

South African Men Who Commit Gender-Based Violence Are More Likely to Have Transactional Sex

In rural South Africa, the strongest predictor of whether a young man has exchanged money or other gifts for sex is whether he has committed intimate partner violence or rape, according to an analysis of data from an HIV prevention trial.¹ Transactional sex is also associated with high socioeconomic status, adverse childhood experiences, having a large number of sexual partners and alcohol use. These associations hold regardless of whether the young man is the provider or the recipient of the gifts, and whether the sex is with his main partner or a casual partner.

The study was a secondary analysis of data from a study of an HIV prevention program that recruited 1,396 young men aged 15–26 from secondary schools in 70 villages in South Africa's Eastern Cape province. At baseline, participants completed structured, face-to-face interviews that included items about demographic variables, media exposure, childhood trauma, alcohol abuse (determined by the World Health Organization's screening questionnaire), resistance to peer pressure, coerced sex with men and attitudes toward gender relations and relationship control. In addition, participants were asked whether they had ever engaged in transactional sex, defined as heterosexual intercourse motivated by the provision (by either partner) of food, clothes, transportation, cosmetics, gifts for family members, school fees, a place to sleep, alcohol, a "fun night out" or money; they were also asked if they had ever been part of a transactional relationship—one in which either partner's involvement had been primarily motivated by expectations of receiving material goods. Finally, participants were asked whether they had ever engaged in emotional, physical or sexual violence against a main girlfriend and whether they had ever coerced a woman who was not their girlfriend into having sex. The researchers calculated descriptive statistics, and identified predictors of transactional sex using logistic regression.

After the exclusion of respondents who had never had sex or who had not provided an adequate sexual history, the final sample

consisted of 1,288 young men. Most were 20 or younger (84%), and nearly all were students (97%) and had a main girlfriend (89%). On average, they had had seven lifetime sex partners; 73% had had at least one casual partner.

Although not the norm, transactional sex was not uncommon: About one in five respondents had had such sex with a casual partner, either as the provider of resources (13%), the recipient (2%) or both (5%). A similar proportion had been part of a transactional relationship, as the provider (7%), recipient (6%) or both (8%).

Gender-based violence was the strongest predictor of transactional sex with a casual partner. Men who had perpetrated both physical and sexual intimate partner violence with a main partner were more likely than those who had done neither to have had transactional sex, either as the provider of material resources (odds ratio, 5.6) or the recipient (2.8). Men who had committed a sexual assault outside of a relationship also had elevated odds of having had transactional sex as the provider (1.6) or recipient (2.2). Emotional abuse against a main partner was associated with receiving resources from a casual partner (2.3), but not with giving them.

In addition, the odds of having provided gifts in exchange for sex were elevated among respondents with an alcohol problem (odds ratio, 1.6) and increased with each additional year of age (odds ratio, 1.1), each additional unit increase in respondents' media exposure scores (1.3) and each five additional lifetime partners (1.3); they declined with each unit increase in respondents' peer pressure resistance score (0.8). The odds of receiving resources from a casual partner in exchange for sex increased with each five additional lifetime partners (1.3), but declined with each unit increase in peer pressure resistance score (0.7).

As it was for transactional sex with a casual partner, intimate partner violence was the strongest predictor of having been in a transactional relationship with a main partner.

Young men were more likely than their peers to have given money or other resources in exchange for a relationship if they had a history of physical violence against a main partner (odds ratio, 1.6), sexual violence against a main partner (2.5) or both (5.0). Similarly, the odds of having received resources in exchange for a relationship were elevated among young men who had committed physical violence (1.5), sexual violence (2.3) or both (4.1).

