

Exposure to a National HIV-Prevention Program Linked To Lower Risk of Infection for South African Youth

In South Africa, the proportion of women aged 15–24 years who are infected with HIV is about three times that of men this age (16% vs. 5%), according to a nationally representative survey.¹ Among sexually experienced youth, men's odds of HIV infection were elevated if they had had a genital ulcer in the past year, and women's odds were elevated if they had had an unusual vaginal discharge during that period, if their most recent partner was older than they were or if they did not use condoms consistently. The odds for each sex increased with the number of partners. In contrast, young people who had taken part in a national HIV prevention program were less likely to be infected.

Between March and August 2003, researchers conducted a nationally representative household survey among 15–24-year-olds in South Africa. Young people were asked about demographics, sexual behavior, symptoms of sexually transmitted infections and exposure to programs of a national HIV prevention campaign (loveLife). Samples of saliva were collected and assayed for HIV antibodies. The researchers used chi-square analysis to compare HIV status and characteristics between men and women, and they used multivariate logistic regression analysis restricted to sexually experienced youth to identify risk and protective factors for HIV infection. The multivariate analyses included both variables that were found significant in bivariate analyses and factors theorized as important. Analytic methods accounted for sampling strata, primary sampling units, and population weights.

The total sample consisted of 11,904 young people; 77% of eligible youth participated. As in the South African population, 82% of young people were of black African race. About half resided in rural areas; one-fourth lived in households lacking electricity. Roughly 38% of 20–24-year-olds had completed high school, and 74% of 15–19-year-olds attended school. Small proportions—1% of men and 3% of women—were married.

More than one-third of young people had attended a loveLife program, and about two-thirds said they had changed their behavior be-

cause of HIV/AIDS, with no differences between the sexes. A larger proportion of women than of men had previously been tested for HIV (25% vs. 15%).

The proportion of young women infected with HIV was more than three times that of young men (16% vs. 5%). For females, HIV prevalence rose rapidly from 4% at ages 15 and 16 to a high of 31% at age 21; for men, however, prevalence was relatively stable at 2–3% between ages 15 and 19, and then increased to 11–12% at ages 23–24.

Two-thirds of youth reported ever having had vaginal or anal sex. In this sexually experienced subset, the average number of lifetime sexual partners was greater among men than women (five vs. two), as was the average number of partners in the past year (two vs. one). A larger proportion of women than of men had had an unusual genital discharge in the past year (19% vs. 9%), whereas similar proportions had had genital ulcers or sores (7% and 6%).

Roughly 83–89% of sexually experienced youth had had sex in the past year. In this subset, the majority had not consistently (always) used condoms with their most recent partner; inconsistent use was more common among women than among men (71% vs. 61%). The most recent partner had been the same age or younger for 88% of men, but had been older for 90% of women. For the majority of each sex, the last partner had been their main partner; however, for a larger proportion of men than women, this partner had been a casual one (18% vs. 2%).

A sex-stratified multivariate analysis examined possible risk factors for HIV infection. In this analysis, young men and women who were black had significantly higher odds of HIV infection than did their counterparts of other races (adjusted odds ratios, 2.6 and 8.3, respectively). The odds of HIV infection were higher among men and women from urban settings than among those from rural settings (2.0 for each), among those aged 20–24 than among those aged 15–19 (2.6 and 4.3), and among those who had not completed high school relative to those who had (1.9 and 2.3). The odds

increased with each additional sexual partner for both men and women (1.03 and 1.09, respectively).

Women had a significantly elevated risk of being infected with HIV if they had been sexually active for longer than a year (adjusted odds ratio, 2.4), if they had not always used a condom with their most recent partner (1.5) and if they had had an unusual vaginal discharge in the past year (1.8). Among 15–19-year-old women, the odds were higher for those whose recent partner was five or more years older than for those whose partner was the same age or younger (3.2); similarly, among 20–24-year-old women, odds were higher among those whose most recent partner was 1–4 years older than among those whose partner was the same age or younger (2.3). In contrast, women who were married were less likely to be infected than their unmarried counterparts (0.6). Men who had experienced genital ulcers in the past year had higher odds of HIV infection than did men who had not experienced ulcers during this period (1.9), while men who were circumcised had lower odds than did their uncircumcised counterparts (0.6).

