In West Africa, Vaginal Discharge Is Not Usually Caused by Gonorrheal or Chlamydial Infection

In West Africa, women with vaginal discharge who are not sex workers and do not have abdominal pain are unlikely to have a cervical gonorrheal or chlamydial infection.[1] According to an analysis of data from more than 700 women in five countries, only 2% were infected with gonorrhea and 3% with chlamydia. The prevalence of these infections among women who still experienced discharge after treatment for vaginal infections (based on the assumption that this was causing the symptom in most of the women) was no higher than the prevalence before this treatment, leading the researchers to conclude that vaginal discharge does not seem to be associated with gonorrheal and chlamydial infections in this population.

Data for analysis came from women visiting 11 health facilities in Benin, Burkina Faso, Ghana, Guinea and Mali whose main symptom was vaginal discharge. Women were excluded if they were sex workers, had abdominal pain or were pregnant. After providing demographic, behavioral and health information, the participants received a pelvic examination, and cervical specimens were collected and tested for gonorrhea, chlamydia and trichomonas. Because vaginal discharge is often caused by bacterial vaginosis, trichomoniasis or candidiasis, all of the women were treated with a single 2 g dose of metronidazole and with clotrimazole vaginal cream for three days; half were asked to return a week later if their discharge had not improved, while the other half were asked to return a week later regardless of their symptoms. At the return visit, all women in the former group and those in the latter group who had experienced no or only a partial response were treated for gonorrhea and chlamydia with ciprofloxacin and doxycyclin.

Half of the 726 women included in analyses were 21–29 years old. The median duration of vaginal discharge was 30 days, and one-third of women had previously been treated. Most women (82%) had had one sexual partner in the three months before the visit, and 17% had had a new sexual partner during that time.

Overall, only 2% of the women had a gonorrheal infection; the proportion who were infected was significantly lower in Ghana (0%), Benin (1%) and Burkina Faso (1%) than in Guinea (4%) or Mali (4%). The prevalence of gonorrhea was significantly higher among women who had pain during urination than among those who did not (4% vs. 1%), and was also higher among women who experienced pelvic pain during examination than among other women (7% vs. 2%).

Just 3% of women were infected with chlamydia, a proportion that did not vary signifcantly across countries. Women who had had no formal education were significantly more likely to have a chlamydial infection than were those who had had at least some education (7% vs. 3%). Prevalence rose from 0% among women who had had no partners in the past three months to 3% among those who had had one and 16% among those who had had two or more. In addition, infection with chlamydia was more common among women who had pain on intercourse than among those who did not (6% vs. 2%), and was more frequent among women for whom pus was found on the cervical swab than among other women (7% vs. 3%).

In all, 4% of women had one or both infections. Overall prevalence was significantly lower in Ghana and Benin (2%)—where large-scale interventions for sex workers have been operating for several years—than in Burkina Faso, Mali and Guinea (6%), where such large-scale programs do not exist. The risk factors were the same as those for chlamydial infections.

The proportion of women returning one week after the initial visit was significantly higher in the group told to come back regardless of symptoms than in the group told to come back only if the discharge had not improved (62% vs. 38%). In both groups, however, women who did not have cervical infections at the initial visit were as likely as those who did to return.

At the return visit, women asked to come back if their symptoms had not improved and women asked to come back regardless were similarly likely both to have had a complete response (39% and 47%, respectively) and to have had a partial response (59% and 53%) on the basis of self-reports. Within each treatment group, rates of responses did not differ significantly between women who did and did not have cervical infections at the initial visit. Likewise, in terms of objective responses, within each treatment group, women who had a cervical infection were as likely as women who did not to have a vaginal discharge at the return visit.

The strategy of asking women to return if treatment for vaginal infections did not improve their symptoms and treating all who returned resulted in treatment of 60% of women with cervical infections (sensitivity) and avoided treatment of 64% of women without such infections (specificity); however, only 5% of women treated actually had cervical infections (positive predictive value). The corresponding values for the strategy of asking women to return regardless of response and treating those who had no or only a partial response were 23%, 66% and 4%. In addition, the set of risk factors commonly used for presumptive treatment of cervical infections in women with vaginal discharge had respective values of 38%, 75% and 6%.

