HIV/AIDS Knowledge, Sexual Context, and Contraceptive Use at Sexual Debut among Urban South African Youths

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ABSTRACT

Prior research has been concerned with the relatively weak association between HIV prevention-related awareness and contraceptive use among South African youths. One potential explanation concerns the ability of youths' to effectively negotiate contraceptive use, especially girls. Using the Cape Area Panel Study, this study examines whether HIV prevention-related knowledge prior to first sexual intercourse and characteristics of youths' first sex partner predict early sexual initiation and contraceptive use at first sex. Findings suggest that age discordance at first sex halved the likelihood of using a condom at sexual debut for girls, whereas similar to previous research, HIV prevention-related knowledge is not significantly related to early sexual debut or contraceptive use. This study extends prior research by using longitudinal data to predict behavior based on HIV knowledge prior to sexual debut and exploring alternate pathways, such as relationship power dynamics that may influence the ability to effectively negotiate contraceptive use.

INTRODUCTION

South Africa has one of the highest rates of HIV/AIDS prevalence in the world, with 5.2 million people living with the virus, approximately 10.5% of the population (South Africa Statistics 2011). Prevalence among youths and adults is particularly high at around 17% for 15-49 year olds (South Africa Statistics 2011). In response, over the past two decades HIV/AIDS awareness campaigns and prevention programs have been launched by a variety of governmental and non-governmental organizations, spreading information about the virus and ways to avoid contracting or transmitting HIV.

Research has evaluated the effect of these programs, both in the transmission of HIV/AIDS knowledge and in people's efficacy enacting prevention methods. For example, Anderson and Beutel (2007) found in a sample of South African youths that almost all respondents were able to list at least one type of method for preventing HIV/AIDS infection, with the majority being able to name at least two methods. Using these same data, there is also evidence that perceived HIV risk is predictive of delayed sexual debut among female youths (Anderson, Beutel, and Maughan-Brown 2007). Overall, however, much of the research finds that the high level of awareness and knowledge of HIV prevention among South African youths does not typically translate into behavioral changes (Hartell 2005). Therefore, exploring other potential pathways that influence contraceptive use (specifically methods that are most effective in HIV prevention) is important for strengthening the efficacy of current HIV/AIDS prevention programs. One such potential explanation is the ability of young people to effectively negotiate contraceptive use, especially girls. For example, qualitative research on the influence of gender roles on sexual health among South African youth suggest that the persistence of gender ideals reinforces gendered behavioral double-standards which leads to poor sexual negotiation dynamics (Varga 2003). Similarly, many first sexual encounters for young

women involve being forced or feeling tricked into the experience (Jewkes and Abrahams 2002). In these cases, negotiations surrounding effective contraception and disease protection may be particularly ineffective or impossible (Bruce, Temin, and Hallman 2012).

This study examines whether HIV prevention knowledge *prior* to first sexual intercourse and characteristics of the first sex partner predict condom and other contraceptive use at first sex. By doing so, this research extends previous research on South African youths' risky sexual behavior in two important ways. First, longitudinal data allow us to investigate HIV prevention *prior* to sexual debut, as opposed to previous studies that look at HIV prevention knowledge and sexual behavior simultaneously. This is advantageous in several ways, but primarily, using longitudinal data among those not yet sexually initiated allows us to test knowledge gained before sex and theoretically, the knowledge they have available to put into practice. Including youths who are already sexually active could bias results because youths who see themselves as having already been exposed to the virus may be more likely to continue risky sexual behaviors. Second, we test whether the context of the youths' first sex experience influences contraceptive use, particularly among girls which prior research has show are particularly vulnerable to sexual coercion and at risk of forced encounters (Jewkes and Abrahams 2002; Pettifor, et al. 2009; Population Council 2008). Evaluating the context of the first sex experience recognizes that contraceptive use often requires negotiation, which may affect the ability for youths to follow through on their contraceptive knowledge. We use the Cape Area Panel Study (CAPS), an exceptionally rich longitudinal data set, which collects a variety of information on individual, family, household, and neighborhood characteristics among a representative sample of youth in urban Cape Town.

