Substantial Proportions of Contraceptive Clinic Clients Would Try Methods That Can Cause Amenorrhea

Women's attitudes toward menstruation and toward contraceptives that can cause amenorrhea differ significantly across settings and ethnic groups.[1] According to a survey of a thousand female family planning clinic clients, more than half of respondents in Scotland and China and of nonblack respondents in Africa do not like having periods; at least three-quarters of black Africans, however, report that they like having them. One-third to three-fourths of women in each area would consider trying a contraceptive method that can induce amenorrhea; however, the vast majority of health care providers from those clinics believed that menstruating while using contraceptives is important to their clients. Even so, most providers said that they would recommend a contraceptive method that can stop bleeding.

For some women, menstruation can be a monthly source of pain and discomfort. To examine women's attitudes on menstruation and willingness to use contraceptives that can induce amenorrhea (such as the progesterone-only injectable or implant), researchers surveyed female clients of and health care providers from one or more family planning clinics in each of five cities: Edinburgh, Scotland; Cape Town, South Africa; Sagumu, Nigeria; Hong Kong, China; and Shanghai, China. Between December 2000 and June 2001, researchers recruited 200 women from family planning clinics in each of the five urban centers; in Cape Town, women were selected so that the sample had equal proportions of black, colored and white women. After receiving informed verbal consent from women, trained interviewers administered a questionnaire that took participants 5–10 minutes to complete. To survey health care providers, researchers sent or hand-delivered questionnaires to clinics; at least 50 responses were received from providers in each city.

Clients were asked about their demographic characteristics, gynecological history, contraceptive use and attitudes on menstruation; providers were asked about their attitudes toward and perceptions about their clients' attitudes on menstruation and contraceptive use.

As expected, the demographic characteristics of the respondents varied substantially by location. Women in Edinburgh, Cape Town and Shanghai were significantly younger than those in Hong Kong and Sagumu; greater proportions of respondents in Shanghai, Hong Kong and Sagumu (81–99%) than in Cape Town or Edinburgh (33–49%) were married or cohabitating. Almost all of the women in Edinburgh were white (97%), whereas in Shanghai and Hong Kong, the vast majority were Chinese (92–99%). All of the participants in Sagumu were black; one-third of the women in Cape Town were white, one-third black and one-third colored, reflecting the sampling strategy. The majority (78–84%) in the two African cities reported being Christian, but most women (64–96%) in the other three urban centers reported having no religion. Respondents from Edinburgh were the most likely to have no children (76%), and those from Sagumu were the most likely to have four or more (59%).

The vast majority of women reported having menstrual cycles of 26–35 days, with their periods lasting 4–7 days. At least half of the respondents from each city considered their menstrual flow to be "normal." Two percent of women in Hong Kong, 10% in Edinburgh and 29% in Cape Town reported being amenorrheic, as a result of using the injectable. The pill was the most widely used contraceptive method in Edinburgh (47% of women); the women in the two African cities were most likely to rely on the injectable or the implant (30–53%), and those in the two Chinese cities were most likely to use the condom (38–39%).

In response to questions about menstruation, between half and three-fourths of all women in Edinburgh, Hong Kong and Shanghai and of white and colored women in Cape Town reported that they did not like having their period—most commonly because they found it "inconvenient" (65–85%); 33% of women in Edinburgh and 13% of those in Hong Kong reported that they disliked their periods because of menstrual problems. In contrast, at least three-fourths of all women in Sagumu and of black women in Cape Town liked menstruating—most commonly because it got rid of "bad blood." Nonblack women in Cape Town and women in Edinburgh were significantly more likely than those in other cities to want to dispense with menstruation (29–37% vs. 6–15%); women in Sagumu were more likely than others to prefer to menstruate monthly (71% vs. 30–49%).

With the exception of women in Cape Town, a minority of participants (0–23%) reported having used a contraceptive method that caused amenorrhea. Among women in Cape Town, experience with a contraceptive method that caused amenorrhea differed by race: Sixty percent of black women had used a method that stopped their period, compared with 32% of white and 37% of colored women. More than half of women in Edinburgh (65%), Cape Town (52–64%) and Sagumu (73%) reported that they would be willing to use a contraceptive method that can cause amenorrhea; 37% of women in Hong Kong and 48% of women in Shanghai would consider using such a method. Willingness to use a contraceptive method that can stop menstruation was not related to age, parity, education, religion or perception of one's menstrual flow (i.e., normal, heavy or light) except in Shanghai, where younger women and those who wanted children were significantly more willing than others to try a method that could stop their period.