The findings of this and other studies suggest that the symptom of vaginal discharge in West African women is not usually caused by gonorrheal or chlamydial infections, the authors say. Furthermore, continuing to search for predictive factors for these infections among women in the region with vaginal discharge is "futile" in light of the low prevalence observed. They suggest instead that "women who are not [sex workers] who present with vaginal discharge without abdominal pain should be treated only for agents of vaginitis." They also call for intensified efforts to reduce gonorrheal and chlamydial infections among sex workers, noting that data suggest that such efforts eventually lead to lower rates of cervical infection among women in the general population. *–S. London*

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Progression of HIV Disease In Pregnant Women Slowed By Daily Multivitamin Use

Pregnant women infected with HIV have a roughly one-third lower risk of developing AIDS or dying from AIDS-related causes if they take a daily multivitamin containing vitamin B complex, vitamin C and vitamin E, according to a randomized, double-blinded study in Tanzania.[1] Compared with women taking a placebo, those taking the multivitamin also had reduced risks of HIV-related complications such as thrush and dysentery; in addition, they had more CD4+ immune cells and less virus in their blood. In contrast, women given vitamin A alone experienced few of these benefits, and women given vitamin A as well as the multivitamin had fewer and weaker benefits than their counterparts given only the multivitamin.

Between 1995 and 1997, researchers recruited pregnant women in the city of Dar es Salaam who had HIV disease of stages 1–3.* To assess the impact of micronutrient status on progression of the disease, they randomly assigned women to receive one of four daily oral supplements: a multivitamin excluding vitamin A (vitamins B1, B2, B6, B12, C and E), vitamin A (preformed vitamin A and beta carotene), the multivitamin plus vitamin A, or a placebo. Study participants in all four groups were also given folic acid and iron during pregnancy. The women had a physical examination and were questioned about symptoms every month, and blood samples were collected every six months.

On average, the 1,078 women included in the analyses were about 25 years old. Slightly more than three-fourths had had 5–8 years of education, and nearly 60% had had 1–3 prior pregnancies. Eight in 10 had stage 1 disease, and few, if any, were receiving antiretroviral therapy.

Pill counts revealed that women took 79% of the supplement pills as instructed during the study. The median duration of follow-up was nearly six years for assessment of death and five years for assessment of disease progression. The proportion of women who progressed to AIDS or died from AIDS-related causes was 25% in the multivitamin group, 26% in the multivitamin plus vitamin A group, 29% in the vitamin A group and 31% in the placebo group.

*According to criteria of the World Health Organization, these stages are primary infection, clinically asymptomatic disease, symptomatic disease, and progression to AIDS.

In regression analyses, compared with women in the placebo group, those in the multivitamin group had a significant reduction of nearly one-third in the risk of progression to AIDS or death from AIDS-related causes (relative risk, 0.7). In more-detailed analyses, women in this group had reduced risks of progression to AIDS (0.5) and of progression to disease of stage 3 or higher (0.7). These benefits were greatest in the first two years of multivitamin use.

In contrast, among women in the other two vitamin groups, the risk of progressing to AIDS or dying from AIDS-related causes was statistically indistinguishable from that in the placebo group. In more-detailed analyses, only the risk of progression to disease of stage 3 or higher for women who were given a multivitamin plus vitamin A was significantly reduced (relative risk, 0.8).

Compared with their counterparts in the placebo group, women in the multivitamin group had significantly reduced risks of a dozen HIV-related complications, including oral and gastrointestinal conditions such as thrush and dysentery (relative risks, 0.2–0.7); fatigue (0.6); rash (0.7); and acute upper respiratory tract infections (0.8). Women in the group given the multivitamin plus vitamin A had significant reductions in the risk of only five HIV-related complications (0.6–0.8), while women in the group given vitamin A alone did not have significant reductions in any.

On average, the concentration of CD4+ immune cells in blood was 11% higher in women taking a multivitamin and 9% higher in women taking a multivitamin plus vitamin A than in women taking a placebo. In addition, in a random subsample of 297 women, those in the multivitamin group had a viral load in their blood that was on average 4% lower than that among women in the placebo group, but viral load was not significantly altered in the other two vitamin groups.

