the level of wealth in this data set—radio, television, refrigerator, bicycle, car or truck, and electricity. At least 1% of households reported having each of these items. Ownership of each

item was scored one or zero, and by adding the scores on all these items, we obtained a scale ranging from zero to six.

We selected additional variables as correlates of extramarital sexuality on the basis of previous research.²³ Age is usually a strong predictor of sexuality,²⁴ and has previously been found to be significant in studies on extramarital sexuality.²⁵ Therefore, we divided the sample into three age groups: 15–29, 30–39 and 40 or older.

We included religion in our analysis because previous studies show that religious affiliation is an important predictor of extramarital sex.²⁶ We distinguished three main religious categories: Catholic, Protestant and other; the “other” category includes those without religious affiliation. Given the influence of urbanization on human behavior, we considered urban (vs. rural) residence as a predictor of extramarital sexuality. Similarly, we included the province of residence to capture the influence of local culture on extramarital sexuality. We did not include ethnicity in this analysis because there are more than 60 ethnic groups in Zambia, which makes it difficult to divide them into meaningful categories. In addition, there is a strong link between region of residence and ethnicity: Although internal migration is common in many African countries, the majority of people live in their regions of origin.

We included head of household status as a variable because it was found to be significantly associated with extramarital sex in Brazil,²⁷ and we wanted to explore whether this association was significant among Zambian men. Finally, we included age at first intercourse because previous research has shown that sexual initiation at an early age is a predictor of extramarital sex and risky sexual behavior during adolescence and adulthood.²⁸ We constructed three categories: younger than 16, 16–19, and 20 or older.

Analysis

Our analytical approach included descriptive data as well as bivariate and multivariate analyses. The descriptive statistics show the distribution of respondents by the key variables. Next, the bivariate analyses examine the association between each variable and the dependent variable—extramarital sex. Finally, multivariate logistic regression analyses examine the net effects of the variables. For our multivariate analyses, we constructed three models. The first contains basic socioeconomic variables (age, education, occupation and wealth index); the second adds religion, urban residence and region of residence; and the third adds head of household status and age at first sex. This process makes it easier to see how each set of factors is associated with men’s involvement in extramarital sex. Each subsequent model provides a higher predictive power, as measured by the change in log likelihood values.

RESULTS

Sample Characteristics

Among the sample of married Zambian men, 30% were aged 15–29, 37% were 30–39 and 34% were 40 or older (Table 1). Thirty-five percent had no education or had not

TABLE 1. Percentage distribution of married Zambian men, by selected social and demographic characteristics, Zambia Demographic and Health Survey 2001–2002

Characteristic	% (N=1,239)
Age	
15–29	30.0
30–39	36.5
≥40	33.5
Education	
None/incomplete primary	35.4
Complete primary	24.8
Incomplete secondary	25.4
≥complete secondary	14.4
Occupation	
Other/none	17.2
Professional	5.9
Service/skilled	23.9
Agriculture/self-employed	53.0
Wealth index (0–6)	
0	63.4
1	17.8
≥2	18.8
Religion	
Other/none	4.3
Catholic	24.2
Protestant	71.5
Residence	
Rural	72.0
Urban	28.0
Province	
Central	10.7
Copperbelt	11.2
Eastern	14.2
Luapula	9.9
Lusaka	10.6
Northern	16.1
Northwestern	10.7
Southern	10.2
Western	6.5
Head of household	
Yes	92.3
No	7.7
Age at first intercourse	
<16	35.0
16–19	37.3
≥20	27.6
Total	100.0

Note: Percentages may not add to 100 because of rounding.

completed primary school, and only 14% had completed secondary school. More than half (53%) of men reported being agricultural workers or self-employed; 6% had professional occupations, 24% had service or skilled jobs, and the remainder reported other occupations or were unemployed. The majority of the respondents (63%) did not own any of the six household amenities included in the wealth index measure; 18% owned one item and 19% owned two or more items. The mean wealth index value was 0.67, with a standard deviation of 1.09 (not shown). The corresponding Cronbach alpha coefficient was 0.67. The vast majority of the respondents (96%) were Christian and

