Gender, Relative Poverty, and Orphanhood as Factors for Youth HIV Risk Behaviors in South Africa

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Abstract: Recent evidence suggests that the burden of new HIV infections in developing countries is concentrated among young people and females. Even with knowledge of how to protect oneself from infection, such information may not always be usable in daily situations of economic and social disadvantage that characterize the lives of many young people and women in poor countries.

Using household survey data collected in 2001, this study investigates how relative socioeconomic status influences the sexual behaviors of young women and men aged 14–24 years in KwaZulu-Natal Province, South Africa—an environment characterized by high HIV prevalence and high rates of poverty and inequality. Relative economic disadvantage is found to significantly increase the likelihood of a variety of unsafe sexual behaviors and experiences. Low relative socioeconomic status increases female odds of exchanged and forced sex and multiple sexual partners. It reduces female age at sexual debut and condom use at last sex, and male and female chances of discussing condom use or ways to avoid HIV and pregnancy with recent sexual partners. Low socioeconomic status has larger and more significant effects on female than on male unsafe sexual behaviors; it also raises female risk of early pregnancy. Poorer young people, especially females, also have significantly lower access to media sources for family planning information.

Controlling for wealth and other factors, orphanhood confers added risk for unsafe sexual behaviors: female and male orphans debut earlier sexually and are less likely to discuss condom use and ways to avoid pregnancy with recent sexual partners. Among the paternally orphaned, females have older sexual partners and are at higher risk for early pregnancy, while males have lower odds of secondary abstinence.

Without sufficient attention in the design and placement of HIV prevention programs to the economic and social conditions in which individuals live—conditions that can make them more or less vulnerable to experiences and behaviors that may lead to infection— the potential effectiveness of the global response to HIV/AIDS is sacrificed.

INTRODUCTION

Of the estimated 40 million people living with HIV/AIDS worldwide, nearly one-third are between the ages of 15 and 24 years (UNICEF-UNAIDS-WHO 2002). This group accounted for two-thirds of newly infected individuals in developing countries in 2003 (UNAIDS 2004). Of the estimated 22 million people who have died of AIDS (UNAIDS 1999), half became infected as 15–24-year-olds (UNAIDS 1999). Existing HIV prevalence combined with disproportionately young populations results in a concentration of new infections among young people[1] (Henry J. Kaiser Family Foundation 2002). Most (77 percent) young people living with HIV/AIDS reside in sub-Saharan Africa (UNAIDS 2003). Twenty percent of this region's population is between 15 and 24 years of age, compared with 13 percent of the population of high-income countries (UNICEF-UNAIDS-WHO 2002).

Social and economic trends deemed to contribute to HIV risk for young people in sub-Saharan Africa include the lengthening period between childhood and adulthood, the "globalization" of youth culture, and worsening economic conditions. Shifting cultural values, poor economic prospects, and high prevalence of HIV/AIDS along with low expectations of tangible changes in the near future may bring social disillusionment and encourage some young people, particularly those who are already socially or economically marginalized, to engage in unsafe sexual and health practices (Collins and Rau 2000). In a national survey in South Africa in 1999, only 27 percent of 18–35-year-olds said they had gone as far in their education as they had wished (Strategy & Tactics 1999, quoted in Everatt 2000). While South African educational attainment is high by sub-Saharan African standards—88 percent of 20–24-year-olds in 1998 had completed primary school (Lloyd and Hewett 2003)—grade repetition is a very common occurrence. Despite high rates of secondary school attendance, many young people have trouble completing this level. In 1999 only 36 percent of 20–24-year-olds had received their matriculation certificate (Statistics South Africa 2001). Consumption of "brand labels" and stylish lifestyles are highly sought after by urban young people in the "new South Africa." At the same time, however, 60 percent of Africans (who comprise 80 percent of the nation's population) fell below the national poverty line (UNDP South Africa 2000), and the official youth and adult unemployment rates stood at 42 and 23 percent, respectively, in late 1999 (Statistics South Africa 2001).[2] The gap between aspirations and reality makes many young people keenly aware of their disadvantaged status.

HIV prevalence among 15–24-year-olds is estimated to be 1.1 percent globally, 1.3 percent for developing countries, 6.7 percent in sub-Saharan Africa, 9.5 percent in eastern and southern Africa, and 18.2 percent in South Africa (UNICEF-UNAIDS-WHO 2002).[3] Although South Africa had fewer than 1 percent of the world's 15–24-year-olds in 2001, it accounted for approximately 14 percent of all global HIV infections in this age group (UNICEF-UNAIDS-WHO 2002).[4] Gender is a key aspect of HIV risk. Young women are at particularly high risk for becoming infected. Among 15–24-year-olds in developing countries living with HIV/AIDS, 64 percent are female (UNAIDS 2004). In sub-Saharan Africa, young women are two to three times as likely to be infected as young men, with up to six times the infection rate of their male peers in certain sub-regions. In

parts of eastern and southern Africa, more than one-third of teenage girls are infected (UNAIDS 2003). In South Africa there are five infected 15–24-year-old females for every two infected males the same age (UNICEF-UNAIDS-WHO 2002). Young women's higher relative risk of HIV infection in developing countries is due to several factors associated with sexual differences and gender inequality: higher physiological susceptibility of females to HIV infection during heterosexual intercourse (Nicolosi et al. 1994; Stanton 2002; UNAIDS 2004); sexual violence against women (Varga 1997; Wood et al. 1998; Human Rights Watch 2001); norms of appropriate sexual behavior that lead young men to downplay the threat of HIV/AIDS and engage in sexual conquests that weaken the ability of young women to negotiate safe sex (Baylies 2000; UNAIDS/Panos 2001; Varga 1997); a high value placed on female virginity at marriage, with girls attempting to preserve the image of their virginity by engaging in unsafe sexual and reproductive health practices such as anal sex and avoidance of reproductive health services (Rao Gupta 2000; Health Systems Trust 2001); social norms encouraging fertility among young women, which may increase the frequency of unprotected sexual encounters (Rutenberg et al. 2002); age differences between sexual partners (MacPhail et al. 2002; Gregson et al. 2002; Luke and Kurz 2002); and females' economic dependence on males (e.g., Gregson et al. 2002; UNAIDS 2004).

Given that the burden of new HIV infections in developing countries is concentrated among the young and females, there is emerging awareness that even with knowledge of how to protect oneself from infection, such information may not always be usable in daily situations of economic and social disadvantage that characterize the lives of many young people, especially females (UNAIDS 2004). HIV/AIDS is still largely considered a medical and public health problem, with most interventions emphasizing individual responsibility to prevent infection (Campbell 2003; Barnett and Whiteside 2002). Without sufficient recognition of the economic and social conditions in which individuals live—conditions that can make them more or less vulnerable to infection—such an approach risks sacrificing effectiveness of the global response at best, and blaming vulnerable groups for their infections at worst (Farmer 1996; Collins and Rau 2000; Barnett and Whiteside 2002).

Understanding how factors such as one's age, gender, and socioeconomic status confer vulnerability to unsafe sexual behaviors among young people is important for designing appropriate health, social, and economic development policies and programs. The issue is especially pertinent in South Africa because of its high HIV prevalence rate that exists in conjunction with high levels of poverty and inequality. A decade after apartheid, economic deprivation continues to dominate policy discussions in South Africa. Although ranked as a middle-income country, South Africa has the eighth most unequal income distribution in the world (UNDP 2003). Carter and May (2001) report growing numbers living in poverty and increasing inequality since the end of apartheid, due largely to drops in the real incomes of formerly near-poor African households. The current study explores how relative social and economic status influences the sexual behaviors and experiences of young women and men aged 14-24 in KwaZulu-Natal Province, South Africa. A rich data set is used to examine a variety of outcomes in a

multivariate and multi-level framework. Gender-disaggregated regressions are used, controlling for age, ethnicity, household size, highest level of adult education in the household, parental residence and survival, urban versus rural residence, and magisterial district. The next section explores the relationships between health and wealth; a conceptual framework is then put forward, followed by a description of the data and the empirical methodology. The study results and their significance and implications for policy are then discussed.

HEALTH AND WEALTH

A number of hypotheses have been advanced to explain the high rates of HIV infection in South Africa. With the end of apartheid in 1994 the country had developed a multi-sectoral HIV/AIDS plan based on international and local expertise. However, despite this plan and sufficient time to enact it, a large economy to draw upon, a reasonably large pool of skilled health and education workers, and a sophisticated media, overall antenatal HIV prevalence increased from 7.6 percent to 26.5 percent in the next eight years. A variety of factors are blamed for this increase, including the lack of a sense of urgency on the part of the government early on; public suspicion, where the majority of Africans saw AIDS awareness campaigns as an attempt of the apartheid state to curtail African population growth (Bledsoe 1991; Simbayi 1999); a system of migrant labor that separates individuals from their families—a main feature of apartheid planning that remains prominent to this day (Van Donk 2002); a public sector that continues to undergo restructuring at multiple levels (in terms of transformation from its apartheid past, as well as devolution of responsibilities from national and provincial down to local levels of government); a high turnover of staff within the health sector and a concomitant loss of expertise (Health Systems Trust 2002); and high levels of poverty and inequality (Heywood 1998).

The positive relationship between health and wealth at the country level and over time with improving living conditions is described by a number of authors (see Deaton 2003 for a review). Within countries at any point in time, the positive connection between wealth and various health outcomes is also well-documented. HIV/AIDS is obviously not strictly a "disease of poverty" since it affects people across the socioeconomic spectrum. Within Africa, there is a wide variation in rates across countries that does not track country per capita income levels. HIV prevalence correlates more closely with human development index (HDI) rankings than with per capita income levels (Decosas 1996, quoted in Collins and Rau 2000). It must be remembered, however, that one of the four elements of the HDI is life expectancy, which AIDS reduces in the absence of wide availability of antiretroviral treatment. Another aspect of societies worth examining in relation to HIV prevalence rates is income inequality. Inspection of the Gini index (from UNDP 2003), a measure of inequality over the distribution of income within a population, indicates that countries with high HIV prevalence also have very high levels of inequality. The seven countries in the world with adult HIV prevalence rates of 20 percent or higher (all located in southern and eastern Africa) have a very high Gini index: their average is 59.9, ranging from 52.6 in

Zambia to 70.7 in Namibia. Most countries with a medium HDI ranking similar to South Africa's have a much lower Gini index: generally between 35 and 45. The World Bank (1997) has shown similar global relationships between HIV prevalence and income inequality in the early 1990s.