Use of a multivitamin is an effective and inexpensive means of slowing the progression of HIV infection in women, the researchers contend, noting that a one-year supply of the multivitamin used in the study would have a retail cost of about $15 per person. They add that slowing progression in turn delays the need for antiretroviral therapy, which could save these drugs for later stages, avert drug-related side effects and reduce treatment costs. In conclusion, they recommend "that supplementation with the doses used in this trial be considered for HIV-infected persons before the initiation of antiretroviral therapy."–*S. London*

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Heavy Use of Tobacco and Caffeine Are Among Factors That May Reduce a Woman's Chance of Conceiving

For couples trying to conceive, certain negative lifestyle factors are associated with an increased time to pregnancy and an elevated risk of not conceiving in the first year.[1] In an observational study of pregnant women and their partners, a couple's risk of not conceiving in the first year of unprotected intercourse was raised when women smoked heavily (relative risk, 3.6), had a heavy intake of coffee or tea (1.7), or were above or below normal weight (2.2–6.9); when male partners had a heavy alcohol intake (2.2); and when the couple had a low standard of living (1.6). The risk increased with each additional factor, and the probability of being pregnant after a year dropped from 93% for couples who had one of the factors to 38% for those with four or more.

Researchers gave questionnaires to consecutive women attending prenatal clinics in two British teaching hospitals to obtain information about their age, time to pregnancy (i.e., from discontinuation of birth control use until conception), gynecologic and pregnancy history, contraceptive use and frequency of intercourse. The questionnaires also asked for information that the researchers used to assess negative lifestyle factors—for women, underweight (body mass index less than 19 kg/m^2), overweight or obesity (25–39), or severe obesity (greater than 39), and heavy coffee or tea intake (seven or more cups a day); for both partners, heavy smoking (more than 15 cigarettes a day), heavy alcohol consumption (more than 20 drinks a week), any recreational drug use and low standard of living.

Analyses were based on 1,976 women and their partners. On average, the women were 27 years old and had partners who were 30 years old. The women's mean number of pre-

vious pregnancies was 1.5. Couples had intercourse an average of two times per week. Overall, 81% of women became pregnant by the end of the first year; about half of the rest conceived in the second year. Women who did not conceive within one year were significantly older than those who did, had older partners, weighed more and smoked more; their partners smoked and drank more than the partners of women who conceived within one year.

In an analysis adjusted for factors that potentially affect conception, the time to pregnancy differed significantly among women who were nonsmokers, light smokers and heavy smokers (nine, 11 and 19 months, respectively), and among women whose partners were nondrinkers, light drinkers and heavy drinkers (nine, 10 and 17 months). Women with a normal weight became pregnant sooner (within seven months) than women who were underweight (26 months), overweight or obese (11 months), or severely obese (14 months). Couples with a high standard of living conceived sooner than those with a low standard (seven vs. 11 months). Overall, the time to pregnancy increased with total number of negative lifestyle factors, from three months for couples with none to 21 months for couples with five or more.

In a second adjusted analysis, couples' risk of failing to conceive within the first year was elevated when women smoked heavily (relative risk, 3.6) or had a heavy intake of coffee or tea (1.7). Relative to couples in which the man did not drink, those in which the man drank heavily had more than two times the risk of not conceiving within the first year (2.2). Couples in which the woman was underweight had a sharply elevated risk (4.8); risk was also raised when the woman was overweight or obese (2.2) and was markedly increased when she was severely obese (6.9). Couples with a low standard of living had a 60% greater risk of not getting pregnant within a year than couples with a high standard (1.6). Compared with couples who had no negative lifestyle factors, those with two had 3.3 times the risk of not conceiving within the first year, and the differential climbed steadily to 7.2 for those with five or more. The cumulative probability of conceiving within a year decreased steadily from 93% among couples with one negative lifestyle factor to 38% among those with four or more.

The researchers note that because couples who stopped trying to get pregnant were not included in the study, the apparent harmful effects of the lifestyle factors studied may be underestimates. They contend that while couples often disregard the impact of lifestyle factors on fertility, the data suggest that adopting a healthy lifestyle would more than halve the proportion of couples who are unable to conceive within one year. In the long term, such a reduction could lead to a "substantial decline in the referrals for medical investigations and fertility treatments," they conclude.–*S. London*

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Partner Violence Elevates The Risk of HIV Infection For South African Women

Fifty-five percent of women who participated in a study on gender-based violence and HIV/AIDS in Soweto, South Africa,[1] reported that they had experienced physical or sexual abuse by a male partner. Those who had experienced both types of abuse or frequent violence were significantly more likely to test positive for HIV than those who reported little or no abuse, even when sexual risk behaviors common among women who have a history of gender-based violence were taken into account (odds ratio, 1.5). In addition, women who reported a large power imbalance in their current relationship had higher odds of testing positive than those who said the partnership was equal (1.5).