Other factors associated with having been involved in a transactional relationship as the giver included having an alcohol problem (odds ratio, 1.9) and having ever been coerced into sex by another man (2.6); furthermore, the odds increased with each five additional lifetime sex partners (1.3) and with each unit increase in socioeconomic status score (1.2). The odds were reduced, however, among men who had 10 or more years of education (odds ratio, 0.6) or who were in the quartile of respondents with the most equitable gender attitude and relationship control scores (0.6). Factors associated with having been involved in a transactional relationship as the recipient included having ever earned money (1.7) and having an alcohol problem (1.8); again, the odds were reduced among men with the most equitable gender attitude and relationship control scores (0.4).

The fact that perpetration of both physical and sexual intimate partner violence was consistently the strongest predictor of transactional sex—regardless of whether the man provided the gifts or received them—suggest that "transactional sex should be viewed as part of a cluster of closely related violent and controlling practices," the researchers note. Although it may seem counterintuitive that receiving resources would represent a form of controlling behavior, these transactions may represent "financial abuse or exploitation," such that men who expect to receive resources in exchange for sex or companionship "become violent if thwarted," according to the researchers. Because the study sample consisted of young rural men who had vol-

unteered for an HIV prevention program, the findings may not be applicable to the general population. Nonetheless, the results suggest that “interventions which seek to explicitly transform ideas of masculinity that privilege heterosexual success with and control over women will be more effective than those that address only individual risk behavior in reducing incidence of transactional sex, HIV risk and gender-based violence,” the authors conclude.—*P. Doskoch*

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HIV May Not Increase Risk Of Stillbirth Among Women In Sub-Saharan Africa

In Sub-Saharan Africa, a pregnant woman’s HIV status is not directly linked to the likelihood that her fetus will be stillborn, data from a randomized trial suggest.¹ Instead, inflammation of the amniotic sac during pregnancy, hemorrhage during labor and delivery outside a hospital or clinic are the factors most strongly associated with stillbirth.

The study was a secondary analysis of data from a randomized, placebo-controlled trial that examined whether antibiotics would help prevent mother-to-child HIV transmission associated with chorioamnionitis, a bacterial infection of the amniotic sac. Women were eligible for the trial, which was conducted in 2001–2003 at four clinics in Malawi, Tanzania and Zambia, if they were between 20 and 24 weeks’ gestation, had a documented HIV infection, had not recently received antibiotics and had no serious conditions that might complicate pregnancy outcome. Although the goal of the trial was to prevent perinatal HIV transmission, a small proportion of HIV-negative women were recruited at all but one site to help reduce the stigma associated with the trial.

During enrollment, women’s demographic characteristics and obstetric and maternal health histories were collected via questionnaire, health care providers tested the women for STIs and other gynecological conditions, and a seven-day course of antibiotics (or placebo) was initiated. Check-ups were per-

formed at 28 and 36 weeks’ gestation. When the women went into labor, they received another course of antibiotics or placebo and were examined for signs of chorioamnionitis and other complications. In addition, HIV-positive participants received a dose of an antiretroviral drug prior to labor.

Among the 2,434 participants who gave birth to singleton infants, 80 experienced a fetal death, yielding a rate of 33 stillbirths per 1,000 deliveries. Nearly half (44%) of stillborn infants died before labor, the remainder (56%) during labor. Chorioamnionitis was present in one in three instances of stillbirth.

In univariate analyses, women who were formally employed had an elevated risk of stillbirth (odds ratio, 2.3), as did women who had had a previous stillbirth (2.3). Other factors associated with stillbirth included birth outside a health facility (3.7), hemorrhage during labor (14.4) and development of chorioamnionitis (20.9). Predictably, the risk of stillbirth increased as gestational age at birth decreased: Infants born before 34 weeks’ gestation were nearly 23 times as likely to be stillborn as those delivered at 37 weeks or later.

HIV infection was not associated with increased risk of stillbirth in either univariate or multivariate analyses. In a separate univariate analysis of HIV-positive participants, women whose CD4 cell counts were 200 or fewer per microliter (indicating severe immune system impairment) had an increased likelihood of stillbirth; however, this association was not significant in the multivariate analysis.