Evidence from within countries with high income inequality and high HIV prevalence shows that new HIV infections disproportionately affect poor people, unskilled workers, and those lacking literacy skills—especially young women in each of these categories (UNDP 2002). The social epidemiology of AIDS appears to be changing over time. In the early stage of the pandemic, the better-off and better-educated were more vulnerable, mainly because of greater mobility and higher disposable income to pay for casual sex (Panos 1992; World Bank 1997). However, once information and knowledge about the disease became available, these groups began to change their behavior and protect themselves against HIV, while the poor and less educated became relatively more vulnerable (UNDP 2002). In the most affected countries, the pattern for people with higher income and education follows an inverted U-shape over time as the epidemic progresses from the nascent stage to the concentrated phase and subsequently to the generalized stage (the last characterizes South Africa). The pattern for those with lower resources follows a more gradual curve during the nascent and concentrated stages, but grows exponentially in the generalized stage (UNDP 2002). Risk behavior among people who are not poor is largely a matter of power and choice, whereas a lack of livelihood alternatives may compel the poor to engage in behaviors that put them at risk (Baylies 2000; IFAD 2001).

The ways in which social and economic disadvantage drives the HIV epidemic are often obscured. As aptly expressed by Simmons et al. (1996), "the term 'risk behavior,' unless carefully contextualized, exaggerates individual agency and leaves unacknowledged and unexplained the ways in which large-scale social and economic factors structure risk for individuals and groups, particularly those who are systematically marginalized from power and from access to the goods, services, and opportunities which power ensures." Those not at the center of such power structures are often the young, women, and the relatively poor. Potential vulnerability of such groups to HIV stems from a number of factors. One is their disadvantaged bargaining positions within individual relationships, households, workplaces, and communities (see International Food Policy Research Institute 2003). Another is the fact that they are more likely to adopt livelihood strategies that are conducive to the spread of HIV, such as migrating to find work and exchanging sex for money, goods, or favors (Collins and Rau 2000; IFAD 2001). They may also be less able to access or afford measures that allow them to practice safe sex. Research such as that of Wilkinson (1996, 2000) and Kennedy et al. (1998) claims that low relative socioeconomic status contributes to ill health through factors such as unequal access to education, health care, and employment opportunities, and the psychosocial stress of being disadvantaged. Marmot et al. (1997) in the original Whitehall studies demonstrate that low relative rank and subsequent lack of control within the daily work setting account for the link between poor health and low occupational status among British civil servants.

Relative disadvantage can manifest itself in a number of ways, including lack of access to jobs, property, health and education opportunities, and decisionmaking power more broadly. Although an admittedly blunt measure, unemployment statistics begin to reflect the reality of disadvantaged groups in South Africa. In 1999, the official unemployment rate stood at 23 percent nationally, 25 percent for African males, 35 percent for African females, and 42 percent for 15–24-year-olds (Statistics South Africa 2001). Among those who had jobs, approximately 40 percent of women, versus only 20 percent of men, worked in unskilled low-paying positions (Statistics South Africa 2002). Being young, female, and African often entails being on the low end of the socioeconomic continuum in South Africa. Describing the situation, Von Donk (2002) states: "At the national and local level, the uneven distribution of HIV/AIDS is closely associated with social divisions based on factors such as age, class, gender, race, and ethnicity. Collectively, these factors create 'interlocking structures of inequality' (Baylies 2000), which enhance vulnerability to HIV infection and the impacts of AIDS."

Despite knowledge that health behaviors may be affected by age, gender, and socioeconomic status, few quantitative studies of HIV risk disaggregate according to these factors. One problem is undoubtedly data availability. A sizable number of studies focusing on individual sexual behaviors or HIV sero-status do not include accompanying measures of individual or household socioeconomic status; in other cases, the socioeconomic status measure raises questions about the direction of causality between it and the outcome being studied. Another potential difficulty is the manner in which socioeconomic status variables are operationalized in the analysis: frequently they are entered as either continuous or dichotomous measures, instead of as more flexible functional forms that would allow us to detect differences in health and health behaviors associated with them.

A recent study that has attempted to address these issues (Hargreaves et al. 2002) examines the relationships among socioeconomic status, risk factors for HIV infection, and HIV status in an urban population with high HIV prevalence in Kenya using 1996 data. The authors disaggregate the analysis by age, gender, and a three-category socioeconomic status measure and find that risk of infection indeed differs along these three dimensions and that new infections may be occurring fastest among young women of lowest socioeconomic status. Further, young women in the lowest socioeconomic status group had a significantly younger median age at first intercourse, higher rates of having ever practiced dry sex, and higher occurrence of HSV-2—all risk factors for HIV.

Two recent national, population-based studies of HIV sero-status and sexual behaviors have been conducted in South Africa. The first, the Mandela Foundation-HSRC (Human Sciences Research Council) study in 2002, focused on South Africans of all ages. HIV prevalence rates presented in the report for some 2,100 individuals aged 15–24 years were 12.0 percent for females and 6.1 percent for males. Young people living in poor informal urban settlements had more than double the prevalence of those residing in wealthier urban areas or in rural tribal or farm areas (20.2 versus 9.3, 7.0, and 8.6 percent, respectively). While the report did not present HIV prevalence by gender and neighborhood type for young people, if one assumes the national gender ratio applies

within each neighborhood type one can surmise that in poor informal urban settlements, HIV prevalence among young women would be approximately 27 percent versus 13 percent among their same-age male peers. For behavioral outcomes, the report describes the percentage of young people aged 15 to 24 years who have ever had sex, first by gender and then by neighborhood type. There were no significant differences by gender, but by neighborhood type 74.0 percent of young people in urban informal settlements versus 53.2 percent of young people in urban formal areas and 58.3 percent of rural youth (farm and tribal combined) reported having had sex.

The second study, by Pettifor et al. (2004), focused exclusively on nearly 12,000 young South Africans aged 15–24 years. It also found that young people in urban informal neighborhoods have HIV prevalence rates much higher than those in urban formal, rural tribal, or rural farm areas: 17.4 versus 9.8, 8.7, and 13.5 percent. In this study, however, young women were more than three times as likely as young men to be HIV positive: 15.5 versus 4.8 percent. HIV prevalence is not reported by gender and neighborhood type, but if one assumes the national gender ratio applies within each neighborhood type, rates within poor informal urban settlements would equal 27 percent among young women versus 8 percent among young men. Percentages having had any sexual experience are presented for young people aged 15–19, 20–24, and 15–24 years by gender, and for 15–24-year-olds by type of neighborhood. As in the first study, no differences were found by gender within any of the age groups. By neighborhood type, the percentages who had ever had sex were 75.0 for urban informal, 64.0 for urban formal, 69.0 rural tribal, and 76.0 rural farm areas.

Other research on the sexual behavior of young people in South Africa (much of it reviewed by Eaton, Flisher, and Aarø 2003) has found links between poverty and various unsafe sexual behaviors; some of the studies disaggregate by gender, others do not. Poorer young people (not broken down by gender) are reported to have less knowledge of HIV/AIDS (du Plessis, Meyer-Weitz, and Steyn 1993) and to begin having sex at younger ages (Kelly and Parker 2000). Poverty and lack of parental resources are cited as primary reasons for young women to trade sex for goods or favors or to engage in relationships that involve financial support (Adams and Marshall 1998; Kelly and Parker 2000). Condom use is reported to be consistently lower in these types of sexual encounters (Kaufman and Stavrou 2002; Abdool-Karim 1998; Adams and Marshall 1998). In one study of high school students, those of lower socioeconomic status (gender not specified by Eaton, Flisher, and Aarø) reported experiencing eight times as much physical abuse and four times as much attempted and actual rape within relationships compared with those of higher socioeconomic status (Whitefield 1999).

CONCEPTUAL FRAMEWORK

The starting point for the analysis is illustrated in Figure 1. The conceptual framework was developed on the basis of an extensive review of literature from a variety disciplines that examines HIV risk among young women and men; these include sociology, demography, economics, political economy, epidemiology, psychology, and anthropology, both globally and from South Africa. The sexual and reproductive

behaviors and experiences examined in the research have been shown to reduce the risk of contracting HIV within an environment where HIV is prevalent. They include delayed sexual debut, smaller age difference between sexual partners, no experience of forced sex, no exchanges of sex for money, goods, or favors, using a condom during sex, reducing the number of concurrent sexual partners, and engaging in secondary abstinence. The manner in which these behaviors reduce the risk of disease and how they may co-exist and influence one another are discussed in a later section of the paper; suffice it to say here that although no magic bullet has been found for HIV prevention, most information campaigns targeted at young people stress the "ABC" approach: delayed age at sexual debut ("A" for abstinence), reduction in the number of partners after sexual debut ("B" for behavior change), and condom use when sexually active ("C" for condom use). Discussion of safe sex practices within sexual relationships is another topic analyzed in the study; the extent to which safe behaviors can be discussed with sexual partners is a precursor to behavior being enacted (Izett and Toubia 1999).[5] A final outcome studied is early pregnancy. Despite high average income and education levels, South Africa has a very high teenage pregnancy rate which is a matter of great concern for policymakers.

Figure 1 presents a model of the exogenous influences of society, community, and household on individual proximate determinants and on the study outcomes of interest. Unlike models that view sexual behavior as determined largely by individual "health beliefs" and knowledge (such as Ajzen and Fishbein 1980; Janz and Becker 1984), the current framework recognizes that knowledge interacts with (a) skills, experience, confidence, and self-esteem and (b) livelihood options and school attendance, to affect sexual and reproductive health behaviors. Even with awareness and knowledge of risk factors, other proximate determinants—many influenced by common independent factors—may affect sexual behavior. A number of studies have shown that a mismatch between HIV knowledge and sexual behaviors exists in many settings, including South Africa (Worth 1989; Richter 1996; Varga and Makubalo 1996; Abdool-Karim 2001; Campbell 2003).

The individual proximate determinants within the framework may be interrelated; for example, livelihood activities may raise levels of skills and experience, while school enrollment (a livelihood investment strategy) may increase health knowledge. Confidence may improve with greater health knowledge or with more work or schooling experience. Given their co-determined nature, the effects of each of these proximate outcomes on sexual behaviors are not directly modeled. Instead, the influences of underlying exogenous determinants of sexual behaviors are the focus of the study. Another motivation for employing such "reduced-form" specifications is that past sexual behaviors and outcomes (likely to be highly correlated with current behaviors) may affect the proximate outcomes. For example, early age at first sex may influence school attendance through raising the risk of pregnancy. Even with South Africa's progressive policy of allowing new mothers to return to school after the birth of their child (Kaufman, de Wet, and Stadler 2001), school attendance and current educational attainment of young people are not exogenous in a model examining their sexual behaviors.

Also of relevance for the conceptual framework is the timing of various transitions to adulthood in South Africa. Into their 20s, many young people are still attending school, are not yet married, and reside with parents or grandparents. In 1999, 96 percent, 72 percent, and 45 percent of 14-, 18-, and 20-year-olds, respectively, were attending school below the tertiary level (Statistics South Africa 2001). The United Nations (2000) reports mean singulate age at marriage in South Africa to be 27 years for females and 29 years for males. As described earlier, many young people (and adults) are unemployed. At the same time, however, the South Africa 1998 Demographic and Health Survey indicates that among 20–24-year-old women, 40 percent had given birth before the age of 20, and 20 percent before the age of 18.