A second sex-stratified multivariate analysis examined possible HIV protective behaviors among sexually experienced youth, taking into account other factors potentially influencing the likelihood of HIV infection. In this analysis, young men and women who had participated in a loveLife prevention program were significantly less likely than nonparticipants to be infected with HIV (adjusted odds ratios, 0.6 for each). However, men who had ever been tested for HIV were more likely to be infected than untested men (1.9). Having known someone who had died of AIDS and having participated in youth programs was not associated with the risk of infection.

According to the researchers, although levels of behaviors that protect against HIV infection may be rising among South African youth, they are still not high enough to substantially curtail the epidemic. Given the likely interaction among the risk factors studied,

they argue, prevention efforts must be comprehensive. "Programs for youth must continue to promote partner reduction, consistent condom use and prompt treatment for sexually transmitted infections while also addressing contextual factors... that make it difficult for youth, particularly young women, to implement behavior change..." they conclude. —S. London

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Of HPV-Infected Women With Normal Smears, Most Have High-Risk Varieties

The proportion of women who do not have cancerous or precancerous changes of their cervix but who are infected with human papillomavirus (HPV) varies widely across world regions—from 5% in Europe to 26% in Sub-Saharan Africa, according to a pooled analysis of population-based surveys.¹ Sub-Saharan Africa had the highest prevalence of infection with HPV16, a type associated with a high risk of cervical cancer. However, compared with HPV-positive women in Sub-Saharan Africa, those in Europe and South America were more likely to be infected with HPV16 and less likely to be infected with other high-risk types or with low-risk types.

In the surveys, conducted between 1993 and 2003, women were randomly selected from the general populations of 13 areas in 11 countries (Nigeria, India, Vietnam, Thailand, Korea, Colombia, Argentina, Chile, the Netherlands, Italy and Spain). Cervical cells collected during pelvic examinations were used to prepare Pap or liquid-based smears, and were tested by polymerase chain reaction and enzyme immunoassay to assess the presence and types of HPV. HPV prevalence was standardized by age using the world standard population as the reference. Prevalence was estimated for each of the four regions represented—Asia, Europe, South America and Sub-Saharan Africa (Nigeria)—by pooling the results for the sampled areas within each region.

Analyses were based on 15,613 sexually active, nonpregnant women aged 15–74 who had normal cervical smears. Overall, slightly more than 9% of women tested positive for HPV; 7%

had only one type of the virus and 3% had multiple types. By area, the age-standardized prevalence of HPV infection varied from about 1% in Spain to 26% in Nigeria. By region, prevalence varied from 5% in Europe to 26% in Sub-Saharan Africa.

Overall, the majority (67%) of HPV-positive women with normal smears were infected with at least one of the viral types associated with a high risk of progression to cervical cancer; 28% were infected with low-risk types only and 3% with unidentifiable types. Of the 36 viral types studied, the single most common was HPV16, the type most strongly linked to cervical cancer; its prevalence among all women in the population was highest (3.2%) in Sub-Saharan Africa, intermediate (2.9%) in South America and lowest (1.5–1.7%) in Europe and Asia.

The distribution of HPV types varied by region. In three regions—Asia, Europe and South America—the proportion of HPV16 infections among all HPV infections in women with normal smears was twice that of any other high-risk type, but in Sub-Saharan Africa, the proportion of HPV16 equaled that of the high-risk type HPV35. In age-adjusted analyses, HPV-positive women in Europe and South America had significantly higher odds of being infected with HPV16 than did their Sub-Saharan African counterparts (odds ratios, 2.6 and 1.9, respectively); those in Europe had lower odds of infection with other high-risk types (0.6) or with low-risk types (0.4).

The likelihood of infection with five other high-risk types among HPV-positive women also varied significantly across regions. Compared with women in Sub-Saharan Africa, those in Asia were less likely to be infected with HPV45 (odds ratio, 0.3) but more likely to be infected with HPV33 (3.5), and those in Asia and South America were less likely to be infected with HPV35 (0.3).

The researchers speculate that the variations observed in this study both within and across world regions stems from a complex interaction of factors, including characteristics of each viral type, genetic influences on immunity and community levels of health conditions that compromise immune function, such as chronic cervical inflammation, malnutrition and HIV. They recommend, therefore, that "heterogeneity in HPV type distribution among women from different populations should be taken into account when developing screening tests for the virus and predicting the effect of vaccines on the incidence of infection."