The demographic characteristics of health care providers varied significantly by location. The majority in each urban center were female and married, and providers' racial and ethnic backgrounds were similar to those of their clients. However, providers in Scotland and Africa tended to be older than those in China, and the majority of providers in Scotland and Africa reported being Christian, whereas the majority in China reported not belonging to any religion.

More than half of health care providers in Scotland (82%) and Cape Town (53–88%) did not believe that it is important for women to menstruate while practicing contraception. However, the vast majority of providers in each

city (91–98%) believed that it is quite or very important to their clients. Even so, more than half (52–100%) of providers in all cities except for Shanghai said they would recommend a method of contraception that can cause amenorrhea.

The authors comment that the proportions of women in this study who were willing to consider using contraceptive methods that can cause amenorrhea were greater than those in previous studies, even among women who liked having their period. The researchers attribute this, at least in part, to their respondents being younger and less likely to be married than those in previous studies and having been recruited from family planning clinics. They speculate that "the results may also reflect an increased willingness of women to accept therapeutic interventions if the benefits are seen to be real."–*J.Rosenberg*

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Intervention in Rural Uganda Is Effective Against Some Sexually Transmitted Infections, but Not Against HIV

Neither a behavioral intervention alone nor the same intervention coupled with syndromic management of sexually transmitted infection (STI) was effective in lowering the incidence of HIV in a rural area of Uganda between 1994 and 2000.[1] The prevention strategies had little success in changing risky behavior, but they were associated with reduced incidence of herpes simplex virus type 2 (HSV-2) and syphilis, and with a lowered prevalence of gonorrhea.

In a six-year trial, 18 communities were randomly assigned to receive the single- or two-pronged intervention or, for comparison, routine government health and community development services. The behavioral intervention involved information, education and communication activities meant to increase participants' HIV risk-related knowledge and skills; STI diagnosis and treatment services were delivered by government and private health care workers who were specially trained in syndromic management of STIs. As part of the trial, social marketing of male condoms and voluntary HIV counseling and testing were provided in all 18 communities.

At the start of the trial and at two subsequent points, the researchers conducted a census of selected villages close to the government health facility in each community and then administered laboratory tests and survey questionnaires to residents of those villages. They obtained information about STIs and sexual behavior from men and women who were aged 25 or older, or who were younger but were married or sexually experienced. The median length of follow-up was 3.6 years per person.

The three groups of communities (i.e., the six with the single-pronged intervention, the six with the double-pronged approach and the six controls) were quite similar at baseline. Each had an adult population of roughly 7,000, slightly more than half of whom were women and were aged 20–54. The vast majority of residents of the study communities were sexually experienced, but fewer than one in five had ever used condoms; about two-thirds had had two or more sexual partners. Some 7–10% had had a genital ulcer in the last year, and slightly higher proportions had had one previously.

At baseline, the prevalence of HIV in each group of communities was 9–10%. During the course of follow-up, HIV infections occurred at a rate of 0.7 per 100 person-years at risk. After adjustment for age, sex and baseline HIV prevalence, the incidence of HIV in the communities receiving preventive services was statistically indistinguishable from the incidence in the control communities.

In each group of communities, 28% of 13–29-year-olds had HSV-2 at baseline. During follow-up, new infections occurred at a rate of 2.3 per 100 person-years at risk in communities that received just the behavioral intervention and 3.5–3.6 per 100 in the other two groups of communities. Analyses adjusting for age and sex confirmed that communities with the behavioral intervention had a significantly lower HSV-2 incidence than control communities (rate ratio, 0.7), but that communities with the two-pronged intervention fared no better than controls.