The lack of an association between HIV and stillbirth contrasts with findings from past studies. The authors suggest that it is not HIV infection itself, but rather HIV-related immunosuppression, that “might account for the adverse pregnancy outcomes associated with the disease.” If so, then the relatively healthy status of HIV-positive women in the current study may explain the similarity in outcomes between infected and uninfected women.

The researchers point out that several “simple and effective interventions to improve obstetric care in resource-limited settings” could reduce stillbirth. These measures include fetal monitoring and routine administration of magnesium sulfate. In addition, the fact that disproportionate numbers of deliveries occurring outside a health facility resulted in stillbirth indicates that “increasing the number of trained birth attendants and encourag-

ing institutional delivery could also reduce high stillbirth rates.”—*H. Ball*

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Sub-Saharan Africa Is Sole Exception to the Global Decline in Maternal Deaths

Maternal mortality decreased worldwide during a recent 15-year period, but some regions and countries did not experience any meaningful decline, according to a recent analysis.¹ For countries with relevant data, the maternal mortality ratio fell by roughly 3% per year between 1990 and 2005; however, the ratio remained stable in Sub-Saharan Africa, in low-income countries and in countries where the ratio was higher to begin with. In 2005, the estimated worldwide maternal mortality ratio was 402 deaths per 100,000 live births, with 95% of these deaths occurring in Sub-Saharan Africa and Asia.

To address shortcomings of previous estimates of maternal mortality and to develop new estimates that allow comparisons across countries and over time, researchers assessed maternal mortality in 171 countries during 2005 using only nationally representative sources of data. The maternal mortality ratio (the number of women who died from pregnancy-related causes during pregnancy or the postpartum period, divided by the number of live births) was estimated using methods tailored to the type of data source. Trends in the ratio between 1990 and 2005 were assessed by two methods: a time-series regression analysis that used data from only the 125 countries with empirical data and used countries as the unit of analysis; and a reestimation analysis that used data from all 171 countries and weighted the changes by the number of births during this time period. In addition to calculating ratios by country, the researchers analyzed the data by region, national income (using World Bank classifications), type of data source and initial maternal mortality ratio.

The type and quality of data sources on maternal mortality varied widely. Fifty-nine countries (accounting for 13% of births worldwide in 2005) had satisfactory civil registration data; six (1% of births) had complete regis-

tration of deaths but an excessive proportion of deaths attributed to ill-defined causes; 28 (16% of births) had data from sisterhood surveys, which collect information regarding siblings and tend to underestimate female mortality; four (5% of births) had data from surveys on mortality of reproductive-age women; two (32% of births) had data from civil registration systems implemented in a representative sample of geographic areas; five (2% of births) had data from census-based estimates; six (5% of births) had other empirical data, generally of unknown quality; and 61 (25% of births) lacked appropriate empirical data, necessitating the use of models.

The researchers estimated that 535,900 maternal deaths occurred worldwide during 2005, which translates to a maternal mortality ratio of 402 maternal deaths per 100,000 live births. The vast majority of the maternal deaths took place in Sub-Saharan Africa (50%) and Asia (45%). Fully 48% of the deaths occurred in only five countries: India, Nigeria, the Democratic Republic of Congo, Afghanistan and Ethiopia.

Across regions, the maternal mortality ratio differed sharply; it was lowest in developed countries (nine maternal deaths per 100,000 live births) and highest in Sub-Saharan Africa (905 per 100,000). Across countries, the range was even greater; Ireland had the lowest ratio (one per 100,000), while Sierra Leone had the highest (2,100 per 100,000).