BACKGROUND

HIV knowledge and sexual behavior

Despite high levels of HIV/AIDS prevalence, research generally has found weak support for a relationship between HIV/AIDS knowledge and contraceptive use in South Africa (Hartell 2005). Several studies using the Cape Area Panel Study (CAPS) have found high levels of HIV/AIDS prevention knowledge, with almost all of the study respondents able to name at least one type of method for preventing HIV infection, and on average, able to name two (Anderson and Beutel 2007). More education, being female, black (versus coloured or white), and having already had sex increased the likelihood of naming more prevention methods. Likewise, other studies report that although South African youths may have more satisfactory HIV knowledge in some areas (such as knowing condoms are a form of prevention), they are much less knowledgeable in others (e.g., identifying HIV transmission myths as such, or knowledge of the origins of the disease), which may contribute to the effectiveness of HIV prevention programs among adolescents (Peltzer and Promtussananon 2005; Pettifor, et al. 2004).

Overall, studies have found that this knowledge does not appear to translate into behavioral changes (Hartell 2005). For example, a study of over 200 black, Cape Town youth found that, despite high levels of knowledge, a majority of both men (68%) and women (56%) still reported engaging in HIV-related risky sexual behaviors (Simbayi, Kalichman, Jooste, Cherry, Mfecane, and Cain 2005).

Perceived HIV risk, personal experience, and sexual behavior

A potential explanation for the weak relationship between HIV/AIDS prevention knowledge and risky sexual behaviors is that young South Africans may not consider themselves at high risk of HIV/AIDS contraction or believe they do not have personal exposure to people with the disease, and

hence, may not see HIV/AIDS prevention techniques as relevant to them. For example, Anderson and colleagues (2007) examined the correlation between perceived HIV risk, knowing someone (living or deceased) with HIV/AIDS, and delayed sexual debut, and found that higher perceived HIV risk was associated with delayed sexual initiation, and that sexual experience was related to a higher perceived risk of HIV infection, but only among girls. One explanation posited for this association is that females may feel less control over contraceptive use once they have become sexually active, compared to their male counterparts. Surprisingly, however, knowing someone with HIV/AIDS was correlated with an increased likelihood of sexual debut (Anderson, et al. 2007). Similarly, a study of sexually-active South African youth from the KwaZulu-Natal province found that those respondents who considered themselves at medium or high risk of HIV infection were less likely to use a condom during sex than those who saw themselves at no risk, suggesting because they felt their previous unprotected sex had already exposed them to the virus and hence, using contraception to protect against HIV was redundant (Maharaj 2006). As highlighted here, a limitation of these studies is the temporal ordering, where concurrently measuring HIV knowledge, risk factors, and contraceptive use limits the ability to understand how HIV knowledge may affect sexual behavior, as past sexual behavior may alter the propensity for youth to follow through on prevention knowledge. This study will address these limitations through the use of longitudinal data and measurement of HIV knowledge and risk factors prior to sexual debut.

Relationship dynamics

Another potential pathway which can affect contraceptive use recognizes that the decision to use contraceptives is often made between two people and/or influenced by a sexual partner. A review of research on sexual behavior among South African youth revealed that HIV risky behavior is influenced at three different levels; that is, not just by individual and cultural/structural factors, but

also by interpersonal relationships (Eaton, Flisher, and Aaro 2003). Within the South African context, structural marginalization (such as persistent poverty) and gendered social norms are influential in maintaining women's subordination within sexual relationships. For example, qualitative research examining the influence of gender roles and ideology on adolescent childbearing among youth in the KwaZulu-Natal province found that gender ideals were centered on factors that reinforced poor sexual negotiations (Varga 2003).