TABLE 2. Percentage of married Zambian men who reported extramarital sex in the last 12 months, and their mean number of extramarital partners during that period, by selected social and demographic characteristics

Characteristic	% (N=1,237)	Mean (N=229)
All	18.5	1.3
Age		
15–29	24.0***	1.4
30–39	20.2	1.2
≥40	11.8	1.5
Education		
None/incomplete primary	18.0	1.3
Complete primary	17.3	1.2
Incomplete secondary	21.0	1.3
≥complete secondary	17.5	1.7
Occupation		
Other/none	21.2**	1.8***
Professional	20.5	1.3
Service/skilled	23.8	1.3
Agriculture/self-employed	15.1	1.2
Wealth index (0–6)		
0	19.1	1.4
1	14.9	1.1
≥2	19.8	1.4
Religion		
Other/none	22.6	1.6
Catholic	18.8	1.2
Protestant	18.2	1.4
Residence		
Rural	16.4	1.2
Urban	23.9**	1.5*
Province		
Central	16.5***	1.2
Copperbelt	14.4	1.2
Eastern	18.2	1.2
Luapula	8.9	1.4
Lusaka	27.5	1.7
Northern	6.6	1.0
Northwestern	21.2	1.2
Southern	29.4	1.5
Western	37.5	1.3
Head of household		
Yes	18.0	1.3
No	25.0	1.3
Age at first intercourse		
<16	24.3***	1.4
16–19	17.1	1.4
≥20	13.2	1.2

*p<.05. **p<.01. ***p<.001. Note: N does not equal 1,239 because two respondents had missing data on the dependent variable.

household heads (92%), and nearly three-fourths (72%) lived in rural areas. Respondents were fairly evenly distributed geographically, with most provinces representing 10–11% of the sample; Northern and Eastern Provinces accounted for slightly greater proportions of the sample (16% and 14%, respectively), whereas Western Province represented a slightly smaller proportion (7%). Thirty-five percent of the respondents had had their first sexual intercourse before the age of 16, 37% at ages 16–19 and 28% at age 20 or older.

Bivariate Analyses

Nearly one of five married men (19%) reported having had extramarital sex in the 12 months before the survey (Table 2); on average, men had had 1.3 extramarital partners during that period. Sex outside of marriage was associated with men's age, with a greater proportion of 15–29-year-olds (24%) than of men aged 30–39 (20%) or 40 or older (12%) reporting having had a partner other than their wife. This finding is consistent with previous research in other countries that suggests that men's tendency to have multiple sex partners tends to be higher at younger ages.²⁹

Extramarital sex was most prevalent among men who reported service or skilled occupations (24%) and least prevalent among agricultural workers and the self-employed (15%); the latter finding may reflect that these occupations keep men around the home or in other situations where married couples can be together. However, men who reported other occupations or being unemployed had had the highest mean number of extramarital partners (1.8). In addition, a significantly greater proportion of men in urban than in rural areas reported having had extramarital relationships (24% vs. 16%), and the mean number of partners was higher for urban men than for those in rural areas (1.5 vs. 1.2). These findings suggest that city life provides more opportunities for meeting and mating, as the number of potential partners is usually greater in urban than in rural areas.

Interestingly, there was large variation in the prevalence of extramarital sex by province: Thirty-eight percent of men in Western Province had had sex outside of marriage in the 12 months before the survey, compared with 7% and 9% of men in Northern and Luapula Provinces, respectively. This suggests that there are regionally specific norms and values that affect married men's sexual behavior. Furthermore, there was a strong association between age at sexual debut and extramarital sex: A greater proportion of men who had had their first intercourse before ages 16 (24%) than of those whose sexual debut had occurred at ages 16–19 (17%) or 20 or older (13%) reported having had extramarital sex in the past year. Unlike in other research, religion was not significantly associated with extramarital sex.³⁰ Likewise, education, the wealth index and being head of household were all nonsignificant.