—S. London

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Complaints of Abnormal Vaginal Discharge Linked To Poor Mental Health

Among Indian women, poor psychological well-being is a strong risk factor for the complaint of abnormal vaginal discharge, but reproductive tract infection (RTI) is not.¹ In a community-based survey, women who had high scores on a structured instrument for the measurement of common mental disorders (such as depression and anxiety) and those who had numerous medically unexplained physical symptoms (such as tiredness and body aches) had an elevated risk of reporting abnormal vaginal discharge. However, women who had RTIs were not significantly more likely than others to report abnormal discharge.

Researchers surveyed nonpregnant women aged 18–50 years living in Goa, India, between November 2001 and May 2003. Women were randomly selected to participate; those who did not meet inclusion criteria were replaced with women from the same or neighboring households. During interviews, women were asked about socioeconomic factors and about two types of psychosocial factors—those related to gender disadvantage and social support (spousal relationship, autonomy and social integration) and those related to mental health (common mental disorders and unexplained physical symptoms). Common mental disorders, such as depression and anxiety, were assessed with the revised Clinical Interview Schedule (possible range of scores, 0–57), and unexplained physical symptoms were assessed with a scale measuring complaints such as pain and tiredness (possible range of scores, 0–20); for both, higher scores indicate poorer mental health. The women were also asked if they had experienced abnormal vaginal discharge and certain other gynecologic symptoms in the past three months. Vaginal swabs and urine specimens were collected and assayed for diagnosis of five RTIs (chlamydia, gonorrhea, trichomoniasis, bacterial vaginosis and candidiasis).

Analyses were based on 2,494 women. The majority were Hindu (75%), were married (70%) and worked as homemakers (67%).

Eighty-six percent were literate (i.e., able to read and write). Substantial proportions lived in homes that had a toilet (41%) and piped water (44%). However, 33% of women said that their family was in debt, and 32% felt they had trouble making ends meet.

Overall, 15% of the women said that they had recently experienced abnormal vaginal discharge. Sixty percent of these women also reported recently experiencing other gynecologic symptoms—genital itching (reported by 40%), genital sores or blisters (13%), nonmenstrual pain in their lower abdomen (30%) and pain or burning during urination (20%). When women were asked what they believed was causing their abnormal vaginal discharge, the leading cause given was stress and emotional factors, cited by 37% of women. Other perceived causes were excess heat in the body (35%) and infection (31%).

A first multivariate analysis tested associations between socioeconomic factors and a report of abnormal vaginal discharge, using a significance level of $p < 0.1$. In this analysis, the odds of reporting a discharge were higher among women who had experienced hunger in the past three months than among those who had not (odds ratio, 1.8), for women living in homes that did not have a toilet than for other women (1.3), and among women participating in the study as replacements than among randomly selected women (1.4). In contrast, odds were lower among 30–50-year-olds than among 18–24-year-olds (0.4–0.9), and among illiterate women in comparison with literate women (0.6).

A second multivariate analysis tested associations between psychosocial, reproductive and infectious factors, and a report of abnormal vaginal discharge, taking into account the preceding factors and using a significance level of $p < 0.1$.

With respect to gender disadvantage and social support, married women had elevated odds of reporting abnormal discharge if they had been verbally or sexually abused by their husband (odds ratios, 1.4 and 1.9, respectively) or if they were concerned that their husband was having an extramarital relationship (3.5). Women who had medium or low scores for social integration had higher odds than their counterparts with high scores (1.2). Compared with women who had high levels of autonomy, those who had low levels were more likely to report abnormal discharge (1.2).

In terms of mental health factors, women's odds of reporting abnormal discharge increased

with their score for common mental disorders and with the score for unexplained physical symptoms. Finally, with respect to reproductive and infectious factors, odds were higher among women who had ever been pregnant than among those who had never been pregnant (1.3), among users of intrauterine devices relative to nonusers (1.9) and among women in whom any RTI was diagnosed in comparison with others (1.3).

A final, composite multivariate analysis that included the preceding factors showed six variables to be independent risk factors for a complaint of vaginal discharge ($p < 0.05$ for each). Compared with women who had a score of zero for common mental disorders, women who had higher scores were more likely to report abnormal vaginal discharge; the odds ratio was 1.6 among women with a score of 5–8 and 2.2 among women with a score greater than 8. Similarly, compared with women who had a score of less than 2 on the scale for unexplained physical symptoms, women with a score of 4–7 had an odds ratio of 3.0 and women with a score of 8 or greater had an odds ratio of 6.2. In addition, odds were higher among IUD users than among nonusers (1.9), and among women participating as replacement subjects than among those who had been randomly chosen (1.3).