Sexual behavior and contraceptive use, then, is often influenced by gender inequalities within relationships that affect interactions between partners (Blanc and Wolff 2001; Shepard 2004; Pulerwitz and Baker 2007). Research both in South Africa and elsewhere has explored the influence of partners' characteristics on risky sexual behavior, and specifically, how power dynamics within relationships affect contraceptive practices. In one study of American urban young people aged 14–19, Gutiérrez and colleagues (2000) found that young women reported having less power in relationships than young men did. These power inequalities can affect contraceptive practices, with studies investigating young South African women revealing feelings of lack of control over sexual behavior associated with inconsistent condom use and increased risk of HIV infection (Pettifor et al. 2004), and lack of communication with a partner about condom use and STD risk correlated with the willingness to use condoms (Hendriksen et al. 2007; Reddy et al. 2000).

An important way that power manifests itself is in sexual coercion. Coercive sex is particularly important in the South African context where it is estimated that a third of adolescent girls experience forced sexual initiation (Jewkes and Abrahams 2002). Studies examining the role of sexual coercion and sexual behaviors among young adults have found associations between coerced sex and early sexual debut and unprotected sex, especially among girls (Population Council 2008). For example, one study investigating predicators of early sexual initiation and contraceptive use

among young South Africans found that coerced sex was related to early sexual debut for men and women, and current condom use among men and women except women who also had an early sexual debut (Pettier, et al. 2009). Importantly, poor South African young women are particularly at risk of forced sex, in addition to a lesser likelihood of discussing safe sex practices with a partner (Hallman 2005).

Another way that relationship power inequalities exist, particularly among young people, concerns age. Social and demographic heterogamy within a relationship, such as age disparities, can influence relationship dynamics, creating within-dyad power inequalities. Age may be a particularly important factor among South African adolescents, where school grade repetition is high and, hence, youths are exposed to a wider age range of peers throughout their teenage years (Lam, Ardington, and Liebbrant, 2011; Marteleto et al. 2008). One study of South African women examining correlates between relationship factors and discussions with partners about contraceptive use found that women in relationships who had a substantial age difference from their partner were less likely to discuss HIV with them (Jewkes, Levin, and Penn-Kekana 2003). Likewise, another study investigated black South Africans found age discordance to decrease the likelihood of condom use (Burgard and Kusunoki 2009). Research on young US women has found that age differences within relationships were correlated with increased risk of sexual debut (Kaestle, Morisky, and Wiley 2002) and decreased contraceptive use (Ford, Sohn, and Lepkowski 2001; Manning, Longmore, and Giordano 2000).

This study, then, extends research on HIV/AIDS prevention knowledge and young South African sexual behavior by examining not just HIV-related factors, but also incorporating relationship-context. Specifically, we investigate whether being coerced or forced into sexual debut and the age-difference with the first sexual partner is negatively associated with contraceptive use

during first sex. In addition, we focus on youths who are not sexually active when their HIV/AIDS knowledge, perceived risk, and personal experience is recorded and measuring subsequent sexual debut experience information collected in follow-up interviews. In this way we address some of the limitations present in other studies where youths' prior sexual behavior may affect how HIV-related factors operate to affect current and future contraceptive use.

METHODS

Data and sample

We use the Cape Area Panel Study (CAPS) to explore how HIV/AIDS knowledge and first sexual relationship factors influence contraceptive use at sexual debut. This longitudinal study consists of approximately 4,800 randomly selected 14-22 year olds living in metropolitan Cape Town, South African, in 2002. The sample is representative of urban Cape Town adolescents, and were selected using a stratified two-stage sample that selected first from sample clusters and second, through households within these clusters (Lam et al., 2008). We limit our sample to young black and coloured adults aged between 14 and 17 years old who stated they had not had sexual intercourse at the first wave (collected in 2002). Because the mean age at sexual debut among the total CAPS participants was approximately 17 years old for girls and 16 years old for boys, we limited our sample to younger, school-aged respondents (those 17 years old and younger) to attempt to minimize potential selection issues that may arise from including older virgins who have passed the mean age of first sex.[1]