In the time-series analysis of temporal trends, the worldwide maternal mortality ratio in countries with empirical data fell by about 3% per year between 1990 and 2005. Lower-middle-income countries experienced a reduction of 4% per year and upper-middle-income countries a reduction of 5% per year; in contrast, the ratio remained essentially stable in low-income and high-income countries. Findings also differed by type of data source: Countries with sisterhood surveys did not experience a decrease in maternal mortality ratio, whereas the ratio fell by 2% per year among countries with vital registration systems, by 7% per year among countries with reproductive-age mortality surveys and by 4% per year among those with other data sources. Finally, the researchers found that the maternal mortality ratio remained essentially unchanged among countries where the initial ratio was at least 200 maternal deaths per 100,000 live births, but declined among countries with lower initial ratios.

In the reestimation analysis of temporal

trends, the worldwide maternal mortality ratio fell by only 5% between 1990 and 2005, corresponding to an average annual reduction of about 0.4%. (The annual change is smaller in this analysis than in the time-series analysis because of differences in the countries included and in the weighting of data.) The 15-year decline was largest in northern Africa (36%) and smallest in Sub-Saharan Africa (2%). In addition, the absolute number of maternal deaths fell by 7% worldwide during this time period and by 15–35% in every region but Sub-Saharan Africa, where the number actually increased by 28%.

The researchers assert that progress in reducing maternal mortality worldwide has been limited, and note that the “huge” differences among countries in the maternal mortality ratio—differences far exceeding those seen with other frequently used health indicators—suggest that disparities exist in the implementation of effective interventions for reducing maternal mortality. Noting that accurate measurement will be essential for assessing progress in reducing maternal deaths, they recommend international investment in efforts to improve the reporting and collection of data on maternal outcomes. To achieve Millennium Development Goal 5—reducing the global maternal mortality ratio to 25% of its 1990 level by 2015—will require “a huge and urgent emphasis on improved pregnancy and delivery care throughout the developing world,” they conclude.—*S. London*

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Demonstrating How to Use Condoms Improves Youths' Knowledge About Them

Adolescents aged 15–19 who have seen a demonstration about using condoms are up to five times as likely as their peers who have not seen such a demonstration to know key facts about how to use a condom correctly, according to nationally representative surveys of youth in four countries in Sub-Saharan Africa.¹ In addition, male adolescents who are older, have had sex education, have at least a secondary education, are middle class or listen to the radio regularly have elevated levels of condom knowledge in at least two of the

four countries. However, levels of consistent condom use itself remain far below the ideal: Among sexually active males aged 15–19 who had had sex at least twice in the past three months, only 20–47% had used a condom consistently, and 32–50% had not used condoms at all.

The data come from the 2004 National Survey of Adolescents, in which more than 19,000 youth in Burkina Faso, Ghana, Malawi and Uganda participated in extensive face-to-face interviews. Respondents were selected via a two-stage stratified sample design: After private households were randomly selected, all eligible 12–19-year-olds in each household were invited to participate. The overall response rates were 87–95%.

Respondents were asked about background characteristics, reproductive experiences, pregnancy knowledge, exposure to sex education, contraceptive knowledge and use, sexual activity, substance use and other topics. The measures of sexual activity and contraceptive (including condom) use were based on questions used in Demographic and Health Surveys. Knowledge of condom use was based on adolescents' responses (agree, disagree or don't know) to three statements: “A condom should always be put on before sexual intercourse starts,” “A condom should be put on the penis only if the penis is fully erect or stiff” and “A condom can be used more than once.” Young men were classified as consistent condom users if they had had vaginal intercourse at least twice in the past three months and had used a condom every time. In addition to calculating descriptive data on sexual activity and on knowledge and use of condoms, the researchers used ordered logistic regression models to identify factors associated with higher levels of condom knowledge and with consistent condom use. In the latter analysis, data from Burkina Faso, Malawi and Uganda were pooled (Ghana was excluded because very few young men had had sex at least twice in the past three months); in the remaining analyses, results were calculated by country.