By contrast, the incidence of other STIs was reduced only in communities where both behavioral interventions and STI services were in place. At baseline, about one in four people in each group of communities had serological evidence of past syphilis infection, and slightly more than one in 10 had active syphilis. Subsequently, communities with a two-pronged prevention approach had a marginally lower overall incidence of syphilis than comparison communities (2.1 vs. 2.9 per 100 person-years at risk; rate ratio, 0.8) and a significantly lower incidence of high-titer syphilis, which is related to greater infectivity (0.3 vs. 0.6; rate ratio, 0.6). Data on gonorrhea were limited, but the available evidence indicates a considerably lower prevalence in communities served by both types of interventions than in control communities (0.5% vs. 1.2%; prevalence ratio, 0.3).

Between baseline and the final survey, in each group of communities, the proportion of respondents who had had any casual partners in the previous year decreased, and the proportions reporting ever having used condoms and having used condoms with their last casual partner increased. In all three survey rounds, reports of genital ulcers and vaginal discharge were most common in communities with a two-pronged intervention in place. Adjusted analyses confirmed that in the periods covered by the second and third surveys combined, the prevalence of condom use with the last casual partner and of recent vaginal discharge was elevated in communities with a two-pronged prevention strategy; condom use with the last casual partner also was marginally elevated in communities with a behavioral intervention.

The researchers offer a number of possible explanations for their findings. Most important, they note that substantial shifts toward safer sexual behavior, unrelated to the interventions being assessed, were occurring during the trial period; these changes could have come about simply as a response to the HIV epidemic or as a result of HIV education messages from the government and the media.

Despite the interventions' ineffectiveness in this trial, the researchers contend that similar ones "could work in other regions with a rising incidence of HIV-1 and less health education available." The authors of an editorial accompanying the study echo that conclusion and suggest that "this was the right trial done at the wrong time."[2] They note that whereas behavioral interventions undertaken too early in an HIV epidemic may have little effect because people do not feel threatened enough to modify their behaviors, those implemented too late may have little impact because people who are motivated to change their behavior likely are already doing so. Nevertheless, they conclude that "the development, piloting, and full-scale evaluation of promis-

ing interventions is essential to the success of HIV prevention and should receive greater priority."–*D. Hollander*

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Cervical Cancer Risk Rises If Women with HPV Also Have Herpes Infection

Women who have human papillomavirus (HPV) infection of the cervix have a greater risk of invasive cervical cancer if they also have genital herpes, according to a pooled analysis of case-control studies.[1] Women with invasive cervical cancer were much more likely than women without cervical cancer to have HPV-infected cervical cells, but they were also nearly twice as likely to have antibodies to herpes simplex virus type 2 (HSV-2). Among all women who had HPV-infected cervical cells, women who also had antibodies to HSV-2 had more than twice the risk of squamous cell carcinoma and more than three times the risk of adenocarcinoma or adenosquamous cell carcinoma relative to women who did not have these antibodies. Neither past sexual behavior nor chlamydial infection modified these associations.

Data were obtained from seven studies conducted in Thailand, the Philippines, Morocco, Peru, Brazil, Colombia and Spain. The analysis included 1,263 women with invasive cervical cancer (1,158 with squamous cell carcinoma and 105 with adenocarcinoma or adenosquamous cell carcinoma) and 1,117 women without cervical cancer who were the same age. Exfoliated cervical cells were tested by a polymerase chain reaction assay to determine if they contained HPV DNA and, if so, the HPV type. Serum samples were tested for the presence of type-specific antibodies to HSV-2 and HSV-1, and for antibodies to *Chlamydia trachomatis*. Personal interviews covered social, demographic, reproductive and other characteristics. Unconditional logistic regression was used to generate summary odds ratios.

On average, women with invasive cervical cancer were 48–49 years old, and women without cancer were 47 years old. Almost all of the women with cervical cancer were HPV-positive (91–95%), compared with 15% of the women without cervical cancer. Women with cervical cancer were significantly more likely than women without cancer to test positive for HSV-2 (44% in both cancer subgroups vs. 26%).

Among women without cervical cancer,1 several markers of sexual behavior were significantly associated with the odds of testing positive for HSV-2. Compared with married women, both cohabiting women and women who were single, separated, divorced or widowed had significantly elevated odds of infection (2.2 and 1.6, respectively). The odds were nearly three times as high among women who had had three or more lifetime sex partners as among those who had had one or none (2.9). The odds were more than twice as high for women who had antibodies to *C. trachomatis* as for women who did not (2.2), and were 60% higher among women who had used oral contraceptives for five or more years than the odds among never-users (1.6). However, the odds of testing positive for HSV-2 were not elevated among women who were infected with HPV.