The findings are based on data from 1,366 women aged 16–44 who were recruited while seeking antenatal care at clinics in 2001–2002; those who elected to have a routine HIV test were included in the study. In structured interviews conducted before the women learned their HIV status, same-sex interviewers asked participants about their demographic characteristics; their experience of physical and sexual violence perpetrated by male partners, childhood sexual abuse and coercion at first intercourse; the level of male control in their current (or most recent) relationship; and a range of sexual risk behaviors. The researchers conducted multivariate logistic regression analyses to examine independent associations between these factors and HIV status.

Fifty percent of participants were married or living with a partner, 78% were in a relationship of at least a year's duration, 41% had had 12 or more years of schooling and 37% said that there was not enough to eat in their household. Thirty-four percent of the women tested positive for HIV.

Overall, 55% of participants reported that they had ever experienced physical or sexual violence perpetrated by a male partner; very few women reported sexual violence without also indicating some form of physical abuse. The majority of abused women indicated that the violence had occurred "a few times" or "many times" (which the researchers categorized as medium or high frequency). The women were roughly evenly distributed across a scale measuring low, moderate or high levels of power imbalance between women and their current partners. Sexual abuse in childhood, at first intercourse and by males other than partners were each reported by fewer than 10% of participants.

The prevalence of sexual risk factors varied: Roughly half of participants reported having had five or more male partners, never having used a condom or having had at least one casual partner; about one in five had ever received material compensation for sex. Approximately one-third of the women had ever drunk alcohol, but only a small proportion had problems with drug or alcohol use.

In preliminary analyses, several measures of intimate partner violence appeared to predict HIV infection: having experienced physical violence only, both physical and sexual violence, a medium or high frequency of either type of violence, or "broad violence" (a summary measure defined as both physical and sexual violence or one type at a high frequency). Reporting a large power disparity in the current sexual relationship and having participated in any of the sexual risk behaviors examined, except never having used a condom, were also associated with an increased likelihood of HIV infection. All of the risk behaviors—including never having used a condom—were linked to various forms of intimate partner violence, child abuse and power disparities in women's current relationships.

When demographic characteristics and sexual risk factors were taken into account, intimate partner violence and large power differentials continued to be strong predictors of HIV infection: Women who had experienced broad violence were significantly more likely than those who had experienced limited or no violence to have positive test results (odds ratio, 1.5), and participants who reported a large imbalance of power in their current partnership

had elevated odds of HIV diagnosis (1.5).

The researchers acknowledge the limitations of cross-sectional and self-reported data, and note the imprecision of a number of measures. They suggest that because abused and disempowered women have an increased risk of HIV infection even after their own risk behavior is considered, abusive and controlling men may be more likely than other men to be infected with HIV or with other STIs that can increase women's susceptibility to HIV. The researchers conclude that "addressing problems of gender-based violence and HIV will require broad community and societal level transformations that challenge entrenched cultures of violence and male-dominated norms of gender relations."

The authors of an accompanying commentary point out that many major initiatives to stem the spread of HIV/AIDS—including the U.S. President's Emergency Plan for AIDS Relief—acknowledge the importance of addressing gender inequities, intimate partner violence and resultant challenges to HIV prevention.[2] However, they note that many implementation strategies, such as those that focus on abstinence among young people, do not account for the circumstances and effects of gender-based violence and may therefore be of limited use to women who have been abused or disempowered. The commentators stress the need to "turn the global rhetoric into effective action" in order to make "a real difference in the lives of women and girls worldwide."—*R. MacLean*

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Consistent Use Is Crucial To Efficacy of Condoms In Prevention of STIs

Comparing the sexually transmitted infection (STI) prevalence rates of condom users and nonusers may not be as relevant as comparing those of consistent and inconsistent users, according to a U.S. study of STI clinic visits.[1] Fifty-four percent of clinic visits were by patients who reported having used condoms in the previous four months—38% sometimes and 16% at every intercourse. Risky sexual behaviors, such as having ever had more than 10 sexual partners or recently having had new or multiple partners, were reported at a significantly greater proportion of visits by condom users than of those by nonusers. In analyses comparing condom users with nonusers, any condom use did not offer clear protection against STIs; however, in analyses comparing consistent and inconsistent condom use, consistent use significantly reduced the odds of gonorrheal and chlamydial infections among men and women (odds ratios, 0.7–0.9), of trichomoniasis in women (0.9) and of genital herpes in men (0.7).