Because relatively few younger adolescents had ever had sex, only 15–19-year-olds (N=10,690) were included in the analyses. Two-thirds of these respondents were aged 15–17, and most lived in rural areas. In Ghana, Malawi and Uganda, at least half of respondents were attending school; in Burkina Faso, however, slightly more than half had never attended school. Exposure to televi-

sion, radio and print media varied by country but was generally limited: Only 9–30% of females and 12–39% of males reported regularly using all three types of media.

The proportion of 15–19-year-olds who had ever had sex ranged from 29% to 48% among females and from 15% to 60% among males. Current sexual activity was somewhat lower, as 21–39% of young women and 10–38% of young men had had sex in the past year. Lifetime and current sexual activity were lower in Ghana than elsewhere; Malawi was the only country in which levels of sexual activity were higher among males than among females.

Although most 15–19-year-olds (83–95% of females and 90–98% of males) were aware of condoms, at best half (32–48% of females and 46–53% of males) had ever used one. Most responses to the three statements about condoms were correct, as 75–81% of females and 84–89% of males knew that condoms should be put on before intercourse starts, 52–72% of females and 76–91% of males knew that a condom should be put on only if the penis is stiff or erect, and 50–74% of females and 68–84% of males knew that condoms should be used only once. However, just 26–50% of females and 50–68% of males responded correctly to all three statements.

In multivariate analyses, the factors associated with knowledge of correct condom use differed by country, and no factor was associated with such knowledge in all four of the countries. Having ever seen a condom demonstration was strongly associated with condom knowledge among both men and women in Burkina Faso, Ghana and Uganda (odds ratios, 2.0–4.6) but not in Malawi. Among men, five factors were positively associated with condom knowledge in two of the four countries: being aged 18–19, having at least a secondary education, listening to the radio regularly, having had sex education and being middle class (rather than poor). Among women, 18–19-year-olds in three countries had higher levels of condom knowledge than younger adolescents, and in two countries urban residents and those who had attended school were more knowledgeable than their rural and unschooled peers.

Most sexually active young men did not use condoms consistently. Among 15–19-year-old males who had had sex at least twice in the previous three months, the proportion who had used condoms every time ranged from 20% in Malawi to 47% in Ghana; up to

half (32–50%) had not used a condom at all in the past three months. In multivariate analyses, the strongest predictor of consistent condom use was having a partner who was 0–4 years older (odds ratio, 2.5); the likelihood of condom use was also elevated for urban residents (2.2), those who had at least a secondary education (1.9), those who lived with their biological mother but not their biological father (1.7) and those who regularly listened to the radio (1.8) or read newspapers and magazines (1.8).

Although the results indicate that adolescents in the four countries generally lack detailed knowledge about condoms and do not use them consistently, they also indicate that youth who receive sex education—especially those who see a condom demonstration—are more likely than their peers to know key details about condom use. Thus, the authors recommend that “age-appropriate sex education” be introduced in schools “so that young people can receive relevant instructions before they are sexually active.” In addition, they suggest that “programs that aim at promoting condom use...include condom use demonstrations as a way of promoting correct use of the method.”—*P. Doskoch*

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Maternal Mortality Has Declined Substantially In Rural Bangladesh

Maternal mortality fell by almost two-thirds in Matlab, Bangladesh, between 1976 and 2005, primarily because of improved emergency obstetric care and a decline in abortion-related mortality, according to a 30-year cohort study.¹ Although maternal mortality was stable during the first half of the study period, it declined markedly after 1989. Pregnant women were less likely to die if they lived in an area where health services were provided by an international research center or if they had five or more years of education; they were more likely to die if they were aged 30 or older or were pregnant for the first time.