Multivariate Analyses

In the first logistic regression model (Table 3), married men aged 40 or older were less likely than those aged 15–29 to have had sex outside of marriage (0.4). Only one of our three proxies for wealth—occupation—was significantly associated with extramarital sex: Men who reported a professional occupation and those with skilled or service jobs were more likely than those in the other/none category to have had sex outside of marriage (odd ratios, 2.1 and 1.8, respectively); agricultural workers and the self-employed also had elevated odds of extramarital sex (1.5), but the finding was only marginally significant. Education and wealth index score were nonsignificant.

When we added religion, urban versus rural residence and province of residence to the analysis (model 2), the association of age with extramarital sex remained; but the association with occupation did not. The odds of engaging in extramarital sex were marginally higher among urban men than among rural men (1.6), a finding that is consistent with research results from Cote d'Ivoire.³¹ Province of residence is also associated with extramarital sex: Compared with men in Central Province, those in Southern and Western Provinces were significantly more likely to engage in sex outside of marriage (2.1 and 3.6), and those in Northern Province were significantly less likely (0.4) to do so. The odds of involvement in extramarital relations were marginally lower among those living in Luapula Province and among Protestants (0.5 and 0.7, respectively).

In the final model, which controlled for all the study variables, extramarital sex remained significantly associated with older age (0.4) and living in Southern (2.3), Western (3.5) and Northern (0.4) Provinces. The age finding confirms other research on extramarital sex³² and risky sexual behavior.³³ In addition, men who had their sexual debut at age 16 or older were significantly less likely than those who became sexually experienced before age 16 to have had extramarital sex (0.6–0.7). Wealth index score and education remained nonsignificant.

DISCUSSION

Our contention that wealth—represented by variables for education, occupation and the wealth index—is associated with men's extramarital sexual behavior was not confirmed. Instead, we found that occupational status was significant only in the initial model, and became nonsignificant once additional variables were added. This is consistent with findings from Cote d'Ivoire that suggest that occupation and household wealth are not significant correlates of men's extramarital sexual behavior when other social and demographic variables are controlled for.³⁴ Hence, the evolutionary perspective that wealthy men would embrace more permissive sexual behaviors is not supported by the current data.

In many African countries, sexual behavior is embedded in local cultures. Even though we did not include ethnicity in this analysis, the regional pattern of extramarital sexual behavior found in this study suggests some ethnic norm influences. For example, most of the Bemba people, the largest ethnic group in Zambia, live in Northern Province. This group practices matrilineal descent, where property and lineage are traced through mothers. In such conditions, the observed lower risk of extramarital sex among men in this region may reflect Bemba women's relative power. Similar influences of ethnicity on sexual behavior in Africa have been reported in other research.³⁵ This influence of local culture is changing due to rural migration and education, especially in cities where people are more likely to abandon traditions because of the heterogeneity of populations. Still, for many African people, ethnic affiliation, which is usually a regional element, means shared language and norms

TABLE 3. Odds ratios (and 95% confidence intervals) from logistic regression analyses examining associations between selected characteristics and married men's engagement in extramarital sex