Despite late age of school attendance and marriage, many young people in South Africa, as in other developing countries, also have adult responsibilities (caring for younger siblings or sick parents) and perform adult roles (being a parent). Most do not, however, have the social and legal rights (to inherit property, to apply for and work in certain jobs, etc.) and access to resources (physical assets, credit, reproductive health information and services, etc.) that adults enjoy. The interplay and timing of adult roles and responsibilities and lack of rights and resources varies by gender. Social adult roles for women, especially that of mother, are frequently not delayed (although there is a long interval between first and second births among women who give birth as teenagers). Social adult roles for men, on the other hand, especially breadwinner and father, are late due to high unemployment and late age at marriage combined with low rates of pre-marital cohabitation with a sexual partner. Access to resources by young people of both genders is, therefore, mediated substantially through their natal households. Parental proximity and mere survival may be important to the well-being and sexual decisionmaking of young people in this setting. In addition to physical and financial resources, parents may provide positive role modeling, effective communication about sexuality and safe sexual behaviors, enhancement and support of academic achievements, and monitoring of activities with peers (Perrino et al. 2000).

THE DATA

The data are from the 2001 survey of the "Transitions to Adulthood in the Context of AIDS in South Africa" study from KwaZulu-Natal province, South Africa (Rutenberg et al. 2001; Magnani et al. 2003). KwaZulu-Natal has the largest population in South Africa, about one-half of whom reside in urban areas (as classified by the South African Census Bureau). KwaZulu-Natal is the home of the Zulu nation, and Zulu speakers comprise the majority of the population of the province (82 percent), with Indians making up another 9 percent, and whites and coloreds together comprising the final 9 percent. KwaZulu-Natal's largest city, the seaport of Durban, is located on the Indian Ocean along the eastern coast of the country. This a major hub for goods shipped in and out of southern Africa, with a large amount of tractor-trailer traffic passing through Durban; this transportation activity is believed to contribute to the province's relatively high rate of HIV/AIDS (36.5 percent of antenatal clinic attendees in 2002, versus 26.5 percent nationally).

Two districts within KwaZulu-Natal province were purposively chosen for the study site, Durban Metro and Mtunzini Magisterial District, as they represented urban, transitional and rural areas of the province. A modified stratified, multi-stage cluster sampling method (Turner et al. 1996) was used with census enumeration areas from the 1996 census serving as the primary sampling unit.[6] Interviews were conducted with all willing young people aged 14–24 years within each census enumeration area.

Many aspects of transitions to adulthood were covered in the survey, including schooling, paid and unpaid work, sexual and reproductive health behavior, HIV/AIDS knowledge and attitudes, childbearing, marriage, and perceptions of safety. The study also includes (a) interviews with heads of households, mainly parents, about household demographic composition, living conditions, economic status and shocks, and HIV/AIDS attitudes; (b) community surveys examining infrastructure, services, and safety; and (c) interviews with secondary school principals to assess the extent of coverage of the government-mandated school-based life-skills curriculum and its impact on young people's HIV knowledge, attitudes, and sexual risk-taking behaviors.[7] As the first panel study in South Africa focusing on adolescents, it is beginning to fill gaps in knowledge about adolescent's lives in an environment characterized by both high HIV prevalence and unequal access to opportunities and services, including schooling, employment, and health care.

Variables of particular interest for the current study are household socioeconomic status and young people's sexual behaviors, experiences, and reproductive health outcomes. Household wealth is the socioeconomic status measure employed for the analysis. Although information on household expenditure was also collected, wealth effects are reported here since wealth is more strictly exogenous in a model of health behaviors (Strauss and Thomas 1998) and is less subject to reporting error. The asset list in the survey is more comprehensive than a DHS-style list. Ownership of 23 items is possible, including household appliances, communication equipment, vehicles, housing, land, livestock, and savings. Ninety-nine percent of households reported their number of assets owned.[8]

Sexual behaviors, experiences, and reproductive health outcomes of young people were collected using verbal face-to-face interviews by local enumerators of the same ethnicity, gender, and general age as the respondent. Informed consent was given by all respondents and parental consent was given for respondents who were legal minors. Given the sensitive nature of many of the questions, an effort was made to conduct interviews of young people within a private setting of the household area (e.g. out of earshot of parents) if the young person so desired. The Transitions study team acknowledges that verbal interview methods to gather data on sensitive topics could result in potential reporting error. Although new methods such as audio-CASI (audio computer-assisted self-interviewing) are now being experimented with in an effort to address this issue (Mensch, Hewett, Erulkar 2003), the verbal face-to-face interview is still the conventional method used by most studies on this topic.

EMPIRICAL METHODOLOGY

Socioeconomic status is operationalized using an index of household wealth constructed by summing the number of consumer durables owned by households with young people and then dividing the households into groups where clear breaks in the distribution were observed. While the asset summing approach has the disadvantage that inexpensive items are given the same weight as costly items, this measure has been shown to be a reliable predictor of the impact of economic well-being on fertility and human capital outcomes in developing countries (Bollen, Glanville, and Stecklov 2002).[9] Using the cut points of 0–5, 6–7, 8–9, 10–2, and 13–23 assets owned resulted in households being assigned to one of five wealth quintiles.

In the multivariate analysis, I control for age, ethnicity, household wealth, household size, highest adult education in the household, parental residence and survival, urban versus rural residence, and magisterial district. Race is included because population groups that were systematically separated during apartheid remain residentially segregated to a large extent even today, especially in KwaZulu-Natal (Kaufman and Stavrou 2002), and much research in South Africa includes data disaggregated by race. I do not attempt to control in the multivariate analysis for selectivity into sexual initiation for outcomes that condition on having ever had sex since it is difficult to find convincing factors that would influence sexual debut but not later sexual behaviors.

Logistic regressions are used to model the outcomes ever been forced to have sex, ever traded sex for goods or favors, used a condom at last sex, had two or more sexual partners in the year before the survey, practiced secondary abstinence in the year before the survey, and indicators of whether one discussed using condoms, ways to avoid pregnancy, or ways to avoid HIV/AIDS with the most recent sexual partner. Ever been forced to have sex and ever traded sex are not conditioned on having ever had sex; having multiple partners and practicing secondary abstinence in the year before the survey are conditioned on having ever had sex; the remaining outcomes listed above are conditioned on having had a sex partner in the year before the survey. Sexual debut and ever been pregnant are modeled using cox proportional hazard models, with age at which this event occurred (if ever) being the dependent variable. Finally, age difference between self and first sexual partner, and self and most recent sexual partner are modeled using median regressions.

CHARACTERISTICS OF YOUNG WOMEN AND MEN IN THE SAMPLE

Summary statistics for individual young people are presented in Table 1. A little over half the sample is female; mean age for both genders is just over 18 years. Two-thirds are children of the household head; 14 percent are grandchildren of the household head; and 13 percent are related in some other way to the head. Only 2 percent of males and 4 percent of females are heads or spouses of heads, and only 2.5 percent are fostered or adopted children. These percentages do not vary significantly by age, which is not surprising given the late age at school-leaving, marriage, and moving out of the natal

household in South Africa. (In these data 72 percent of 18-year-olds and 46 percent of 20-year-olds are still in secondary school). Only 3 percent of females and 1 percent of males are married or residing with a sexual partner; even the percentage of 23–24-year-old females and males married is low at 7 and 4 percent, respectively. Sixty-five percent of the sample reside with their mother; 40 percent reside with their father; 36 percent reside with both parents. Eight percent report having a deceased mother and 23 percent report a deceased father.[10]

Household-level statistics in Table 2 are presented according to the four population group (race) classifications that were used under the apartheid system and continue to be used in South Africa today. Seventy-four percent of households are African (indigenous), 3 percent are colored (mixed race), 20 percent are Asian (of Indian descent), and 4 percent are white. The distribution of household wealth within each population group shows that although Africans account for the vast majority of poorer households, there is substantial variation in economic well-being among Africans. Research indicates that while the between-race component of economic inequality has declined in South Africa since apartheid, the within-race component has increased (Moll 1998). Lam (1999) attributes this trend to a combination of historically limited schooling opportunities for nonwhites along with improved educational and economic opportunities for better-off nonwhites since apartheid. The new face of struggle in South African society is increasingly class-based instead of race-based (Soudien and Sayed 2003). African households are large, with an average of almost seven members, compared with five for coloreds and Asians and four for whites. Highest educational attainment of adults (defined as persons aged 25 years and older, to distinguish them from the young people being examined in the study) in households with young people varies greatly by population group. Over half of African households have adults whose highest education is primary or less; 22 percent of Asian and only 1 percent white households have adults this poorly educated. All non-African and 76 percent of African households are located in urban areas.

SEXUAL BEHAVIORS, EXPERIENCES, AND OUTCOMES OF YOUNG WOMEN AND MEN

Ever had sex. A major goal of HIV prevention programs is encouraging young people to delay first sex. Earlier reported age at sexual debut has been associated with a higher number of subsequent sexual partners per reporting period in later adolescence and early adulthood (Greenburg, Magder, and Aral 1992; Duncan, Tibaux, and Pelzer et al. 1990, quoted in MacPhail, Williams, and Campbell 2002). Older age at first sex (along with a reduction in the number of sexual partners) appears to have contributed to declines in HIV infection rates among young people in Uganda (Kilian et al. 1999; Fabiani et al. 2001, quoted in Magnani et al. 2003). Later sexual initiation also reduces the risk of sexually transmitted infections and pregnancy.

Using data from Demographic and Health Surveys collected in 11 sub-Saharan African countries between 1994 and 1998, the Population Reference Bureau (2001) finds that in nine of these countries, more than half of young women had sex before age 18.

Female sexual experience preceded marriage in most settings; in all 11 countries, a higher proportion of young women first had sex before age 18 than were married before this age. Estimates for age at sexual initiation in South Africa vary. The 1998 South Africa Demographic and Health Survey estimates 18 years for females, whereas the South Africa–based Health Systems Trust (2001), using a variety of data sources, concludes that the national average is 15 years for girls and 14 years for boys. The latter study concludes that there is a great heterogeneity of experiences: significant numbers of young people report having their sexual debut well before age 14, while many report still being virgins at age 18. Boys are reported to start sexual activity earlier and in higher proportions than girls.

Singh, Darroch, and Frost (2001), examining the extent to which socioeconomic disadvantage is associated with "unhealthy" adolescent sexual and reproductive behaviors and outcomes in more developed countries, show that relative socioeconomic disadvantage is associated with earlier age at first intercourse. In a gender-pooled sample of 12–20-year-old females and 12–25-year-old males in Cameroon (Rwenge 2003), father's unemployment and low household living standards contributed to earlier sexual debut. For South Africa, Kelly and Parker (2000) indicate that household poverty is associated with earlier sexual debut among 15–19-year-old females and males pooled across different sites.