In the study, researchers assessed trends in maternal mortality in two adjacent areas of rural Matlab: one served by the government,

the other by the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), which offered more extensive reproductive health services (in particular, better access to skilled birth attendants) than government facilities. Between 1976 and 2005, all births and deaths in Matlab were recorded and investigated through monthly household interviews, autopsy questionnaires and follow-up of deaths reported to a surveillance system. Maternal deaths (those that occurred during or within 90 days of pregnancy, excluding deaths due to injury) among women aged 15–49 were classified as related to obstetric causes (hemorrhage, hypertension, obstructed labor or infection), to abortion (spontaneous or induced) or to other causes. Multivariate analyses were conducted to identify possible determinants of maternal mortality, including service area (government or ICDDR,B), household assets, maternal education, maternal religion, maternal age, parity and time period (1976–1989 or 1990–2005); the researchers used 1989 as the cut-off for the last variable because that was the year in which skilled birth attendants became widely available in the ICDDR,B area. In some analyses, data from five-year periods were grouped together.

During the 30 years, 215,779 pregnancies and 769 maternal deaths were recorded. Between 1976–1980 and 2001–2005, the maternal mortality rate declined by 68% in the ICDDR,B area (from 412 to 131 deaths per 100,000 pregnancies) and by 54% in the government area (from 451 to 206 deaths per 100,000 pregnancies). In this period, there were marked reductions in the proportions of pregnant women who were completely uneducated (from 71% to 28%), who had had at least five prior pregnancies (from 26% to 10%) and who were aged 19 or younger (from 23% to 11%).

Multivariate analyses revealed that the risk of maternal mortality remained stable during the first half of the study period but fell by 4% per year beginning in 1990 (odds ratio, 0.96 for each additional year). For the study period as a whole, the odds of maternal mortality were 20% lower among women who resided in the ICDDR,B service area than among women who lived in areas with government facilities (0.8), and they were 40–60% lower among women with five to seven (0.6) or eight or more (0.4) years of education, compared with women with no formal education. In contrast, women aged 30–39 (1.8) or 40 or older (3.0)

had a higher likelihood of death than their 20–29-year-old counterparts, and women who were pregnant for the first time had greater odds of maternal mortality than did women in their second or third pregnancy (2.4).

About three-fifths of maternal deaths were due to obstetric causes, primarily hemorrhage or hypertension. In multivariate analyses, the risk of obstetric death remained stable during both 1976–1989 and 1990–2005. Otherwise, the factors associated with obstetric death closely mirrored those of maternal mortality: The odds of obstetric death were reduced among women who resided in the ICDDR,B service area (odds ratio, 0.8) and those with five or more years of schooling (0.4–0.6), and elevated among women aged 30 or older (1.6–2.2) and women who were experiencing their first pregnancy (2.4).

About a fifth of maternal deaths were related to spontaneous or induced abortion, in most cases the latter. Abortion-related mortality was stable during 1976–1989 but fell by 8% annually in 1990–2005 (odds ratio, 0.92 per year). The odds of abortion-related death were markedly reduced among women with five or more years of education (0.1–0.4), and were elevated among women who were aged 30 or older (3.3–7.2) or were pregnant for the first time (3.8). Abortion-related mortality did not differ between areas.

The remaining one-fifth of maternal deaths were related to causes other than obstetric

complications and abortion. In adjusted analyses, the rate of these deaths increased by 5% per year during 1976–1989 (odds ratio, 1.05) but decreased by 8% per year during 1990–2005 (0.92). The odds did not differ between the ICDDR,B and government areas.

Given that maternal mortality declined by two-thirds during the study period, the researchers believe that the fifth Millennium Development Goal—a 75% reduction in maternal mortality between 1990 and 2015—is within reach for Bangladesh. Because the use of skilled birth attendants remains low (even in the ICDDR,B service area, only half of births in 2005 involved a trained attendant), they believe that the decline in maternal mortality can be attributed primarily to policies that have increased access to family planning services, leading to fewer abortions; to the availability of safe, early abortions by manual vacuum aspiration (“menstrual regulation”); and to improvements in emergency obstetric care, particularly cesarean deliveries. However, “additional policies that bring about expansion of female education, better financial access for the poor, and poverty reduction are essential to sustain the successes achieved to date,” they add.—*S. London*

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