We exclude white respondents from our sample due to attrition and response issues also noted in previous research using the CAPS data (for example, Marteleto et al. 2008). In addition, we exclude 18 respondents who identified as some 'other' race. Finally, 223 youths who were virgins at

[1] This sample selection decision appears to have little affect on the robustness of our overall findings.

the first wave were either lost to attrition or had missing sexual debut information in the follow-up waves. Our analyses suggest that these youths were less likely to be born in Cape Town (74% versus 96%) and less likely to be living with their mother at the first wave (74% versus 79%) or their father (47% versus 52%) compared to youths with complete follow-up data (see appendix). Overall we believe the exclusion of these missing respondents means our estimates predicting early sexual debut and contraceptive use are likely more conservative given the characteristics of the respondents lost to attrition and the association of these characteristics with our key outcomes. The final sample includes 1,078 black and coloured youths (638 females, 440 males).

Information on HIV/AIDs knowledge was collected in the first wave, whereas data on sexual experience and contraceptive use was collected from three subsequent waves (2003/2004, 2005, and 2006). The Stata suite of *mi* commands were used to estimate missing data (StataCorp 2011). Overall, only 1.6% of these data were imputed. Finally, sample weights are used and robust standard errors are estimated in the multivariate analyses to account for the complex survey sampling technique.

Variables

Dependent variables. Our key dependent variables are two dummy variables indicating whether the respondent has sexual intercourse (as stated by the respondent in follow-up interviews), and if so, whether they used a condom during their first sexual intercourse experience. We also investigate whether any form of contraception was used, such as oral contraceptives or female condoms. Only 4% and 17% of young men and women, respectively, who have sex by the end of the study period, however, report using another form of contraception at sexual debut (in addition to condoms or exclusively), with the majority reporting female oral contraceptives.

Independent variables. The primary independent variables fall into two areas: 1) HIV/AIDS knowledge and personal experience with people with HIV/AIDS, and 2) characteristics of the respondents' first sex partner and episode. Three groups of variables were created to capture the youths' HIV/AIDS prevention knowledge, their own perceived risk, and their personal experience with the disease. At the study's first wave, respondents are asked to list ways in which they can protect themselves from contracting HIV/AIDS. Based on the most common answers, three mutually-inclusive binary variables were created to identify whether the youth mentioned condoms, abstinence, or something related to limiting sexual partners as a form of prevention. In addition, a binary variable indicated whether the youth said they thought they were at any risk of contracting HIV/AIDS. A final HIV/AIDS binary variable identified whether the respondent knew of someone who had (or who had died of) HIV/AIDS.

In follow-up interviews, when respondents indicated that they have had their first sexual intercourse experience, youths were then asked a series of questions about their first sex partner and other contextual factors. We created two binary variables to capture both characteristics of the first sex partner and the sex context. First, as an indicator of potential power differentials within the relationship, we created a dummy variable that identified whether their sex partner was two years or older (for females) or two years or younger (for males). We reverse coded this variable for young men because very few men (7%) indicated having sexual debut partners two or more years older than themselves, and vice versa, with very few young women (0.8%) indicating having a much younger sexual debut partner. Although a two-year difference may sound arbitrary, two years is likely a good benchmark to examine power dynamics as girls tend to be more mature than boys during adolescence (results were not sensitive to larger age differentials). The first sexual debut context was operationalized through a dummy variable indicating whether the respondent reported

being tricked, persuaded, forced into, or raped at their first sexual episode. Unfortunately, relationship to first sex partner was not included in this study because of lack of consistency across waves in this measurement in the CAPS data (including no survey question on relationship in wave 4) and little variation in relationship status (i.e., the majority of respondents stated their first sexual experience was with a boyfriend or girlfriend, with only four men and 13 women indicating their sexual debut was with a husband or wife).

A set of measures were created to control for individual, family, and community-level characteristics that may be confounded with sexual debut and contraceptive use. Controls are measured at the first wave in the analyses predicting sexual debut but measured at the time of sexual debut in the analyses predicting contraceptive use. In this way we hope to use controls more proximate to the actual sexual debut experience.