Bivariate patterns from the Transitions study are presented in Table 3. The proportion of females and males sexually initiated among 14–19-year-olds is 37 and 48 percent, respectively; for 20-24-year-olds, the female and male proportions are 84 and 88 percent. For ages 14–24 pooled (not presented in the table), the female and male percentages are 53 and 61 percent. These levels are similar to those found among 15–24-year-olds in the Mandela Foundation-HSRC (2002) study (58 and 56 percent for females and males), but somewhat lower than those reported in Pettifor et al. (2004) (68 and 67 percent), especially for females. The Transitions data show statistically significant differences by wealth status in the percentage of young women and men who have ever had sex within both the 14–19 and 20–24 year age groups: low relative household wealth is associated with much higher rates of having ever had sex.

The multivariate results of hazard functions modeling this outcome separately for females and males, presented in Table 4, confirm the bivariate wealth findings. The negative effect of wealth on earlier sexual debut, however, is larger and more significant for females. Residing in a more highly educated household delays age at first sex for females but not males, while not residing with a living mother leads to earlier female sexual debut. Being a maternal orphan results in younger age at sexual initiation among males, while being a paternal orphan hastens the sexual debut of females and males. Males residing in urban areas have their first sexual experience at younger ages than rural males. Colored and Asian youth have later sexual debut than Africans, while white males initiate sex later than African males.

First sexual experience: Willingness and age difference between partner and self. According to UNAIDS (2004) between one-fifth and one-half of all girls and young

women around the world report that their first sexual encounter was forced. In a review of nonconsensual sexual experiences of young people in developing countries, Jejeebhoy and Bott (2003) estimate that 15 to 30 percent of first female sexual experiences were forced, often by someone the girl was acquainted with and in a familiar setting. In the Pettifor et al. (2004) study in South Africa, 98 percent of young men reported they "really wanted" or "wanted" to have sex their first time, versus only 71 percent of young women. Among 13–17-year-old females in the rural Transkei area of South Africa, 28 percent report first sex as forced (Buga et al. 1996). In an informal settlement area of Cape Town, 18 percent of never-pregnant girls and 32 percent of girls not currently pregnant reported their first sex was forced or rape (Jewkes et al. 2001). Campbell (2003) reports that rape and emotional pressure are common in young people's first sexual experiences in a mining community outside of Johannesburg, South Africa.

In the Transitions data, only 55 percent of females, versus 94 percent of males, who have had sex report themselves as having been "willing" at their first sexual encounter (as opposed to having been persuaded, tricked, forced, or raped). There are no significant patterns in age differences between females who report themselves as having been "willing" at first sex and those who report having been unwilling. Among females, however, 48, 51, and 48 percent in the lower three wealth quintiles report their first sexual encounter as a willing act, versus 64 and 72 percent in the two highest wealth quintiles. The differences between women in the lower three quintiles and those in the fourth and highest quintiles are both statistically significant at the $p<.01$ level.

Luke and Kurz (2002), reviewing the cross-generational and transactional sexual experiences of young women in sub-Saharan Africa, find that most first sex partners of females are two to four years older than they are (Calvès and Meekers 1997; Kekovole et al. 1997; Nzyuko et al. 1997). A qualitative study from urban Nigeria found that girls' first sex is mainly with peers, and relationships with older men come later (Temin et al. 1999). In the Transitions study, the median reported age difference between females and their first sexual partner (among those who have ever had sex) is three years. There are no significant differences by wealth, as indicated in Table 3. Males, on the other hand, appear to have their first sexual experience with partners close to their own age or slightly younger. As shown in Table 4, multivariate results indicate that older females and males had first sex partners who were slightly further from their own age than the younger people in the sample. Non-African men had first partners who were closer to their own age than African men. Young men residing in households with more highly educated adults had older first sexual partners, as did men who are maternal orphans.

Ever forced to have sex. In addition to evidence presented above on the large proportion of first female sexual encounters that are unwanted or forced, physical violence is documented as common within ongoing relationships as well. In the 1998 Demographic and Health Survey, 12 percent of 15–19-year-old women and 14 percent of 20–24-year-old women reported they had been abused by a partner at some point in their lives (SA DOH 1999); 5 percent of each age group reported having been raped. A study of urban adolescents in KwaZulu-Natal revealed that 55 percent of female respondents

reported having attempted to refuse sexual advances from their most recent partner; 71 percent of these respondents admitted their attempts to avoid sex had not been successful and that their refusal nearly always resulted in physical coercion, abuse, or threats of rejection (Varga 1997). Research by Wood and Jewkes (1997) among young African women in a South African township reveals that 60 percent have had sex against their wishes; many viewed sexual coercion as a routine part of a relationship. Other studies report that young women's attempts to discuss condoms or HIV/AIDS before a sexual encounter led to rape or violence (Varga and Makubalo 1996; Wood and Jewkes 1997). In MacPhail and Campbell's (2001) research in South Africa, young women reported that if they do not willingly provide sex, their boyfriends would demand it as proof of their love. Besides emotional distress, such encounters may also carry a high risk of pregnancy, STIs and HIV since a condom is unlikely to be used.

Another set of community-based studies in South Africa revealed that in some areas almost a quarter of women report having been abused by a current or former partner, and that up to a half are affected by emotional or "economic" abuse[11] (Jewkes et al. 1999, quoted in Dissel and Ngubeni 2003). The same study found that gender-based social and economic inequalities often made it impossible for women to negotiate for safer sex. As reported above, Whitefield (1999) found that violence within the relationships of secondary school students in South Africa is more common among those who are economically disadvantaged. Research by Podhisita et al. (1994, quoted in Gage 1998) and Abéga et al. (1994, reported in Rwenge 2003) indicates that economic need and parental pressure to earn money may make poor adolescent girls more vulnerable than poor adult women to exploitive and coercive sexual relationships.

While global evidence reveals that being in school is protective against unsafe sexual behavior, attention is being paid to schools as settings that may not discourage, and in some cases may encourage, gender-based harassment and violence. A recent report from South Africa found that the threat of violence at school is a significant challenge to learning. Girls describe an environment in which violent and degrading sexual assaults are normal in many schools; violence is considered a systemic problem within the educational system in South Africa (Human Rights Watch 2001). Conditions during the commute to school are further described as posing risks for girls. Some girls interviewed in the South Africa Human Rights Watch report said the risk of sexual violence surrounding their school experience was so threatening or injurious that they left school. This is particularly disturbing since education provides young women with an important source of current and future empowerment.

Pettifor et al. (2004) report the proportion of sexually experienced young women and men in South Africa who have ever been physically forced to have sex at 10 and 2 percent. Conditioning on sexual experience, our data show similar figures: 12 percent of females and 2 percent of males. I chose not to condition on sexual experience in the analysis, however, since being forced to have sex is not limited to those who are currently sexually active.

Table 3 presents the bivariate patterns for females: 6 percent report having ever been forced to have sex. (Similar statistics are not presented for males since only 1

percent report such an experience.) Being poorer is associated with significantly greater chances of having been forced to have sex: 10 percent of females in the lowest wealth quintile versus 3 percent in the highest wealth quintile. Multivariate findings in Table 4 indicate that residing in a wealthier household significantly reduces the likelihood of having been forced to have sex. Being Asian also significantly lowers the odds.

Ever received anything in exchange for sex. There is growing evidence that young people, especially women, engage in exchanges of sex for money, goods, or favors. Luke and Kurz's (2002) review of studies from sub-Saharan Africa indicates that reports of this behavior vary greatly by country, ranging from 5 percent of girls aged 12–17 in Cameroon (Meekers and Calvès 1997) to 66 percent of girls aged 10–18 in Malawi (Weiss et al. 1996), to 80 percent of girls aged 14–19 in urban Tanzania (Komba-Malekela and Liljestrom 1994). Using data from Demographic and Health Surveys collected in five sub-Saharan African countries between 1994 and 1998 that included a question on exchanging sex, the Population Reference Bureau (2001) reports the prevalence of recent exchanges among unmarried women aged 15–19 at 13 percent in Zimbabwe, 21 percent in Kenya, 26 percent in Mali, 31 percent in Uganda, and 38 percent in Zambia (PRB 2001).[12]

Although there are various rationales for young women to engage in exchanges involving sex, the overwhelming motivation behind these acts is believed to be economic opportunity (Meekers and Calvès 1997; Fugelsang 1997; Wojcicki 2002; Luke 2003). Anecdotal evidence from several world regions suggests that poverty and structural economic reforms, such as the imposition in the 1980s of fees for primary schooling and basic health care, have caused young women and mothers to turn to sexual transactions in order to obtain much-needed cash (Cohen 1998). A study in urban Mozambique (Machel 2001) revealed that adolescent girls attending secondary school in a working-class neighborhood were much more likely to have received material support from their sexual partners than girls attending a middle-class secondary school. In a study of Nigerian university students, Edet (1997, quoted in Barnett and Whiteside 2002) suggests that a young woman may end up having as many as three simultaneous sexual relationships to make her way through university—her teacher (to ensure good marks), a "sugar daddy" or "sponsor" (to pay her living expenses and school fees), and her boyfriend. The results of MacPhail, Williams, and Campbell (2002) in South Africa reveal that the presence of commercial sex workers in disadvantaged communities where unemployment is high encourages other young women to exchange sex for gifts. In an urban market-based environment, the need for cash may increase the likelihood of sexual exchanges (Gage 1998).

The distinction between commodified exchanges of sex and receiving gifts that are considered a normal part of a dating relationship is not always clear. Focus group results from the Durban metro area in 1999 (Kaufman and Stavrou 2002) reveal that during dating and courtship between young people of similar age, exchanges of gifts are normal and are often expected. In this study of young people, both gift giving and coercion were reported to be common in sexual relationships. The only group that saw

the two as being linked, however, were African females. Indeed, in settings with few economic opportunities, young women may have difficulty separating sex from economic survival (Archavanitkul and Guest 1994; Caldwell et al. 1989; Schoepf 1989, quoted in Gage 1998). Nnko and Pool (1997) find that money and rewards are important in sexual relationships among adolescents in Tanzania, and that sex does not occur without economic exchange of some form (reported in Kaufman and Stavrou 2002). Hunter (2002) distinguishes between sex linked to subsistence needs and sex linked to socially motivated consumption desires in KwaZulu-Natal. The former behavior is more common in rural informal settlements where various economic circumstances have severely limited the livelihood opportunities of young women. The latter behavior is more characteristic of urban townships where fashionable consumer goods are highly socially valued; here young women are more likely to assert their agency and exercise greater freedom of movement, both of which facilitate relationships with men including "sponsors."