A multivariate analysis was performed among HPV-positive women, taking into account age, study center, HPV type, history of Pap smears, oral contraceptive use, number of full-term pregnancies and presence of antibodies to *C. trachomatis*. HPV-infected women who were also positive for HSV-2 had more than twice the odds of squamous cell carcinoma found among HPV-infected women who tested negative for HSV-2 (2.2), and more than three times the odds of adenocarcinoma or adenosquamous cell carcinoma (3.4). Compared with HSV-2-positive women who had low-risk types of HPV, those who had high-risk HPV other than type 16 had 2.6–4.2 the odds of invasive cervical cancer, and those who were positive for type 16 had 4.0–6.7 times the odds.

After taking into account a woman's number of lifetime sexual partners and her age at first intercourse, HPV-positive women who were also infected with HSV-2 still had nearly twice the odds of squamous cell carcinoma as did those who tested negative for HSV-2 (1.9). This risk was not significantly modified by their age, use of oral contraceptives, marital status, number of full-term pregnancies or presence of *C. trachomatis* antibodies. In contrast, HPV-positive women who tested positive for HSV-1 were not at a higher risk of squamous cell carcinoma relative than those who were negative for HSV-1.

"[G]enital HSV-2 infection may act in conjunction with HPV infection to modestly increase the risk of invasive cervical cancer," the investigators comment. They add that a woman's past sexual behavior and the presence of chlamydial infection do not modify this association, supporting a direct link between genital herpes and the risk of cancer in HPV-positive women.

The investigators suggest several mechanisms that may explain genital herpes's role as a cofactor in HPV-induced cervical cancer. Herpes lesions may allow HPV easier access to deeper cell layers of the cervix; alternatively, the inflammation caused by these lesions may interfere with an immune response to HPV or may damage the DNA in HPV-infected cells. The herpes virus may also stimulate HPV to replicate or to integrate its DNA into the DNA of cervical cells. The investigators conclude that "Future studies are needed to elucidate at which step in the pathogenesis of HPV-induced cervical carcinogenesis HSV-2 infection may be relevant."–*S. London*

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For Cameroonian Youth, Perceived Risk and Parental Support Boost Condom Use

Single young men and women in urban Cameroon are more likely to have ever used a condom if they perceive that they are personally at risk of HIV infection or that their parents support condom use. Of approximately 1,300 sexually experienced young persons surveyed in 2000,[1] more than three-quarters had used a condom at least once; however, fewer than half always used condoms with casual partners, and fewer than one-quarter always used them with their regular partner. Young men and women were more likely to report current use of condoms if they were confident that they could use one correctly and that they could persuade their partner to use one.

Data for the analysis came from the survey responses of the 1,284 sexually experienced participants from a randomly selected sample of 15–24-year-olds residing in Cameroon's two largest cities, Yaoundé and Douala. To identify factors affecting condom use among young

people, trained, same-sex peer interviewers had asked respondents whether they had ever used condoms and whether they had used condoms during their most recent sexual intercourse with a regular partner and during their most recent intercourse with a casual partner. Respondents had also been asked how frequently they used condoms with regular partners and casual partners. Those who reported always using condoms were considered consistent users. The survey also assessed respondents' perceptions about characteristics of condoms and personal access to condoms, the potential impact of pregnancy and HIV on their lives, support for condom use in their social environment, perceived personal susceptibility to pregnancy and sexually transmitted infections, and self-efficacy—their belief that they could use condoms correctly and could persuade their partner to use condoms.

Of the 557 female and 727 male respondents with sexual experience, slightly more than four in 10 were aged 15–19 years; approximately nine in 10 had attended or were currently attending secondary school, and more than half were currently students.