The researchers used medical records of all females and heterosexual males who had visited a public STI clinic in Denver, Colorado, between January 1, 1990, and December 31, 2001, and reported having had at least one sexual partner in the previous four months. Data included demographic information, lifetime number of sexual partners, number and type of partners in the past four months, STI history, and condom and other contraceptive use in the past four months. The researchers calculated the prevalence of three bacterial infections—gonorrhea, chlamydia and trichomonas—and of three viral infections—genital herpes, genital warts and molluscum contagiosum. For viral infections, only first-time cases of genital warts and herpes and cases in which symptoms had been present for 30 days or less were included. Bivariate and logistic regression analyses were used to determine the predictors of any use and consistent use of condoms, and the associations between levels of condom use and STIs.

Within the study period, there were 126,220 clinic visits by 75,397 individual patients; 39% of visits were made by women and 61% were made by heterosexual men. The median ages of women and of men were 24.5 and 27.0 years, respectively. Overall, 37% of clinic visits were by whites, 35% were by blacks, 25% were by Hispanics and 3% were of by members of other races and ethnicities. Chlamydia was the most prevalent STI among women (10% of visits) and men (12% of visits).

Fifty-four percent of clinic visits were by patients who reported having used condoms in the previous four months—38% sometimes and 16% at every intercourse. Men reported condom use at a significantly greater proportion of visits than did women (56% vs. 51%), although this disparity was attributable to a difference in inconsistent, not consistent, use. Women's use and consistent use of condoms was lower if they had relied on another contraceptive method in the previous four months (43% and 13% of visits, respectively) than if they had not (58% and 19%). In bivariate analyses, condom use was also associated with younger age: Greater proportions of clinic visits by patients younger than 20 than of those by patients 20 or older included reports of condom use (64% vs. 52%) and consistent use (18% vs. 16%). Finally, the prevalence of any use and of inconsistent condom use was greatest among blacks (61% and 44% of visits, respectively), whereas whites had the highest level of consistent use (18% of visits); Hispanics were the least likely to have used condoms, regardless of use level.

Condom use was also related to certain sexual risk behaviors. A significantly greater proportion of visits by condom users than of those by nonusers recorded patients' having ever had more than 10 sexual partners (58% vs. 51%). Furthermore, greater proportions of visits by condom users than of those by nonusers (60–63% vs. 36–41%) and of visits by inconsistent users than of those by consistent users (64% vs. 50–59%) showed patients' having had at least one new partner or multiple partners in the past four months.

In logistic regression analyses of data for men, any condom use was significantly associated with being younger than 20, being non-Hispanic and having had at least one new sexual partner or multiple partners in the past four months (odds ratios, 1.4–2.0); men who had a history of STI had slightly elevated odds of any condom use (1.04). Results for consistent use of condoms were similar, although age was no longer significant and men who had recently had multiple partners were less likely than those who had had a single partner to have always used condoms during intercourse (0.5).

Among women, younger age, being non-Hispanic, having had at least one new sexual partner or multiple partners in the past four months and having had more than 10 lifetime sexual partners were significantly associated with any condom use (odds ratios, 1.1–2.0); women who had used other contraceptive methods in the past four months were less likely than others to have used condoms (0.6). Women 20 or older were more likely than those 19 or younger, and white women were more likely than Hispanics, to have used condoms consistently (1.2 and 1.3, respectively); having recently had multiple partners and used other contraceptive methods were associated with reduced odds of consistent condom use (0.6 and 0.8, respectively).