The health concern regarding female exchanges of sex is that a condom is less likely to be used, since the male partner is apt to be older and the one with the greater bargaining power to dictate the terms of the sexual encounter or relationship. Kaufman and Stavrou (2002) conclude that money and gifts influence African girls, young girls in particular, not to suggest condom use in KwaZulu-Natal. As noted previously, social and economic disadvantage often make it difficult for women to avoid coercive relationships and negotiate for safer sex within relationships (Worth 1989; Jewkes et al. 1999; Rwenge 2003; Jejeebhoy and Bott 2003).

Given its complexity, much of the research around this issue is qualitative in nature. Among a growing number of quantitative studies (many reviewed in Luke and Kurz 2002), surprisingly few include the economic status of either partner as an explanatory variable in their analyses. The results reported below should fill part of the gap in the quantitative literature on the link between relative economic status and female exchanges of sex. (Results are not reported for males because their involvement in exchanging sex is minuscule in these data.)

The bivariate evidence in Table 3 indicates that residing in a household with low wealth is associated with higher rates of ever having received goods, money, or favors in exchange for sex; the wealth differences are statistically significant. The multivariate results, shown in Table 4, reveal that young women residing in households with higher wealth have significantly much lower odds of having ever exchanged sex. Those residing in households where a member has post-secondary education drop from the regression because none of these young women report having traded sex. The same is true for females residing in rural areas and those who are colored and white. Older females have higher odds of ever having traded sex.

Age difference between most recent sexual partner and self. A number of reasons have been documented for young women to be involved in relationships with older men. These include seeking love, finding a marriage partner (Weiss et al. 1996; Komba-Malekela and Liljestrom 1994), social status, and economic benefits (Kishor

1995; Meekers and Calvès 1997; Rwenge 2000; Silberschmidt and Rasch 2001). Recent epidemiological evidence indicates that the potential social and economic benefits gained from such relationships may be tempered by their accompanying health risks in settings with high levels of HIV. Evidence from South Africa, Uganda, and Zimbabwe indicates that relationships with older sexual partners carry higher than average risk of HIV infection for adolescent females because these men are more experienced sexually and of relatively higher economic means and hence more likely to have visited commercial sex workers (Kelly et al. 2001; MacPhail, Williams, Campbell 2002; Gregson et al. 2002). A second set of reasons is that a condom is unlikely to be used in these relationships (Luke and Kurz 2002) and women are approximately twice as likely as men to contract HIV from a single act of unprotected sex (Nicolosi et al. 1994; Stanton 2002; UNAIDS 2004). Obviously, not all sexual relationships among young women are with older men. Girls may at the same time have older partners for material benefits and boyfriends closer to their own age with whom they have more serious relationships (Meekers and Calvès 1997; Edet 1997; Kaufman and Stavrou 2002; Gregson et al. 2002).

Table 3 presents median age difference between young women and their most recent sexual partners (among women who had a partner in the 12 months before the survey). The difference overall and for most wealth subgroups is three years. While those in the lowest wealth quintile had partners more their senior, the differences are not statistically significant. The statistics for men indicate that those from more wealthy households have recent sex partners statistically significantly closer to their own age. The multivariate results, presented in Table 5, reveal that being older is associated with having a partner further from one's age for both females and males, although the effect is larger and much more significant for males. Wealth status did not have any significant effects on the relative age of recent partners of females. Males from households in higher wealth quintiles have partners slightly but statistically significantly closer to their own age relative to males in the lowest wealth quintile. It is frequently assumed that richer men have younger sexual partners. The current finding may stem from the fact that the males in the sample are not of advanced age. Also, the regression considers only the last sexual partner. It is possible that richer young men could have younger female sex partners only occasionally; if so, some of this behavior will not be detected here. Not residing with living mother reduces the age difference between females and their most recent partners, while young women whose living fathers are not resident or whose fathers have died have relatively older recent sexual partners.

Used condom at last sex with most recent sexual partner. As with delaying age at sexual debut, increasing condom use is one of the three cornerstones of most HIV prevention programs. As noted earlier, politics created wide mistrust of condoms at the early stages of the HIV/AIDS epidemic in South Africa. Across a number of settings, it has also been documented that men may consider women who want to use condoms as promiscuous. The fact that some condom promotion materials target prostitutes may reinforce this idea (Bledsoe 1991). The use of condoms in long-term relationships may be viewed as signaling a lack of trust or an admission of infidelity, and is therefore often

avoided (Varga 1997; Worth 1989; Abdool-Karim 2001). Research among young people in South Africa has revealed that condom use is a difficult topic to introduce in conversation, with females reporting a fear that it could lead to negative emotional, physical, or economic consequences (Varga and Makabulo 1996; Wood and Jewkes 1997).

The Mandela Foundation-HSRC (2002) national survey in South Africa indicates that among 15–24-year-olds, 46 percent of females and 57 percent of males used a condom at last sex. The Pettifor et al. (2004) study of South African young people showed levels similar to the first study. Wide differences were found in the latter study, however, by type of neighborhood: the prevalence was 36 percent in rural farm areas, 43 percent in rural informal areas, 63 percent in urban formal neighborhoods, and 52 percent in urban informal neighborhoods.

Evidence from the Transitions study is presented in Table 3. The overall level for females (49 percent) is similar to that reported in the two national studies just cited; the level for males (66 percent), on the other hand, is higher than in those two studies. Among females, there are no bivariate patterns by wealth status. Among males, those in the upper three wealth quintiles have much greater condom use than those in the lowest two quintiles. The multivariate findings, shown in Table 5, reveal that women who are younger or who are Asian or colored (versus African) have lower odds of having used a condom at last sex. Age and population group were not significant for young men. Young women residing in households with higher wealth have greater odds of condom use. Similar but smaller wealth effects were found for young men. Household education had very large and significant positive effects on condom use for both genders. Young men whose living fathers are not resident had lower odds of condom use at last sex.

Had multiple sex partners in the year before the survey. Reducing the number of concurrent sexual partners is the third pillar of HIV prevention. A drop in the number of sexual partners appears to have been a contributing factor to the decline in HIV among young people in Uganda (Kilian et al. 1999; Fabiani et al. 2001, quoted in Magnani et al. 2003). In describing the sexual behaviors of US teenagers, Rodgers (1999) reviews psychology literature which reveals that females are more likely to equate sexual intimacy with love or emotional commitment and are thus less likely to have multiple sex partners, all else being equal. Young women largely perceive sex as a form of caring that results in the integration of identity and intimacy. Young men, on the other hand, are more influenced by external factors such as peer pressure and parental control.

In developing countries, the reasons for women to have multiple sex partners are largely described as economic. Focus group results of Meekers and Calvès (1997) from Cameroon indicate that economic need may increase the likelihood of multiple sexual partners for both females and males. Mann (1997) describes having multiple partners as an economic survival tactic for women. Edet's (1997) study provides an example of a young woman having concurrent sexual partners to fulfill different needs, both economic and emotional. Luke and Kurz (2002) describe a small number of studies that depict girls as active social agents who have learned that sex is a valued resource and may maintain

relationships with multiple partners simultaneously to maximize these benefits (Wood et al. 1998, Komba-Malekela and Liljestrom 1994). The reasons adduced for men to have multiple partners usually emphasize cultural traditions in which sexual conquest is a status marker; masculine discourses often place a high value on multiple sex partners. In a number of settings, males having multiple sex partners is accepted by both genders and may even be encouraged by male peers or elders. Luke and Kurz report that even with the decline of traditional polygyny, multiple partnerships for men have continued via informal polygyny or the custom of having one legitimate wife and numerous "outside" wives or girlfriends (Wood et al. 1998; Vos 1994; Ulin 1992; Wa Karanja 1987; Dinan 1983). The sexual networks of men have broadened to include nonmarital partners such as casual girlfriends and prostitutes (Caldwell et al. 1993, 1992, 1991). In a gender-pooled analysis, Rwenge (2003) shows that socioeconomic disadvantage increases the odds of having multiple sex partners for young people in Cameroon.

The Mandela Foundation-HSRC national survey (2002) found that 9 percent of females and 23 percent of young males had more than one sexual partner in the year before the survey. The South African study by Pettifor et al. (2004) presents higher prevalence: 12 percent of females and 44 percent of males. Results from the Transitions study, presented in Table 6, show levels that are in the general range of the two recent national South Africa surveys: 8 percent of females and 35 percent of males had multiple partners in the year before the survey. There are no clear wealth patterns for females, while among males those in the highest wealth quintile have the lowest rates of multiple partners. The multivariate results in Table 5 show clear population group and wealth influences. Colored and white women have much higher odds than African women of having more than one sex partner in the year before the survey. Among men, being Asian is associated with lower odds. Greater household wealth among females and males significantly reduces the chances of having multiple sex partners; these effects are larger and more statistically significant for females. Males residing in households with adults who have post-secondary education have higher odds of having multiple partners.

Secondary abstinence. Another aspect of reducing the number of sexual partners is whether those who have become sexually active begin to practice abstinence for a sustained period, often referred to as "secondary abstinence." Prevalence of this behavior among young people in South Africa in the Mandela Foundation-HSRC (2002) survey was 18 percent for males and 14 percent for females. Pettifor et al. (2004) report levels for 15–19-year-olds at 13 percent for males and 5 percent for females, while corresponding levels for 20–24-year-olds are 15 percent and 13 percent. Transitions results in Table 6 reveal that 7 percent of females and 12 percent of males who had become sexually active were abstinent in the year before the survey. Bivariate wealth patterns are not apparent for females or males.

The multivariate results in Table 7 show that age reduces secondary abstinence among males. For females, being Asian reduces the odds. Higher wealth raises the chances of secondary abstinence among women. Household size reduces male odds, while residing in a more highly educated household lowers female odds. Being a

maternal or paternal orphan reduces the likelihood of secondary abstinence for both females and males, with the paternal orphan effect being statistically significant only for males.

Discussion of safe sex topics with most recent sexual partner. A variety of evidence presented above, particularly regarding condom use, points to the difficulty adolescents face in discussing sensitive topics related to sexual and reproductive health. Varga and Makabulo (1996), Varga (1997), and Wood and Jewkes (1997) found very little communication or negotiation in most sexual relationships between young people in South Africa. Primary reasons given by females for non-discussion include fear that they would appear not to trust their partners, or that their partners would suspect infidelity (Varga 1997; Abdool-Karim 2001), with the possible result being physical, emotional, or "economic" abuse (Varga and Makabulo 1996; Wood and Jewkes 1997). Jewkes et al. (1999) reveal that in relationships that include physical abuse in South Africa it is significantly less likely that communication will take place about HIV prevention. Moreover, within sexual relationships, women are often expected to give priority to their partners' needs and wishes. Thus, women often decide not to ask men to use condoms, or do not persist in asking, because of concerns about men's sexual pleasure (Wood 2000, quoted in Jewkes et al. 2003).