Characteristic	Model 1 (N=1,233)	Model 2 (N=1,231)	Model 3 (N=1,229)
Age			
15–29 (ref)	1.00	1.00	1.00
30–39	0.78 (0.56–1.10)	0.78 (0.55–1.11)	0.80 (0.56–1.13)
≥40	0.41 (0.28–0.60)***	0.39 (0.26–0.56)***	0.42 (0.28–0.64)***
Education			
None/incomplete primary (ref)	1.00	1.00	1.00
Complete primary	0.99 (0.67–1.47)	1.03 (0.68–1.56)	1.01 (0.67–1.53)
Incomplete secondary	1.07 (0.73–1.56)	1.12 (0.75–1.68)	1.12 (0.74–1.68)
≥complete secondary	0.67 (0.39–1.15)	0.66 (0.37–1.18)	0.71 (0.40–1.27)
Occupation			
Other/none (ref)	1.00	1.00	1.00
Professional	2.12 (1.02–4.41)*	1.56 (0.72–3.38)	1.65 (0.76–3.58)
Service/skilled	1.77 (1.23–2.56)**	1.44 (0.90–2.32)	1.49 (0.93–2.40)
Agriculture/self-employed	1.49 (0.99–2.23)†	1.11 (0.68–1.82)	1.10 (0.67–1.81)
Wealth index (0–6)			
0 (ref)	1.00	1.00	1.00
1	0.81 (0.53–1.23)	0.88 (0.56–1.36)	0.89 (0.57–1.39)
≥2	1.13 (0.78–1.66)	1.24 (0.83–1.85)	1.28 (0.85–1.91)
Religion			
Catholic (ref)	na	1.00	1.00
Protestant	na	0.72 (0.50–1.04)†	0.74 (0.51–1.08)
Other/none	na	0.91 (0.43–1.93)	0.93 (0.44–1.99)
Residence			
Rural (ref)	na	1.00	1.00
Urban	na	1.62 (0.99–2.64)†	1.58 (0.97–2.57)†
Province			
Central (ref)	na	1.00	1.00
Copperbelt	na	0.58 (0.28–1.20)	0.61 (0.30–1.25)
Eastern	na	1.15 (0.62–2.14)	1.19 (0.64–2.21)
Luapula	na	0.49 (0.22–1.09)†	0.51 (0.23–1.13)†
Lusaka	na	1.22 (0.62–2.39)	1.30 (0.66–2.56)
Northern	na	0.35 (0.17–0.74)**	0.40 (0.19–0.84)*
Northwestern	na	1.37 (0.71–2.64)	1.30 (0.67–2.53)
Southern	na	2.09 (1.13–3.88)*	2.29 (1.23–4.27)**
Western	na	3.55 (1.82–6.93)***	3.49 (1.78–6.84)***
Head of household			
Yes (ref)	na	na	1.00
No	na	na	1.07 (0.63–1.84)
Age at first intercourse			
<16 (ref)	na	na	1.00
16–19	na	na	0.66 (0.46–0.93)*
≥20	na	na	0.59 (0.39–0.89)*
–2 Log-likelihood (df)	1,146 (10)	1,077 (21)	1,067 (24)

*p<.05. **p<.01. ***p<.001. †p<.10. Notes: ref=reference group. na=not applicable.

governing behavior and reproductive and mating strategies. The findings of this research support the view that sexual behavior in Zambia is based on regional values and norms.

Several of our other findings show associations between married men's characteristics and extramarital sexual behavior. Compared with men who reported becoming sexually experienced before age 16, those whose sexual debut occurred after age 16 were less likely to have had sex outside of marriage. This finding is consistent with data from other studies that have examined this variable.³⁶ In addition, our results indicate that young age is associated with extramarital sex among married men.

Occupation as a proxy for wealth was significant only when we did not control for place of residence, province and religion. After controlling for these variables, the significant association with occupation disappeared, whereas residence in some provinces was associated with extramarital sex. This may be explained in part by the fact that in developing countries, most professional occupations are found in urban centers. Thus, as migration from rural areas to urban centers increases and as people search for wage employment, the likelihood of engaging in extramarital sex may also increase. This may be because urbanization leads to declines in traditional customs and decreased cohabitation with spouses, especially for married men who leave their spouses in rural areas to pursue wage employment in urban centers. This finding may also reflect higher levels of prostitution or greater numbers of unmarried women in urban areas than in rural areas. For example, many young women may be moving to cities in search of economic opportunities or to pursue higher education. Because of high unemployment and gender inequalities in obtaining access to resources, these women may depend on wealthy men to survive.