Half of male respondents (50%) but fewer than one-third of female participants (27%) reported having had multiple partners in the previous year. Nearly eight in 10 respondents (78% of males and 77% of females, respectively) reported having used a condom at least once; that proportion was higher among 20–24-year-olds (82% and 82%) than among 15–19-year-olds (71% and 72%). Fewer than half of young women and men (31% and 45%) used them consistently with casual partners, and even smaller proportions (14% and 20%) used them consistently with regular partners. In their most recent sex with a casual partner, 47% of young women and 60% of young men had used a condom. Thirty-four percent and 45%, respectively, reported condom use in their most recent sex with a regular partner; among female participants, this proportion differed by age (40% of teenage respondents vs. 29% of respondents in their early twenties).

In logistic regression analyses that controlled for number of partners, age, level of education, current school enrollment and socioeconomic status, variables related to perceived parental support and perceived personal susceptibility were associated with ever-use among male and female respondents. For example, the odds of use were higher among male and female participants who believed that having sex without a condom put them at moderate or high risk of HIV than among those who perceived minimal or no risk (odds ratios, 1.7 and 2.0, respectively). Respondents who perceived that their parents supported use were more likely to have ever used a condom than respondents who perceived no such support (1.6 and 2.5). The odds of ever-use were also elevated among female respondents who perceived AIDS as nonfatal (2.6).

Personal characteristics were also associated with ever-use. For example, the odds of ever-use increased with age for male and female participants (1.2). In addition, young men who had had multiple recent sexual partners were more likely to have used condoms (2.5), and female respondents who lived in Douala were less likely to have done so than those who lived in Yaoundé (0.6).

Condom use at most recent sex with a regular partner was associated with perceived condom attributes and self-efficacy among young men and with self-efficacy among young women. Male and female respondents were significantly more likely to report recent use of a condom if they believed that they could persuade their regular partner to use one (odds ratios, 8.9 and 20.7, respectively) and if they were confident in their ability to use condoms correctly (1.9 and 2.0). However, the odds that young men had used a condom at their most recent sex with a regular partner were reduced if they believed that condom use makes sex less pleasurable (0.6). For female respondents, age was negatively associated with recent use with a regular partner (0.9).

The analysis examining condom use with a casual partner at most recent sex was conducted for male respondents only, because few young women reported having a recent casual partner. Young men who perceived their personal risk of HIV infection as moderate or high had elevated odds of recent use with a casual partner (2.6), as did those who knew of a nearby source of condoms (2.7). The odds were also higher among young men who believed they could convince casual partners to use condoms (7.7) and those who felt confident about their ability to use condoms correctly (3.1).

The researchers note that their study is limited by its reliance on self-reported data and that cross-sectional data cannot necessarily establish causal relationships. Nonetheless, they believe their results show a strong association of condom use with perceived personal risk, self-efficacy, and perceived parental support for use. They recommend that future condom-promotion programs in urban Cameroon and similar settings should promote parental support, convince young persons that their sexual history can put them at risk of HIV infection, convey the message that HIV risk from sex with regular partners is not low, and encourage the perception that they can use condoms correctly and can convince their partners to use them.—*C. Coren*

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Three Differing Emergency Contraceptive Regimens Are Equally Effective

Three regimens of emergency contraception—a single 10 mg dose of mifepristone, a single 1.5 mg dose of levonorgestrel and two 0.75 mg doses of levonorgestrel taken 12 hours apart—appear to be equally effective. According to results of a randomized, double-blind trial among 4,071 women in 10 developed and developing countries who sought emergency contraception within five days of unprotected coitus,[1] there was no significant difference in pregnancy rates by emergency contraceptive method. Only 1.5–1.8% of the women became pregnant and 77–82% of expected pregnancies were averted, with no significant difference by type of treatment. There was no significant difference by regimen in most side effects, except for the timing of expected menses after treatment; users of mifepristone experienced delays of at least seven days significantly more often than did users of levonogestrel.

The multicenter study was undertaken to compare the emergency contraceptive efficacy of levonorgestrel and mifepristone, and to determine the feasibility of a single dose of levonorgestrel. The study was conducted in 1998–2000 in 15 family planning clinics in 10 countries—China, Finland, Georgia, Hungary, India, Mongolia, Slovenia, Sweden, Switzerland and the United Kingdom. Women with regular menstrual cycles who presented at a clinic requesting emergency contraception within 120 hours of a single act of unprotected coitus were randomly assigned to one of the three regimens—one 10 mg dose of mifepristone, one 1.5 mg dose of levonorgestrel and two 0.75 doses of levonorgestrel taken 12 hours apart. They were asked to return for follow-up one week after the estimated onset of

their next menstrual period; those who had not menstruated by that time or who had had an abnormal period were tested for pregnancy. The investigators assessed pregnancy rates, the proportion of expected pregnancies averted, participants' experience of side effects and delays in the return of menstruation.