In contrast, illiterate women had lower odds than literate women (0.5), and 30–50-year-olds had lower odds than 18–24-year-olds (0.3–0.6). In this analysis, RTIs were not associated with a report of abnormal vaginal discharge.

Complaints of vaginal discharge, the researchers contend, may be an example of medically unexplained symptoms that are influenced by psychosocial factors and vary with cultural context. They acknowledge that women agreeing to participate differed from those declining in some key respects, which may limit the generalizability of the results. Nonetheless, the researchers assert, the findings suggest that modification of the current approach of syndromic management of vaginal discharge is warranted. “In the absence of diagnostic tests,” they conclude, “we recommend screening of all women with the complaint of vaginal discharge for psychosocial difficulties and providing appropriate care for such difficulties, simultaneously with the syndromic approach for the treatment of RTIs.”

The author of an accompanying commentary² cautions that the observed associations may have other explanations. The stigma associated with vaginal discharge may undermine

psychological well-being, she points out. Or vaginal discharge and psychological distress may have a common cause, such as husbands' extramarital sexual relationships and wives' limited power to negotiate condom use and other protective measures in that situation. “A better understanding of directions and pathways of influence is required... so that women with complaints that are non-infectious in aetiology are offered psychosocial interventions,” she concludes.—S. London

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Home Visits Help Mothers Maintain Breast-Feeding After Leaving the Hospital

Some 70% of Brazilian women giving birth in hospitals with staff trained according to the Baby-Friendly Hospital Initiative (BFHI) exclusively breast-feed their infants in the hospital, but the proportion declines rapidly and sharply thereafter unless the practice is reinforced with home visits.¹ In a randomized study, the aggregated prevalence of exclusive breast-feeding between the 10th day and sixth month after birth was 45% among mothers who were visited at home and 13% among mothers who were not.

Researchers assessed patterns of breast-feeding among women giving birth to healthy singleton infants at public hospitals in Pernambuco, Brazil, during two periods: a pre-intervention period in 1998 and a study period in 2001. Between the two periods, maternity staff at the hospitals were trained with BFHI content to administer a hospital intervention to promote exclusive breast-feeding for six months and continued breast-feeding for at least two years, and home visitors were trained with the same content to conduct postnatal visits to promote and support breast-feeding. In the study, women giving birth in the hospitals between March and August 2001 were randomly assigned to receive either 10 home visits or none. The data thus allowed for evaluation of the hospital intervention alone and of

the hospital intervention combined with home visits.

Social, demographic and environmental characteristics of mothers and infants were recorded at the time of delivery; breast-feeding practices were assessed at eight points between birth and six months, by use of a questionnaire.

Analyses were based on 364 mother-infant pairs in the preintervention cohort and 350 mother-infant pairs in the study cohort. In each cohort, more than half of mothers had a family income below the poverty level. One-third were younger than 20, and the infant was the first for nearly 40%. Most of the mothers (82–94%) had received some antenatal care. Infants with a low birth weight (less than 2,500 g) were excluded from the preintervention cohort and made up only 5% of the study cohort. A substantial proportion of infants (18–29%) were delivered by cesarean section.

The proportion of mothers exclusively breast-feeding their infants in the hospital was significantly higher in the study period than in the preintervention period (70% vs. 21%). However, the proportion in the study cohort who exclusively breast-fed their infants after hospital discharge fell sharply among mothers who did not receive home visits: Only 30% of mothers in this group were exclusively breast-feeding at 10 days, and just 15% were doing so at 30 days. In contrast, roughly 70% of mothers who were visited at home were following this practice at 10 and at 30 days.

The hospital intervention on its own was associated with a significant increase in the average aggregated prevalence of exclusive breast-feeding between days 10 and 180 after birth, from 7% in the preintervention period to 13% in the study period. Among women in the study cohort, however, the average aggregated prevalence was significantly higher among mothers who received home visits than among those who did not (45% vs. 13%).

The proportion of mothers who at least partially breast-fed their infants in the hospital rose from 70% during the preintervention period to 81% during the study period. In the study cohort, the average aggregated prevalence of breast-feeding at least partially between days 10 and 180 was significantly greater among mothers who received home visits than among those who did not (78% vs. 62%); however, breast-feeding prevalence for those who were not visited did not differ from prevalence in the preintervention period (63%).