In analyses controlling for demographic characteristics, sexual risk factors and STI history, male condom users were more likely than nonusers to have genital warts (odds ratio, 1.2), but less likely to have genital herpes (0.8). However, men who used condoms consistently were less likely than those who used them inconsistently to have gonorrhea, chlamydia or genital herpes (0.7–0.9). Among women, any condom use was associated with an increased likelihood of chlamydia (1.2), but a decreased likelihood of gonorrhea (0.9); female consistent condom users were less likely than inconsistent users to have any of the three bacterial STIs studied (0.7–0.9).

The researchers conclude that comparing the STI prevalence rates of condom users and nonusers may not be a useful comparison, given that greater proportions of condom users than of nonusers reported recent risky sexual behavior. They suggest that "the more relevant comparison is within the condom use group, between those who used them consistently and those who did not," in which consistent use offered men and women significant protection against bacterial infections, and protected men against genital herpes.–*J. Rosenberg*

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Hospitals with Second Opinion Policy Perform Fewer Cesarean Sections

In Latin America, where the overall rate of cesarean section is among the highest in the world, cesarean rates at 17 hospitals that mandated a second opinion for nonemergency procedures decreased by 7% in relation to those at comparison hospitals.[1] The benefit was due mainly to a 13% relative reduction in the rate of intrapartum cesarean sections (those performed during labor). Implementation of the second opinion policy was not associated with any adverse changes in measures of maternal and neonatal well-being. In addition, women delivering at hospitals with the second opinion policy were as satisfied with their care as were women delivering at hospitals following usual policy.

Hospitals were eligible for the study if they had a cesarean section rate of at least 15% and had more than 1,000 deliveries per year. Matched hospitals were randomly assigned to an intervention group or a control group. Hospitals in the intervention group implemented a mandatory policy that when an attending physician decided a woman needed a nonemergency cesarean section, the physician had to obtain a second opinion from another physician of equal or higher clinical status. The consulting physician applied evidence-based guidelines and discussed the case with the attending physician, who made the final decision. Changes in group outcomes between the six-month periods preceding and following implementation of the intervention were compared.

Analyses were based on data from 149,276 women who delivered at 34 hospitals in Argentina, Brazil, Cuba, Guatemala and Mexico between October 1998 and June 2000. Nearly all of the hospitals were public or nonprofit. Data collected during the first six-month period revealed that intervention and control hospitals had similar overall cesarean section rates (26% and 25%, respectively) and proportions of women who had had a previous cesarean section (14% at each), but intervention hospitals had a higher overall rate of intrapartum cesarean section (17% vs. 15%) and a higher proportion of women having their first birth (38% vs. 34%).

Hospitals in the intervention group experienced a small but significant reduction in the rate of all nonemergency cesarean sections relative to that of hospitals in the control group (relative rate reduction, 7%). This reduction reflected a relative reduction of 13% for the intervention hospitals in the rate of intrapartum cesarean sections and a relative increase of 2% in elective procedures. Relative reductions also varied according to the reason for the cesarean section and were greatest for those done for maternal health (29%), fetal distress (22%) and slow progression of labor (20%).

Intervention hospitals did not differ from control hospitals with respect to changes in rates of stillbirth, neonatal mortality, perinatal mortality or admission of neonates to an intensive care unit for more than a day. Similarly, differences between the two groups in changes in rates of operative vaginal delivery, maternal postpartum intensive care unit admission for more than a day and maternal death were statistically indistinguishable.

In hospitals in the intervention group, second opinions were obtained for 88% of nonemergency cesarean sections after implementation of the policy. The consulting physician agreed with the attending physician 96% of the time. Overall, the second opinion led to a change in the attending physician's initial decision to perform a cesarean section in only 2% of cases.

Of women at intervention and control hospitals whose physicians had initially scheduled them for a cesarean section, similar proportions were told or saw that their physician consulted another physician; 90% of these women reported that knowing of this consultation made them feel "better," with no difference between groups. The vast majority of women in both groups said they would use the same hospital for future deliveries (88% and 87%, respectively) and would recommend it to other pregnant women (91% and 93%).

Without knowledge of the study's results, 54% of physicians at intervention hospitals rated the mandatory second opinion policy as "effective" or "very effective" in reducing the rate of cesarean section. Furthermore, 87% thought it would be a feasible strategy for public hospitals, and 91% would recommend its use in such institutions; those figures were 41% and 65% in regard to private hospitals.