A total of 4,071 women provided usable data for analysis, roughly one-third of whom were randomly assigned to each regimen. Fifty-four percent of participants were Chinese, 34% were white and 12% were of other races or ethnicities; their average age was 27 years. There were no significant differences between treatment groups in background characteristics. Overall, 60% of women had been pregnant and 48% had had an induced abortion, but these proportions varied widely by center. Fifty-two percent of women had asked for emergency contraception because they had not used any contraceptive method, 44% because a condom had failed, and 3–4% because another method had failed. Overall, 26% of participants had used emergency contraception before. Forty-four percent of the women presented for treatment within 24 hours of unprotected coitus, 72% did so within 48 hours, and 88% within 72 hours.

The three emergency contraception regimens had the same efficacy, even after the investigators controlled for treatment center and ethnicity. Overall, only 1.5–1.8% of women became pregnant. The regimens prevented 77–82% of pregnancies that would have been expected in the absence of emergency contraceptive use (a nonsignificant difference by treatment group). There were no significant differences in the risks of pregnancy between users of mifepristone and users of both levonorgestrel regimens combined, between users of mifepristone and users of single-dose levonorgestrel, and between users of one dose and users of two doses of levonorgestrel.

Among women in all treatment groups, there was no significant difference in pregnancy rates between those who took their pills within 72 hours of unprotected coitus and those who received treatment later. An increasing trend in pregnancy rates over the first five days after unprotected coitus was significant, but the sample sizes were too small to analyze this trend separately by treatment group. Among women who had unprotected intercourse after treatment but before expected menses, the rate of pregnancy was significantly higher among those who took mifepristone than among those who took levonorgestrel.

There were no differences by treatment group in the proportions of women reporting nausea, vomiting, diarrhea, fatigue, dizziness, headaches or breast tenderness. However, a significantly higher proportion of levonorgestrel users than of mifepristone users reported bleeding unrelated to menstruation in the first week after treatment (31% vs. 19%). Overall, women in the developed countries reported more side effects than those in the developing countries. In addition, the proportion of women whose first menses after treatment began more than seven days later than expected was significantly higher among mifepristone users than among levonorgestrel users (9% vs. 5% among nonpregnant women only).

The researchers affirm that there were no differences in efficacy among the three treatment groups; moreover, within the limits set by the study, the single dose of levonorgestrel was at least as effective as the split dose. According to the investigators, because the risk of pregnancy continues after treatment, if women have further acts of unprotected intercourse, that risk "should be highlighted, especially if mifepristone is used"; contraceptive use should be encouraged if abstinence is unfeasible. Levonorgestrel's advantage of being associated with early menses means that users of this method will menstruate sooner, and be relieved of pregnancy anxiety sooner, than users of mifepristone. The researchers conclude that all three regimens "prevent a high proportion of pregnancies, even up to [five] days after coitus."*–L. Remez*

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Nairobi's Poorest Women Have Highest Level of Risky Sexual Behavior, Least Knowledge of HIV Prevention

Women living in the slums of Nairobi engage in riskier sexual behavior than women living in less-deprived areas of the city.[1] They began having intercourse at a younger age and are more likely to have had multiple partners in the recent past. Residents of slums and other women are equally familiar with basic facts about HIV and AIDS, but knowledge of how to prevent HIV infection is markedly lower among the most disadvantaged group. These are among the key findings of an analysis pooling data from the 1989, 1993 and 1998 Kenya Demographic and Health Surveys.

The analysts pooled data from the three surveys to obtain a large enough sample to represent both Nairobi overall and its slum areas; in all, they had information on 1,645 women aged 15–49. They classified women who reported having neither running water, electricity nor a flush toilet in their household as slum residents, and those who had all three as nonslum residents; women reporting one or two of these amenities were classified in an intermediate category. Using a variety of analytic strategies, the researchers compared the risk-related behavior of slum residents and other Nairobi women; multivariate analyses examined independent associations between residence and risky behaviors by controlling for women's education, age, childhood residence, length of time in their current home, religion and marital status, and the sex of the head of their household.