Although this research does not focus on the structural changes brought about by urbanization and other social transformations that are eroding traditional norms of marital fidelity, it highlights the importance of cultural factors in extramarital sexuality. In addition, regional differences like those found in this study are consistently found in other studies on sexual and reproductive behavior in Africa. Therefore, there is a need for more research on local norms that affect individual and group attitudes and behaviors in relation to sexual activity. To promote safe and healthy sexuality, effective HIV/AIDS prevention efforts must take these local norms seriously.

REFERENCES

- Foreman M, *Men and HIV in Zambia*, London: Panos and UNAIDS, 2000.
- Joint United Nations Programme on HIV/AIDS (UNAIDS), *Report on the Global HIV/AIDS Epidemic*, Geneva: UNAIDS, 2000.
- Abrahamsen R, Gender dimensions of AIDS in Zambia, *Journal of Gender Studies*, 1997, 6(2):177–189.
- Central Statistical Office (CSO), *Zambia Sexual Behaviour Survey 2000*, Chapel Hill, NC, USA: Measure Evaluation, 2002; and CSO, Central Board of Health (CBH) and ORC Macro, *Zambia Demographic and Health Survey 2001–2002*, Calverton, MD, USA: ORC Macro, 2003.
- CSO, CBH and ORC Macro, 2003, op. cit. (see reference 4).
- Elwood WN, Lipstick, needle, and company: a case study of the structure of a bridge group in Houston, Texas, *Connections*, 1995, 18(1):46–57; and Frank O, Infertility in Sub-Saharan Africa: estimates and implications, *Population and Development Review*, 1983, 9(1):137–144.
- Reiss IL, Anderson RE and Sponaugle GC, A multivariate model of the determinants of extramarital sexual permissiveness, *Journal of Marriage and the Family*, 1980, 42(2):395–411.
- Saunders JC and Edwards JN, Extramarital sexuality: a predictive model of permissive attitudes, *Journal of Marriage and the Family*, 1984, 46(4):825–835.
- Ali MM and Cleland JG, The link between postnatal abstinence and extramarital sex in Cote d'Ivoire, *Studies in Family Planning*, 2001, 32(3):214–219.
- Cleland JG, Ali MM and Chichi VC, Post-partum sexual abstinence in West Africa: implications for AIDS-control and family planning programmes, *AIDS*, 1999, 13(1):125–131.
- Ibid.; and Ali MM and Cleland JG, 2001, op. cit. (see reference 9).
- Horne C, Values and evolutionary psychology, *Sociological Theory*, 2004, 22(3):477–503.
- Darwin C, *The Descent of Man and Selection in Relation to Sex*, New York: Appleton, 1871.
- Diamond J, *Why Is Sex Fun? The Evolution of Human Sexuality*, New York: Harper Collins, 1997; Hawkes K, Why do men hunt? some benefits for risky strategies, in: Cashdan E, ed., *Risk and Uncertainty*, Boulder, CO, USA: Westview Press, 1990; and Hill K and Hurtado M, *Ache Life History: The Ecology and Demography of a Foraging People*, New York: Aldine de Gruyter, 1996.
- Van Schaik C and Paul A, Male care in primates: does it ever reflect paternity? *Evolutionary Anthropology*, 1996, 5(5):152–156.