Low social and economic position puts young women at a disadvantage in sexual negotiations because they are more dependent on their partners for survival (Worth 1989; Machel 2001; Abdool-Karim 2001). Discussing sensitive topics may threaten the stability of the relationship, with potential negative consequences for female's economic security. Age differences between partners may also inhibit female negotiation of safer sex practices. Large age differences between partners frequently co-exist with female economic vulnerability, in which case female bargaining positions are even weaker (Luke and Kurz 2002). Young women of lower socioeconomic status may also be less assertive, have poorer negotiating skills, and be more accepting of traditional gender roles (Singh, Darroch, and Frost 2001).

The percentages of young people in the Transitions study who have discussed avoiding pregnancy, using condoms, or avoiding HIV with their most recent sexual partner are presented in Table 6. A high percentage of young people report having discussed each of the three topics, at approximately 80 percent for both females and males. Among females, those in the lowest wealth quintiles were significantly less likely to have discussed each topic; among males, low wealth is associated with less discussion of pregnancy avoidance and condom use, while an inverted u-shape is observed between wealth and discussion of avoiding HIV.

The multivariate findings on these three outcomes are presented Tables 7 and 8. Discussion of each topic increased very significantly with greater household wealth among both females and males, but the effects are generally larger for females. The influence of household education is also positive. Male discussion of each topic increases with age, but older females are less likely to discuss condom use with their partners. Non-Africans were generally less likely to have discussed these sensitive

topics. Not residing with a living mother or being a maternal orphan reduced female and male odds of discussion with partners. Being a paternal orphan lowered females odds of discussion with their sex partners.

Pregnancy. Unsafe sexual behaviors carry the risk not only of HIV and STIs but also of pregnancy for females. The Population Reference Bureau (2001) reports that in 10 of 11 sub-Saharan African countries for which DHS surveys were conducted between 1994 and 1998 (excluding South Africa), at least 30 percent of 18-year-old women were already mothers or were pregnant with their first child. While South Africa's total fertility rate, at 2.9 births per woman nationally in 1998, is estimated to be one of the lowest in sub-Saharan Africa, levels of adolescent childbearing remain high: 35 percent of 19-year-olds in the 1998 DHS had already been pregnant. Recent national survey results in South Africa (Pettifor et al. 2004) reveal that 15 percent of 15–19-year-olds and 54 percent of 20–24-year-old women have ever been pregnant. These finding suggests high rates of sexual activity and inconsistent use of contraceptives. Other reports indicate that high pregnancy rates may also be due in part to gender-based violence, including reported high rates of forced sex and rape (Human Rights Watch 2001; Jewkes et al. 2001).

In the Transitions study, 16 percent of 14–19-year-olds and 57 percent of 20–24-year-old women have been pregnant, as shown in Table 6. Poorer young women in both age groups are significantly more likely to have had a pregnancy. These wealth influences hold up in the multivariate analysis shown in Table 8. In addition, being non-African and from a more highly educated household reduce pregnancy risk. Even controlling for household wealth and education, young women who are paternal orphans have greater chances of early pregnancy.

DISCUSSION

This study has investigated how relative wealth influences the sexual behaviors and experiences of young women and men in South Africa—an environment characterized by high HIV prevalence and high rates of poverty and inequality. Using data from KwaZulu-Natal Province collected from young people and members of their households in 2001, gender-disaggregated regressions have controlled for age, ethnicity, household wealth, household size, highest adult education in the household, parental residence and survival, urban versus rural residence, and magisterial district. Economic disadvantage is found to significantly affect a number of sexual behaviors and experiences of young females and males. Low socioeconomic status influences sexual experiences in diverse ways: it not only increases females' odds of exchanging sex, it also raises females' chances of experiencing coerced sex and females' and males' odds of having multiple sexual partners in the year before the survey. It lowers female chances of secondary abstinence in the year before the survey, and female and male age at sexual debut, condom use at last sex, and communication with most recent sexual partner about sensitive topics. Low socioeconomic status has larger and more statistically significant

effects on female than on male unsafe sexual behaviors; it also increases female risk of early pregnancy.

Household education has mainly protective effects for young people: it raises the odds of condom use and communication with last sexual partner.

Even after controlling for household wealth, education, and a variety of other factors, parental nonresidence and nonsurvival had significant negative influences on the sexual experiences of young people. Those who do not reside with their living mothers have lower chances of discussing safe sex topics with their sexual partners; this is especially true for females. Young females without living fathers in residence have older sexual partners; young men without living fathers in residence were less likely to use condoms at last sex.

Being an orphan increases the risk of a variety of unsafe sexual behaviors. Female and male orphans initiate sexual relationships at an earlier age and have lower odds of practicing secondary abstinence and lower chances of discussing sensitive topics about sex with recent sexual partners. Females who are paternal orphans have older sex partners and are at higher risk for early pregnancy. As noted in the conceptual framework, parents not only provide materially for their children. They may also be sources of emotional support, instill confidence, be potential positive role models, impart information about sexuality and safe sexual behaviors, and help foster communication skills that are necessary for their children to effectively maintain healthy future relationships.

Poverty, low education, and lack of parental guidance and support could influence young people's sexual behaviors by reducing access to information about safe sex practices or by inhibiting their ability to put such knowledge into practice. While information alone is not enough to bring about changes in behavior, information is still a prerequisite. Table 9 presents the number of possible sources (television, radio, billboards, and newspapers or magazines) for family planning information that young people report having been exposed to in the month before the survey. Being from a poorer household is associated with lower access to media messages generally, but especially among females. Multivariate findings show that residing in a household in a low wealth quintile has significant negative effects on access to family planning messages for both sexes, but particularly females. Being younger also reduces access to information. Among females, being a maternal or paternal orphan reduces access to media-based family planning information. Residing in a more educated household increases female access to such messages.

Various research indicates that for young people in South Africa, condom use is a difficult topic to introduce in conversation. This study suggests that poorer young people, especially females, are the most disadvantaged in discussing sensitive topics with their sexual partners. This may arise from a lack of negotiation skills. An evaluation in KwaZulu-Natal of the government's secondary school–based life-skills program, of which negotiation skills are a key intended component, revealed that although life-skills coverage increased dramatically between 1999 and 2001, only 82 percent of low-

resourced schools, versus 92 and 97 percent of medium- and high-resourced schools, had any life-skills education in 2001 (Magnani et al. 2003).

Even with information and good communication skills, young people living in underprivileged settings may still be more likely to find themselves in situations that are conducive to high-risk behavior. Many poor young people in South Africa live in densely populated and informally structured communities characterized by a severe lack of livelihood opportunities and safe recreation options, and high levels of crime and abuse. Research cited above also reveals that female introduction of condom use as a topic of discussion with a sexual partner could result in emotional, physical, or "economic" abuse. If a sexual relationship provides economic security (as many do),[13] poor young women may have much more to lose by raising such sensitive issues in conversation. Another possibility is dissolution of the relationship; since low wealth is associated with fewer economic fallback options, poor young women may fear losing the economic benefits derived from a relationship. As emphasized by Painter (1996) the gap between what people know and how they act is sustained by social and economic realities that constrain individual actions.

CONCLUSION

The results of this study lead to the conclusion that greater attention needs to be paid to how economic and social disadvantages influence the appropriateness and effectiveness of HIV prevention programs for young people. With further reductions, as a result of AIDS-related illness and death, in the ability of households to meet basic needs, poor young people could find themselves with even less access to information and lower incentives to practice safe sexual behaviors. This suggests a need for closer integration of initiatives for HIV prevention, AIDS treatment and mitigation, and poverty reduction.

The findings also indicate that while orphan status raises the risk of certain unsafe sexual behaviors and pregnancy, being from a poor household significantly increases the risk of a larger number of unsafe behaviors. Given the stage of the HIV/AIDS epidemic in South Africa, however, the number of orphans is expected to increase greatly in the next decade, so the joint findings on poverty and orphan status are important for planning appropriate prevention and support responses.

Interactions between gender and poverty were found to have crucial influences on behavior: the negative effects of low wealth were often larger and of greater statistical significance for females than males. Targeting of information and behavior change campaigns to poor females is needed, but it should not be expected that these will substantially change sexual behaviors given the low relative social and economic power that young women wield in their daily lives. Enhancing female negotiation and communication skills is a starting point, but poor young women also need strategies for building economic and social assets so they are in stronger bargaining positions within sexual, peer, and family relationships.

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Figure 1. Conceptual Framework

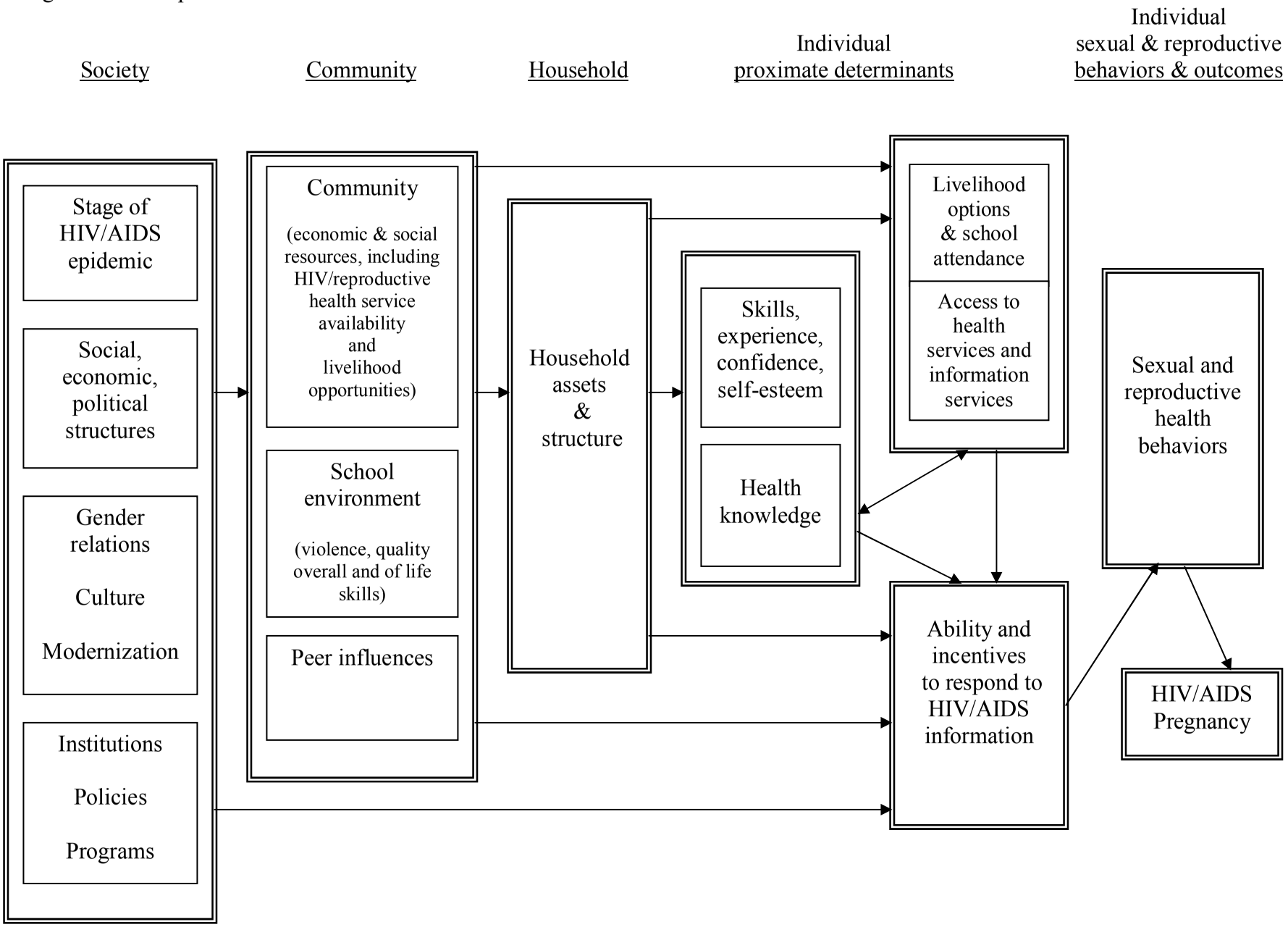

Table 1. Individual-level summary statistics

Sex (percent)		Age (years)	
Female	52.6	**Female** (mean)	18.3
	2,194		2,194
Male	47.4	**Male** (mean)	18.3
	1,980		1,980