Breast-feeding patterns in the group not as-

signed to home visits varied by poverty status and maternal education. At 30 days after birth, mothers whose family income was above the poverty level were significantly more likely to be exclusively breast-feeding than their poorer counterparts; similarly, mothers with higher levels of schooling were more likely to be exclusively breast-feeding than their less-educated counterparts. In contrast, in the group receiving home visits, levels of exclusive breast-feeding at this time did not differ by poverty status or education.

During the first six months of life, significantly smaller proportions of infants whose mothers received home visits than of those whose mothers were not visited were given pacifiers or bottles, and were fed water, tea or milk other than breast milk. Substantial proportions of infants whose mothers were not visited were fed these other liquids, often soon after birth; for example, at the age of 10 days, 31% were fed other types of milk, 51% water and 56% tea.

Evidence Supporting the Notion That Bacterial Vaginosis Can Be Transmitted Sexually Continues to Accumulate

Bacterial vaginosis is associated with several high-risk sexual behaviors, such as having a large number of partners, according to findings from a clinic-based Australian study.¹ Although the cause of bacterial vaginosis has not been identified, the findings support the hypothesis that the condition—which has been linked to spontaneous abortion, preterm delivery and increased vulnerability to HIV infection—may be sexually transmitted. In contrast, candidiasis, which has been associated with specific sexual practices, was not linked to high-risk sexual behaviors in this study.

The researchers studied women visiting Melbourne's primary sexual health clinic who had abnormal vaginal discharge or odor; they excluded women who were pregnant, menstruating, postmenopausal or infected with HIV, as well as those who had used lubricant or topical vaginal medication within the previous 72 hours. The researchers made "considerable effort" to offer all women with relevant symptoms the opportunity to take part in the study. Half of women in whom bacterial vaginosis was clinically diagnosed between July 2003 and August 2004 participated. All participants completed questionnaires regarding their symptoms, background characteristics and sexual behavior. They

Improvements in levels of exclusive breast-feeding achieved with the BFHI are largely limited to the hospital, the researchers observe; moreover, this initiative benefits disadvantaged mothers less than advantaged mothers. "There could be a misplaced sense of security among international agencies and governments that the BFHI will sustain improved breast-feeding practices when mothers return home," they contend, especially in countries where mothers leave the hospital soon after delivery and infants are traditionally given other liquids and pacifiers early in life. Noting that this study and others have found that postnatal home visits improve levels of exclusive breast-feeding, the researchers conclude that the challenge now is to find ways of incorporating such support into routine health care.—S. London

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also underwent a speculum examination, during which samples of vaginal secretions were obtained for microscopy and laboratory testing.

Of the 342 women (mean age, 29) who took part in the study, 157 had bacterial vaginosis, and 51 had candidiasis, including nine who had concurrent bacterial vaginosis. In analyses of factors associated with bacterial vaginosis, the researchers classified women as either having or not having vaginosis, regardless of whether the women also had vaginal candidiasis; similarly, in analyses of risk factors for candidiasis, a woman's vaginosis status had no bearing on her candidiasis classification.

The researchers conducted univariate analyses to assess potential associations between 30 behavioral and demographic factors and bacterial vaginosis. In a multivariate analysis incorporating all factors with associations at the univariate level, bacterial vaginosis was associated with having a new sexual partner in the past year (odds ratio, 2.1), more than two male sexual partners in the last year (2.0), vaginal sex more than twice per week (2.3) and a history of trichomoniasis (4.0). Women with bacterial vaginosis also had an increased likelihood of smoking (2.1) and being Australian (1.9). Because about half of participants were using

oral contraceptives, menstrual phase was not included in the main regression model; however, in a model that included days since last menses, women who used oral contraceptives had reduced odds of bacterial vaginosis (0.6).

In a multivariate analysis that compared women who were positive for *Candida* with those who were negative, the list of risk factors was entirely different. Candidiasis was associated with douching (odds ratio, 3.0) and a history of gonorrhea (11.2); only nine participants, however, had had gonorrhea. Women whose last menses had occurred more than 17 days earlier also had increased odds of candidiasis (2.3), although, as in the analysis of bacterial vaginosis, this factor was not included in the main regression model. The risk of candidiasis was reduced among participants who had a history of genital warts (0.3) or a new sexual partner in the past three months (0.5).