- Anderson M, *Sexual Selection*, Princeton, NJ, USA: Princeton University Press, 1994; Buss MD, Sex differences in human mate preferences: evolutionary hypotheses tested in 37 cultures, *Behavioral and Brain Sciences*, 1989, 12(1):1–49; and Cashdan E, Women's mating strategies, *Evolutionary Anthropology*, 1996, 5(4):134–143.
- Hawkes K, On life-history evolution, *Current Anthropology*, 1994, 35(1): 39–41.
- Heath KM and Hadley C, Dichotomous male reproductive strategies in a polygynous human society: mating versus parenting effort, *Current Anthropology*, 1998, 39(3):369–374.
- Borgerhoff MM, Kipsigis women's preferences for wealthy men: evidence for female choice in mammals? *Behavioral Ecology and Sociobiology*, 1990, 27(4):255–264; Hewlett BS, Sexual selection and parental investment among the Aka Pygmies, in: Betzig L, Borgerhoff-Mulder M and Turke P, eds., *Human Reproductive Behaviour: A Darwinian Perspective*, Cambridge, UK: Cambridge University Press, 1988, pp. 263–276; Hewlett B, *Intimate Fathers: The Nature and Context of Aka Pygmy Paternal Infant Care*, Ann Arbor, MI, USA: University of Michigan Press, 1991; Hill K and Kaplan H, Tradeoffs in male and female reproductive strategies among the Ache: Part I, in: Betzig L, Borgerhoff-Mulder M and Turke P, eds., *Human Reproductive Behaviour: A Darwinian Perspective*, Cambridge, UK: Cambridge University Press, 1988, pp. 277–290.
- CSO, CBH and ORC Macro, 2003, op. cit. (see reference 4).
- Frank O, 1983, op. cit. (see reference 6).
- Hill ZE, Cleland JG and Ali MM, Religious affiliation and extramarital sex in Brazil, *International Family Planning Perspectives*, 2004, 30(1):20–26.
- Ibid.; and Knodel J et al., An evolutionary perspective on Thai sexual attitudes and behavior, *Journal of Sex Research*, 1997, 34(3):292–304.
- Djamba YK, Financial capital and premarital sexual activity in Africa: the case of Zambia, *Population Research and Policy Review*, 1997, 16(3):243–257; and Djamba YK, Social capital and premarital sexual activity in Africa: the case of Kinshasa, Democratic Republic of Congo, *Archives of Sexual Behavior*, 2003, 32(4):327–337.
- Hill ZE, Cleland JG and Ali MM, 2004, op. cit. (see reference 22); and Wiederman M, Extramarital sex: prevalence and correlates in a national survey, *Journal of Sex Research*, 1997, 34(2):167–175.
- Hill ZE, Cleland JG and Ali MM, 2004, op. cit. (see reference 22).
- Ibid.
- White R, Links between premarital sexual behavior and extramarital intercourse, *AIDS*, 2000, 14(15):2323–2331; Hill ZE, Cleland JG and Ali MM, 2004, op. cit. (see reference 22); and Bakken RJ and Winter M, Family characteristics and sexual risk behaviors among black men in the United States, *Perspectives on Sexual and Reproductive Health*, 2002, 34(5):252–258.
- Hill ZE, Cleland JG and Ali MM, 2004, op. cit. (see reference 22).
- Ibid.
- Ali MM and Cleland JG, 2001, op. cit. (see reference 9).
- Hill ZE, Cleland JG and Ali MM, 2004, op. cit. (see reference 22); and Wiederman M, 1997, op. cit. (see reference 25).