"The implementation of a mandatory second opinion policy in public hospitals on an indication of intrapartum caesarean section could prevent 22 caesarean sections for every 1,000 women in labour without harmful effects [to] the baby or the mother," the researchers argue. They note that hospital staff and policymakers will need to weigh the benefits and costs of such a strategy to determine if it is appropriate for their institution.–*S. London*

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In South Africa, Wives' HIV Prevention Beliefs Affect Condom Use with Spouse

In the South African province of KwaZulu-Natal, the proportions of married people who always or sometimes use condoms are relatively small, according to an analysis of data from a household survey conducted between August 1999 and January 2000.[1] Among respondents who were married or in a cohabiting relationship, 14% of men and 17% of women reported consistent or occasional condom use; the

rest said they never used condoms or had used them only at the beginning of their relationship. For both men and women, urban residence and a secondary education or higher were positively associated with consistent or occasional condom use (odds ratios, 3.0–9.4). Among women, but not among men, those who believed they would be able to protect themselves against HIV, those who believed in the efficacy of condoms and those who perceived they were at risk of acquiring HIV from their partner had increased odds of always or sometimes using condoms (2.4–6.1).

To explore condom use within marital partnerships, researchers analyzed data from married or cohabiting adults who had participated in a survey of randomly selected households in two areas (one urban and one rural) of KwaZulu-Natal—"the province most severely affected by the AIDS epidemic in South Africa," the researchers note. The average age of the 289 women and 248 men was 35 years, and in some cases, both spouses participated. Using the 1996 census, the analysts weighted the data to reflect the proportions of the province's population living in rural and urban areas.

The first part of the study was concerned mainly with condom-related beliefs and attitudes, and sexual behavior. Overall, 95% of respondents had heard of condoms; of these, 92% knew where to obtain the method. Furthermore, large proportions agreed that condoms effectively prevent pregnancy (89% of men and 82% of women) and HIV infection (73–77%). Still, approval of condom use within a marriage was not universal (40–44%). A higher proportion of women than of men said it was acceptable for a married woman to ask her husband to use a condom (60% vs. 43%), whereas the proportion who said it was acceptable for an unmarried woman to ask her partner to use one was similar among women and men (79% and 80%, respectively).

Roughly three in 10 respondents believed that they would be able to take preventive measures to reduce their risk of HIV infection—both in general and, specifically, if their partner or spouse had been infected by an extramarital partner. Men more commonly reported having had two or more partners in the previous three years than did women (18% vs. 7%). However, women were more commonly concerned about contracting HIV from their spouse or cohabiting partner than were men (57% vs. 30%). Forty-one percent of men and of women said they knew someone who had AIDS or who had died of AIDS, or they had attended the funeral of someone who had died of the disease.

Because only 2% of men and 5% of women said they always used condoms, the analysts combined data for consistent and occasional condom use. In all, 14% of men and 17% of women fell into this category; in contrast, 86% of men and 83% of women had never used a condom or had done so only at the beginning of their marital or cohabiting relationship.

In multivariate logistic regression analyses that included variables related to condom use and behavior change (except attitudes toward condom use within and outside of marriage, "because of the extreme problem of causal interpretation"), urban respondents were more likely than rural ones to report consistent or occasional condom use (odds ratios, 4.3 for men and 3.0 for women). Respondents with a secondary education or higher were more likely than those with less education to report this (9.4 and 4.1). Among the women, but not the men, additional factors that were positively associated with always or sometimes using condoms were strong belief in the ability to adopt preventive measures against HIV infection (2.4), belief in the effectiveness of condoms to protect against both pregnancy and spread of HIV (2.9), and belief that the respondent was at risk of acquiring HIV from her partner (6.1).

On the basis of their findings, which they call "moderately positive," the analysts conclude that "barriers to condom use within marital and cohabiting partnerships may not be as immutable as many commentators have claimed," and women may not be as powerless to protect themselves from HIV as previously reported. Noting that past condom-promotion efforts have targeted people in premarital and nonmarital relationships, the researchers comment that "a pressing public health priority is to legitimate condom use within [marital and cohabiting] relationships."–*T. Lane*

REFERENCE

1. Maharaj P and Cleland J, Condom use within marital and cohabiting partnerships in KwaZulu-Natal, South Africa, *Studies in Family Planning,* 2004, 35(2):116–124.