Relationship to Household Head (percent)

	Female	Male
Child	65.9	68.0
Grandchild	14.0	14.3
Other relative	13.3	12.8
Head/Spouse	3.6	1.9
Adopted/Fostered	2.5	2.7
Other	0.8	0.3

Percent Married

Age	14-15	16-17	18-19	20-22	23-24	Total
Female	0.0	1.0	2.0	5.0	7.0	3.0
	382	566	541	527	178	2,194
Male	0.0	0.0	1.0	2.0	4.0	1.0
	312	527	498	529	114	1,980

Parental Residence and Survival (percent)

	Father Household Member	Father Not Household Member	Father Dead	Total
Mother Household Member	35.8	15.3	13.9	65.0
	1,493	640	581	2,714
Mother Not Household Member	2.3	17.9	6.4	26.6
	96	748	267	1,111
Mother Dead	1.5	4.2	2.6	8.4
	64	177	108	349
Total	39.6	37.5	22.9	100.0
	1,653	1,565	956	4,174

Table 2. Household-level summary statistics by population group

		Total	African	Colored	Asian	White
% of households in each population group			73.7 1,803	2.6 63	19.8 479	4.2 102
Household Wealth quintile	**Low**	22.0 536	28.9 519	0.0 0	3.6 17	0.0 0
	Low-Mid	18.1 441	22.5 405	10.7 6	6.3 30	0.0 0
	Mid	17.8 432	20.0 360	1.8 1	14.6 70	1.0 1
	High-Mid	23.4 569	20.6 370	26.8 15	35.8 171	12.8 13
	High	18.7 455	8.0 143	60.7 34	39.8 190	86.3 88
Mean Household size (number of persons)		6.2 2,433	6.7 1,797	5.0 56	5.0 478	4.1 102
Highest Adult Education iIn Household	**Primary or less**	43.3 1,053	52.4 941	14.3 8	21.6 103	1.0 1
	Some secondary	35.4 860	30.4 545	60.7 34	54.0 258	22.6 23
	Secondary, not matric	8.4 203	7.1 128	7.1 4	11.7 56	14.7 15
	Secondary, matric	9.9 240	8.1 146	14.3 8	9.8 47	38.2 39
	Post-secondary	3.1 75	2.0 35	3.6 2	2.9 14	23.5 24
Place of Residence	**Rural**	20.0 440	24.0 440	0.0 0	0.0 0	0.0 0
	Urban	80.0 1,993	76.0 1,357	100.0 56	100.0 478	100.0 102

Note: Household information is reported using household-level observations.

Table 3. Sexual Behaviors and Experiences by Gender and Household Wealth Quintile

Wealth Quintile	Ever had sex				Median age diff. first sex partner (yrs)		Ever forced to have sex	Ever traded sex	Median age diff. last sex partner (yrs)		Condom used at last sex	
	Female	Male	Female	Male	Female	Male	Female	Female	Female	Male	Female	Male
	14-19 yrs.		20-24 yrs.									
Low	56%	53%	94%	94%	3	-1	10%	6%	4	-2	43%	58%
	302	236	176	112	319	217	484	484	321	200	324	203
Low-Mid	45%	55%	95%	92%	3	0	7%	4%	3	-2	54%	58%
	259	238	127	113	229	229	389	389	216	207	217	208
Mid	33%	49%	85%	90%	3	-1	6%	1%	3	-2	49%	72%
	274	220	135	108	205	200	413	413	192	185	193	185
High-Mid	33%	49%	75%	87%	3	0	4%	2%	3	-1	53%	71%
	340	309	142	150	210	269	487	487	199	243	201	244
High	18%	35%	62%	77%	3	0	3%	1%	3	-1	53%	73%
	252	252	97	108	102	166	348	348	97	152	98	153
Total	37%	48%	84%	88%	3	0	6%	3%	3	-2	49%	66%
	1,427	1,255	677	591	1,065	1,081	2,121	2,121	1,025	987	1,033	993
p-value on means test	0.00***	0.00***	0.00***	0.00***	0.20	0.11	0.00***	0.00***	0.49	0.00***	0.06*	0.00***

***p<.01, **p<.05, *p<.10.

Table 4. Multivariate Determinants of Sexual Behaviors and Experiences

	Ever Had Sex			Age Difference [a] First Sex Partner			Ever Forced To Have Sex	Ever Traded Sex[b]
	Female	Test F=M	Male	Female	Test F=M	Male	Female	Female
	Hazard ratio		Hazard ratio	Coef-ficient		Coef-ficient	Odds ratio	Odds ratio
Age (years)	0.99*	*	1.02	0.07**	***	-0.11***	1.10***	1.23***
Colored (v. African)	0.34***		0.70	0.21		1.11***	0.44	dropped
Asian (v. African)	0.28*		0.39***	1.06		0.78***	0.10***	2.73
White (v. African)	1.01***	***	0.48***	1.14		1.07*	0.63	dropped
Low-mid wealth (v. low wealth)	0.80***		0.88	-0.29		-0.03	0.32**	0.91
Middle wealth (v. low wealth)	0.71***		0.80*	-0.08		-0.30	0.41*	0.13***
High-mid wealth (v. low wealth)	0.68***		0.87	-0.24		-0.01	0.47**	0.22**
High wealth (v. low wealth)	0.60***		0.83	0.07		0.17	0.20***	0.06**
Household size	1.00		1.01	0.02		0.01	0.99	1.08
Household education some secondary (v. primary or less)	0.87		1.10	0.15		0.27*	0.96	1.78
Household education secondary, no matric (v. primary or less)	0.88		1.05	0.37		0.40	1.17	1.60
Household education matric secondary (v. primary or less)	0.66**		0.89	0.05		-0.11	0.18**	0.44
Household education post-secondary (v. primary or less)	0.58*	**	1.32	0.07		-0.62	1.75	dropped
Mother not resident (v. resident)	1.22*		1.00	0.27		0.06	1.56	1.28
Mother dead (v. resident)	1.15		1.40*	0.27		0.37*	0.58	1.18
Father not resident (v. resident)	1.16		1.12	0.06		-0.24	1.13	1.38
Father dead (v. resident)	1.34***		1.34***	0.26		0.01	0.64	2.20
Urban (v. rural)	1.16		1.38**	-0.25		0.19	2.04	dropped
Constant	na		Na	1.79		1.24	na	na
Observations	2,113		1,838	1,064		1,077	2,119	1,873

***p<.01, **p<.05, *p<.10. [a] In the female regression, a positive sign raises male relative to female age. In the male regression, a positive sign raises female relative to male age. [b] The categories colored, white, household post-secondary education, and rural perfectly predict no sexual exchanges.

Table 5. Multivariate Determinants of Sexual Behaviors

	Age Difference[a] Most Recent Sex Partner			Used a Condom At Last Sex			Had More Than One Sex Partner in 12 Months Before Survey		
	Female	Test F=M	Male	Female	Test F=M	Male	Female	Test F=M	Male
	Coef-ficient		Coef-ficient	Odds ratio		Odds ratio	Odds ratio		Odds ratio
Age (years)	0.06*	***	-0.38***	0.89***		0.94	0.90		1.00
Colored (v. African)	0.83		0.99	0.25***	**	3.92	12.71***		1.81
Asian (v. African)	0.04		0.36	0.35***	*	1.02	0.83		0.43*
White (v. African)	-0.96		0.48	1.02		1.29	19.80***	**	0.97
Low-mid wealth (v. low wealth)	-0.29		-0.02	1.45		0.85	0.40**		0.59*
Middle wealth (v. low wealth)	0.00		0.11	1.87**		1.58*	0.39**		0.66
High-mid wealth (v. low wealth)	-0.37	*	0.35*	1.57		1.35	0.25***	*	0.73
High wealth (v. low wealth)	-0.24	*	0.66***	1.87**		0.90	0.10***	**	0.76
Household size	-0.06***		-0.04***	1.02		0.96	1.00		1.05*
Household education some secondary (v. primary or less)	-0.08		-0.03	1.48**		1.95***	1.06		0.77
Household education secondary, no matric (v. primary or less)	0.12		-0.21	1.98**		3.14***	1.72		0.92
Household education matric secondary (v. primary or less)	-0.08		-0.09	1.95*		2.83**	0.72		1.85**
Household education post-secondary (v. primary or less)	-0.12		0.16	4.92**		5.55*	0.52		1.45
Mother not resident (v. resident)	-0.41*		0.02	1.10		1.52	0.83		0.69
Mother dead (v. resident)	-0.23		0.09	0.94		0.69	1.30		0.92
Father not resident (v. resident)	0.72***	***	-0.21	0.83		0.39***	1.72		1.36
Father dead (v. resident)	0.69***	*	0.13	0.86		0.66	1.44		1.07
Urban (v. rural)	0.68		0.16	1.13		1.51	1.60		1.10
Constant	1.88		5.60	na		Na	na		na
Observations	1,024		982	1,032		990	1,114		1,121

***p<.01, **p<.05, *p<.10. [a] In the female regression, a positive sign raises male age relative to female age. In the male regression, a positive sign raises female age relative to male age.