Ninety-four percent of women living in slums were sexually experienced, compared with 79% of nonslum dwellers. Among 15–24-year-olds, the proportions who had ever had sex were 89% and 58%, respectively. Women living in slums had begun having intercourse earlier (at age 15.6, on average) than those in the least-disadvantaged households (17.6).

Using life-table calculations, the analysts found that overall, 14% of slum residents and 5% of nonslum residents had begun having intercourse by age 12; by 14 years of age, 55% and 23%, respectively, were sexually experienced. By the time they were 18 years old, 90% of women living in slums and 62% of those from nonslum households had had intercourse. The median age at first intercourse was 15.0 years for slum residents and 18.0 years for nonslum residents.

To control for potential bias from responses of women who migrated from rural areas or small towns, the analysts performed separate life-table calculations for women who had grown up in cities. These results showed even starker contrasts by residence than the findings for the overall sample. In this subgroup, 18% of slum residents and 3% of nonslum dwellers were sexually experienced by age 12;

65% and 10%, respectively, had had intercourse by age 14. Virtually all women who had grown up in cities and were living in slums when surveyed had had sex by age 18, compared with half of those living in nonslum dwellings. The median age at first intercourse was five years younger for slum residents (15.0) than for nonslum residents (20.0).

Findings from hazards analyses confirm that residence is significantly associated with age at first intercourse. Overall, women living in nonslum areas were about half as likely as slum residents to be sexually experienced (hazards ratio, 0.5); among those who grew up in a city, the differential was even greater (0.3). Results were similar when the analyses were restricted to women aged 15–24. In all of the analyses of sexual initiation, findings for women living in intermediate circumstances lay between those for slum and nonslum residents.

Data from the 1993 and 1998 surveys permit analysis of women's number of sexual partners in a given period (the preceding six and 12 months, respectively). Six percent of all women had had more than one partner during the specified interval; the proportion ranged from 4% of nonslum dwellers to 9% of slum residents. The pattern was essentially the same among married women and among 15–24-year-olds: In both subgroups, the proportion reporting multiple partners was 4% overall and ranged from about 2% of women in the least-deprived households to 9% of those living in slums.

Odds ratios from logistic regression analysis indicate that residence in a slum was associated with having multiple partners even when other background factors were taken into account. Compared with nonslum residents, women living in slums had a significantly increased likelihood of having recently had multiple partners (odds ratio, 2.8). A significant, and large, association was also evident for the youngest women (6.4), while for married women, the odds ratio was intermediate (3.8) and only of marginal significance. Living in a household with one or two essential amenities was not significantly associated with the odds of having had multiple partners.

Finally, the analysts examined 1993 and 1998 data on women's knowledge about HIV and AIDS, and how to prevent infection. Regardless of the residential context, virtually all women knew about the disease; across residential categories, similar proportions had a basic familiarity with condoms (75–83%), and similar proportions knew that a person who looks healthy may have HIV or AIDS (89–92%). However, knowledge of ways to avoid HIV infection was significantly higher among women living in the least-disadvantaged circumstances than among slum dwellers: The proportions citing abstinence and monogamy as protective measures were 76% and 53%, respectively; 51% and 36% knew that condom use could prevent infection. Overall, 90% of nonslum residents identified one of these protective measures, compared with 68% of slum dwellers.

The analysts acknowledge that their findings, based on a proxy measure of residential context, need to be confirmed by "direct evidence from surveys in urban slums." They add that it is "crucial to establish whether unsafe sexual practices are...truly a consequence of slum living or...a consequence of poverty in general." Nevertheless, they conclude that the widening disparity between the rich and poor in African cities has "obvious implications for measures to control the spread of HIV/AIDS."–*D. Hollander*

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CORRECTION

In the digest "Offering a Woman Sterilization During an Emergency Cesarean Section May Sometimes Be Appropriate" [2003, 29(1):52], the first full sentence in the third column of page 52 is incorrect. It should read: "(All sterilized women who regretted having had the operation were offered a reversal at no cost; two women accepted this offer, but decided against reversal when they tested positive for HIV.)"