33. Feldman DA et al., HIV prevention among Zambian adolescents: developing a value utilization/norm change model, *Social Science & Medicine*, 1997, 44(4):455–468; and Ndubani P and Hojer B, Sexual behavior and sexually transmitted diseases among young men in Zambia, *Health Policy and Planning*, 2001, 16(1):107–112.

34. Ali MM and Cleland JG, 2001, op. cit. (see reference 9).

35. Addai I, Ethnicity and sexual behavior in Ghana, *Social Biology*, 1997, 46(1/2):17–32; and Djamba YK, 2003, op. cit. (see reference 24).

36. White R, 2000, op. cit. (see reference 28); and Konings E et al., Sexual behavior survey in a rural area of northwest Tanzania, *AIDS*, 1994, 8(8):987–993.

RESUMEN

Contexto: En Zambia, la mayoría de las personas tienen conocimiento de las infecciones transmitidas sexualmente (ITS) y el VIH/SIDA, aunque este conocimiento no necesariamente redundará en conductas sexuales más seguras. Se calcula que el 16% de los adultos son VIH positivos, y la mayoría han sido infectados por medio de relaciones heterosexuales. Es importante saber si características tales como el nivel económico están asociadas con la actividad sexual extramarital de los hombres, porque los hombres que mantienen relaciones fuera del matrimonio son los agentes clave de la transmisión heterosexual del VIH.

Métodos: Los datos utilizados en el análisis fueron obtenidos de 1.239 hombres casados que participaron en la Encuesta Demográfica y de Salud en Zambia de 2001–2002. Se realizaron análisis multivariados para identificar los factores, con énfasis especial en el nivel económico, que estuvieran relacionados con la conducta sexual extramarital del hombre.

Resultados: En general, el 19% de los hombres casados habían mantenido relaciones sexuales fuera del matrimonio durante el año previo a la encuesta; el número promedio de parejas fue de 1,3. De los tres factores escogidos en el análisis multivariado para medir el nivel económico—educación, ocupación e índice de comodidades en el hogar—ninguno estuvo asociado con el sexo extramarital. La residencia en las provincias del sur y del oeste de Zambia presentaron probabilidades significativamente elevadas de relaciones extramaritales (razones de momios de 2,3 y 3,5, respectivamente); los factores que presentaron probabilidades significativamente reducidas eran mayor edad (0,4), mayor edad en el momento de la primera experiencia sexual (0,6–0,7) y la residencia en la provincia del norte (0,4).

Conclusiones: Las normas culturales específicas de cada re-

gión de un país desempeñan un importante papel en la conducta sexual de los habitantes. Los patrones socialmente definidos de la conducta sexual pueden aportar datos sobre las relaciones sexuales fuera del matrimonio y la diseminación de las ITS, incluido el VIH.

RÉSUMÉ

Contexte: La plupart des Zambiens ont connaissance des infections sexuellement transmissibles (IST) et du VIH/SIDA mais cette connaissance n'a pas donné lieu à des pratiques sexuelles moins risquées. On estime à 16% la population adulte séropositive au VIH, la majorité ayant contracté l'infection par contact hétérosexuel. Les hommes qui ont des rapports sexuels en dehors du mariage sont en effet les agents clés de la transmission hétérosexuelle du VIH. Il importe de savoir s'il existe une corrélation entre les caractéristiques telles que la richesse et les relations sexuelles extraconjugales des hommes.

Méthodes: Les données soumises à l'analyse sont celles de 1.239 hommes mariés ayant participé à l'Enquête démographique et de santé zambienne de 2001–2002. L'analyse multivariée a permis d'identifier les facteurs associés au comportement sexuel extraconjugal des hommes, l'accent ayant été mis sur la richesse.

Résultats: Dans l'ensemble, 19% des hommes mariés avaient eu des rapports sexuels extraconjugaux durant l'année précédant l'enquête, avec un nombre moyen de partenaires calculé à 1,3. Des trois indicateurs de richesse inclus dans les analyses multivariées (éducation, profession et indice de richesse des ménages), aucun n'est apparu associé aux relations sexuelles extraconjugales. Le lieu de résidence dans les provinces du sud et de l'ouest de la Zambie s'est révélé associé à une probabilité significativement accrue de relations sexuelles extraconjugales (2,3 et 3,5, respectivement), tandis que l'âge (0,4), l'âge plus avancé au moment des premiers rapports sexuels (0,6–0,7) et la résidence dans la province du nord (0,4) étaient associés à des probabilités significativement moindres de relations sexuelles en dehors du mariage.

Conclusions: Les normes culturelles propres aux régions jouent un rôle important dans les comportements sexuels. Les modèles de comportement sexuel socialement définis peuvent jeter la lumière sur la sexualité extraconjugale et la propagation des IST, y compris le VIH.

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