Table 6. Sexual Behaviors and Experiences by Gender and Household Wealth Quintile

Wealth Quintile	More than one partner last 12 mos.		Secondary abstinence last 12 mos.		Discussed avoiding pregnancy with last partner		Discussed condom use with last partner		Discussed avoiding HIV with last partner		Ever been Pregnant	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female 14-19 yrs.	Female 20-24 yrs.
Low	11.0% 340	36.0% 233	4.0% 340	13.0% 233	74.8% 325	74.8% 202	74.2% 325	76.7% 202	76.3% 325	75.2% 202	29.0% 302	74.0% 176
Low-Mid	8.0% 240	36.0% 238	10.0% 240	13.0% 238	84.8% 217	70.7% 205	84.3% 217	74.6% 205	83.9% 217	75.6% 205	20.0% 259	61.0% 127
Mid	7.0% 209	37.0% 206	8.0% 209	10.0% 206	85.5% 193	85.5% 186	84.5% 193	86.0% 186	82.9% 193	90.3% 186	17.0% 274	59.0% 135
High-Mid	6.0% 221	39.0% 279	10.0% 221	13.0% 279	85.4% 199	75.2% 242	84.4% 199	81.9% 243	83.4% 199	78.6% 243	11.0% 340	49.0% 142
High	8.0% 105	24.0% 166	7.0% 105	8.0% 166	90.8% 98	73.2% 153	89.8% 98	81.7% 153	83.7% 98	78.4% 153	4.0% 252	26.0% 97
Total	8.0% 1,115	35.0% 1,122	7.0% 1,115	12.0% 1,122	82.5% 1,032	75.8% 988	81.7% 1,032	80.1% 989	81.2% 1,032	79.5% 989	16.0% 1,427	57.0% 677
p-value on means test	0.13	0.02**	0.10*	0.30	0.00***	0.01***	0.00***	0.04**	0.11	0.00***	0.00***	0.00***

***p<.01, **p<.05, *p<.10.

Table 7. Multivariate Determinants of Sexual Behaviors

	Did Not Have Sex in 12 Months Before Survey (among sexually active)			Discussed Ways to Avoid Pregnancy with Last Sex Partner			Discussed Condom Use with Last Sex Partner		
	Female	Test F=M	Male	Female	Test F=M	Male	Female	Test F=M	Male
	Odds ratio		Odds ratio	Odds ratio		Odds ratio	Odds ratio		Odds ratio
Age (years)	1.08	***	0.85***	1.00	***	1.23***	0.91***	***	1.26***
Colored (v. African)	Dropped		dropped	1.06		0.40***	0.40		0.75
Asian (v. African)	0.25**		0.63	0.53		0.24***	0.48*		0.59
White (v. African)	1.82		0.36	0.78		0.37	0.21**	*	2.90
Low-mid wealth (v. low wealth)	2.18		1.12	2.46**	**	0.74	2.87***	***	1.03
Middle wealth (v. low wealth)	1.36	**	0.65	3.33***		2.38***	2.58***		2.69***
High-mid wealth (v. low wealth)	2.54*		1.14	2.07		1.23	1.51		1.73**
High wealth (v. low wealth)	1.89		0.62	6.26	***	1.08***	4.10***	*	1.14
Household size	0.96		0.93*	1.01		0.95**	0.99		0.95
Household education some secondary (v. primary or less)	0.88		1.16	1.03		0.91	0.84		0.91
Household education secondary, no matric (v. primary or less)	0.17**	**	0.93	1.09		1.95*	1.47		1.42
Household education matric secondary (v. primary or less)	0.19**	*	1.02	2.44		2.69**	21.58***		5.16**
Household education post-secondary (v. primary or less)	2.06		2.05	0.25*	*	1.97	1.16		1.24
Mother not resident (v. resident)	0.96		0.67	0.54***		0.46*	0.93		0.61
Mother dead (v. resident)	0.39*		0.49*	0.51**		0.30***	0.58*		0.44**
Father not resident (v. resident)	0.53		1.32	1.10		0.75	0.59		0.87
Father dead (v. resident)	0.77		0.48***	0.79		0.83	0.46**		0.80
Urban (v. rural)	1.67		0.52	3.77		0.81	1.29		1.27
Observations	1,099		1,105	1,031		988	1,031		989

***p<.01, **p<.05, *p<.10.

Table 8. Multivariate Determinants of Sexual Behaviors and Outcomes

	Discussed Ways to Avoid HIV with Last Sex Partner			Ever been pregnant
	Female	Test F=M	Male	Female
	Odds ratio		Odds ratio	Hazard ratio
Age (years)	1.01		1.19***	1.06**
Colored (v. African)	1.02	**	0.13***	0.55
Asian (v. African)	0.16***		0.24***	0.23***
White (v. African)	0.09***		0.13***	0.29**
Low-mid wealth (v. low wealth)	1.48**		1.32	0.85
Middle wealth (v. low wealth)	1.30	*	4.19***	0.79*
High-mid wealth (v. low wealth)	1.65		1.68*	0.65***
High wealth (v. low wealth)	2.93**		1.26	0.64
Household size	0.93***		0.92***	1.00
Household education some secondary (v. primary or less)	1.03		1.46	0.89
Household education secondary, no matric (v. primary or less)	0.79	**	3.65**	0.67*
Household education matric secondary (v. primary or less)	2.29		5.15***	0.57**
Household education post-secondary (v. primary or less)	16.02**	***	0.59	0.26**
Mother not resident (v. resident)	0.53***		0.47*	1.15
Mother dead (v. resident)	0.66*		0.71	1.20
Father not resident (v. resident)	0.89		1.26	1.10
Father dead (v. resident)	0.45*		0.77	1.40**
Urban (v. rural)	1.16		0.49	1.08
Observations	1,031		989	2,118

***p<.01, **p<.05, *p<.10.

Table 9. Number of Media Sources for Information about Family Planning in Month Before Survey (Range is 0-4)

Means by Wealth Quintile				Multivariate Results			
	Female	Male			Female	Test F=M	Male
					Coef-ficient		Coef-ficient
Low	0.9	1.5		Age (years)	0.06***		0.09***
	485	352		Colored (v. African)	0.38		-0.05
Low-Mid	1.1	1.6		Asian (v. African)	0.31		0.33
	389	356		White (v. African)	-0.08		-0.15
Mid	1.3	1.9		Low-mid wealth (v. low wealth)	0.53***	***	0.07
	412	331		Middle wealth (v. low wealth)	0.53***		0.34***
High-Mid	1.4	1.8		High-mid wealth (v. low wealth)	0.74***	***	0.18
	485	462		High wealth (v. low wealth)	0.90***	***	0.15
High	1.7	1.7		Household size	-0.01	*	0.03***
	349	360		Household education some secondary (v. primary or less)	0.37***	***	-0.16
Total	1.3	1.7					
	2,120	1,861		Household education secondary, no matric (v. primary or less)	0.16		0.21
p-value on means test	0.00***	0.00***					
				Household education matric secondary (v. primary or less)	-0.22		-0.06
				Household education post-secondary (v. primary or less)	0.21		-0.02
				Mother not resident (v. resident)	-0.12		-0.09
				Mother dead (v. resident)	-0.45**		-0.16
				Father not resident (v. resident)	0.11		0.00
				Father dead (v. resident)	-0.23**	*	0.17
				Urban (v. rural)	-0.35	**	0.66*
				Constant	-0.19		-1.01
				Observations	2,119		1,860

***p<.01, **p<.05, *p<.10.

NOTES

1 In this manuscript the term "young people" refers to individuals aged 15–24 or 14–24 years of age.

2 Using the "expanded" definition of unemployment, these rates were 59 and 37 percent, respectively. According to Statistics South Africa (2001), the official definition includes those who (a) did not work during the seven days prior to the interview, (b) want to work and are available to start work within a week of the interview, and (c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview. The expanded definition excludes (c). Both rates are often quoted in South Africa since the lack of job opportunities in the formal sector has discouraged many from actively searching for work. Moreover, spatial and zoning regulations against informal business activity and lack of credit and training are reported to keep many from entering the informal sector (Kingdon and Knight 2004).

3 These estimates are based on predictions from antenatal clinic and sentinel site data. The figures quoted are averages of high and low estimates for females and males aged 15–24 years given in UNICEF-UNAIDS-WHO 2002.

4 As of 2001, South Africa had a population of 43.8 million, of whom 9 million were aged 15–24. If 18.2 percent of these were infected, the total number of youth infected in South Africa was 1.6 million. Of the 6.119 billion world population in 2001, 1.075 billion were young people. If 1.1 percent of these were infected, the total number of young people infected globally was 11 million. UNAIDS (2003) estimates that at the end of 2003, the *region* of southern Africa accounted for 30 percent of all people living with HIV/AIDS worldwide but only 2 percent of the world's population.

5 I am indebted to Jane Chege for this reference.

6 The first stage of sampling involved the random selection of 120 census enumeration areas within the two districts. The second stage involved the division of census enumeration areas into sections of approximately equal predetermined size, which were based on expected response rates according to the racial predominance of individual census enumeration areas. According to census data, it was expected that 33 households in African areas would need to be visited to yield 30 adolescents, 72 households in Asian areas, and 150 households in white areas. One segment was then randomly selected and fieldworkers were instructed to visit every household within the section and interview every willing adolescent between the ages of 14 and 22. The number of segments per census enumeration area varied from one to seven, with two being the average number of segments drawn per census enumeration area. Successful interviews were conducted in 117 of the originally selected 120 census enumeration area segments.

7 See Magnani et al. (2003) for an evaluation of the school-based life-skills curriculum.

8 Of the 4,174 young people interviewed in 2001, 194 did not have completed household surveys to which they could be matched. Their relative socioeconomic status is therefore not measured and they are not included in the analysis.

9 Regressions using per capita household expenditure quintiles were run, as were regressions with total household expenditure quintiles. The results presented here for wealth quintiles are very similar to those using each of these two expenditure specifications.

10 It is possible that some of the reports of fathers being deceased are from children (especially those who are firstborn to mothers who were not married at the time of the child's birth) whose biological fathers played little or no role in their lives.

11 The 1998 DHS for South Africa defines economic abuse as a woman's partner regularly not providing money for food, rent, or bills while having money for other things. The DHS also indicates that 19 percent of women had experienced economic abuse in the year before the survey, with the rates being higher among women who are African, aged 15–24, poorly educated, living in a rural area, or residing in KwaZulu-Natal or the Free State.

12 The wording of questions often varies from study to study. Furthermore, in the DHS surveys, the questions did not differentiate whether money or gifts were given or received; the assumption made in the PRB report was that young women are generally the recipients of money or gifts in exchange for sex and that young men are generally the givers of money or gifts in exchange for sex. While this is most often true, it is not universal (Richter 1996; Meekers and Calvès 1997; UNAIDS/Panos 2001).

13 In a 1991–93 study of 219 women in Kwa-Zulu-Natal (mean age 26 years, 88 percent sexually active, and only 25 percent married), 97 percent of sexually active respondents reported that they received money from their sex partners (Abdool-Karim 2001).