The researchers acknowledge that the study's use of clinic attendees, who may have an above-average risk of STIs, may have reduced its abil-

ity to detect relevant associations. In addition, because the study was observational, unmeasured variables may have influenced the results. Nonetheless, they observe, the findings indicate links between bacterial vaginosis and "high-risk sexual behaviors" that are associated with STIs, thus supporting "the concept that bacterial vaginosis may be sexually transmitted." (Candidiasis was also associated with sexual practices, but these behaviors were not of the high-risk variety.) Finally, the researchers point out that despite "considerable evidence" that bacterial vaginosis can be sexually transmitted between women and a substantial likelihood that it develops in similar ways in heterosexual partners, definitive proof that bacterial vaginosis is sexually transmitted will ultimately require identification of a specific causative factor.—*P. Doskoch*

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Women Who Report Abuse During Pregnancy Have An Elevated Risk of Adverse Birth Outcomes

Pregnant women reporting abuse are at increased risk for certain adverse pregnancy outcomes: When compared with women who report no abuse, those reporting verbal abuse are more likely to deliver an infant of low birth weight, and those reporting physical abuse bear infants with a higher neonatal death rate, according to a U.S. observational study conducted from December 2000 to March 2002.¹ But pregnant women who do not wish to discuss domestic violence may be at greater risk for pregnancy complications and adverse infant outcomes than those who consent to such discussions.

Because there are few data to support the common belief that abuse during pregnancy increases the likelihood of complications, researchers at the University of Texas Southwestern Medical Center in Dallas sought to examine the associations between domestic violence and adverse pregnancy outcomes. Women presenting at the labor and delivery unit were asked if they would answer some questions "about physical or emotional trauma." Each woman who agreed was asked, in a face-to-face interview, the four questions that make up the HITS survey, a validated questionnaire for assessing domestic violence:

whether a partner or family member had physically hurt her, insulted her or talked down to her, threatened her with harm, or screamed or cursed at her during this pregnancy. Women answering yes to any of the questions were offered the phone number of a 24-hour domestic violence intervention center. The results of the survey were matched to delivery data using the facility's database containing information on all obstetric and neonatal outcomes. The Wilcoxon rank-sum test, Student t test and chi-square were used for the statistical analyses.

Women were eligible for participation if they were carrying a single fetus of greater than 24 weeks' gestation, but were excluded if they required immediate care or were about to deliver, among other factors. In all, 16,041 women were asked to be interviewed about abuse they had experienced during their pregnancy. The vast majority of women (93%) denied any abuse; 1% reported physical abuse, 5% reported verbal abuse and 1% declined to be interviewed. Most of the participants were Hispanic (64–85%) and young (mean ages of 23.4–24.9 years), and had received prenatal care (96–97%); only 90% of those who declined to be interviewed had received prenatal care. Across all

groups, 29–39% had never given birth before.

There were striking differences in regard to adverse pregnancy outcomes among the four study groups. Infants born to women who reported verbal abuse only had a significantly increased incidence of low birth weight, compared with those born to women in the no-abuse group (8% vs. 5%). Infants born to women in the physical-abuse group were at greater risk for death than were those born to women who had not been abused (2% vs. 0.2%); however, infants born to women in the physical-abuse group did not show an increased incidence of low birth weight.

Women who declined to be interviewed had higher rates of placental abruption and premature births (32 or fewer weeks' gestation) than those in the no-abuse group (2% vs. 0.2% and 5% vs. 1%, respectively). Infants born to women in the declined-interview group required admission to the neonatal intensive care unit at a higher rate than the other groups—7% versus 2%. These infants also had a higher rate of low birth weight (13%, vs. 5% in the no-abuse group). Infants born to women who declined to be interviewed weighed less than those born to women who reported no abuse (mean weight, 3,192 g vs. 3,366 g).

Noting that the women most unwilling to discuss the issue of domestic violence are at the highest risk for adverse pregnancy outcomes, the investigators speculate that these women are being abused and do not speak up for fear of retribution. They suggest that "future efforts to study and prevent domestic violence during pregnancy should consider that the women who remain silent when questioned about the subject may, in fact, be speaking the loudest." Although they provided women who declined to be interviewed with the same intervention offered to the women who reported abuse (the telephone number of a crisis center), the researchers suggest that subsequent studies focus on new interventions to help "those who do not (cannot) respond to questions about their circumstances."—*L. Melhado*

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