Controls at the individual-level include age, race (black or coloured), and education (whether attending school at first wave/attending school at the time of sexual debut). Family characteristics included parental presence, family socioeconomic status (SES), and possible migratory factors. Parental presence was measured as two dummy variables, with the first variable capturing whether the youth lived with their mother and the second identifying whether the youth lived their father. Maternal education, a proxy for family SES, is operationalized as a continuous measure of years. A dummy variable is included to identify whether the respondent was born in Cape Town.

Finally, two variables were created to measure community characteristics. First, one dummy variable indicates whether the respondent lived in an impoverished community at the first wave (whether more than 30% of the households within the community lived in poverty, which is approximately the mean community poverty experienced among CAPS youth). The second dummy

indicators whether the respondent spent most of their lives in an urban area (versus in a rural or some 'other' area).

Table 1 presents a description of the study sample. Youths were on average 15.4 years old at the first wave, with just over three-quarters of the youth in the sample identifying as coloured. The majority of the sample were residing with their mother (79%) whereas just over half also lived with their father (52%). Over 90% of the sample were still attending school at the first wave, and most were born in Cape Town (86%).

Analytic plan

We begin by describing the HIV/AIDS knowledge and sexual experience of our sample separately by gender. These bivariate analyses provided some insight into the experiences of young Cape Town youth and highlight associations between our two primary areas of interest. Next, using logistic regression we estimated the odds likelihood of having sex during our study period. We did this primarily to explore the possibility that abstinence may be a HIV prevention strategy among many youth and may speak to issues of selectivity among the sample who do and do not have sex by the end of the study. Finally, we examined condom use, specifically, for both female and males, and contraceptive use more generally for females, at sexual debut. We stratified the analyses by gender given the gendered pathways through which young people experience sexual initiation. This approach is also consistent with other studies on sexual debut in South Africa (e.g., Anderson, et al., 2007; Marteleto et al., 2008; Tenkorang et al., 2009). Primary analyses using gender interaction terms provided support for this approach.

RESULTS

Bivariate analyses

Table 2 displays HIV/AIDS knowledge, perceived risk, and personal experience measured at the first wave by gender, and whether the youth has sex by the end of the study period. In regards to knowledge of HIV/AIDS prevention, there was not a statistically significant difference by gender and/or sexual experience in reporting condom use as a prevention strategy (approximately 80% of all youth). Young women who did not have sex by the end of the study period were more likely than other youths to report abstinence as a prevention strategy (57% versus approximately 40% among all young men and 49% of women who have sex by the end of the study period). Interestingly, women who do not have sex by the end of the study period are more likely than women and men who do have sex to consider themselves at-risk of contracting HIV (39% of women who do not have sex compared to 27% and 31% of women and men, respectively, who do have sex by the end of the study period). Finally, women who do have sex by the end of the study period are more likely to report knowing someone, living or deceased, with close to one-third of these women reporting know someone infected with HIV/AIDS compared to approximately 17% of women who do not report having sex by the end of the study period and the sample men.

Table 3 presents sexual debut experience among youths who had sex by the end of the study period. In total, 57% of the female sample and 56% of the male sample report having sex by the end of the study period, with the average age at sexual debut 17.2 years and 16.6 years among women and men, respectively. Both women and men reported similar rates of contraceptive use at sexual debut, with 71% and 75% of women and men, respectively, reporting using any type of contraception at sexual debut. The most prevalent form of contraception was male condoms (approximately s63% and 73% among women and men, respectively), whereas women were significantly more likely than men to report using some other form (typically oral contraceptives) and two or more forms of contraception. Two-thirds of women reported that their first sex partner

was two or more years older than them, whereas only 17% of men reported that their sexual debut partner was two or more years younger. Finally, 13% of women described feeling persuaded, tricked, forced, or (in a handful of cases) raped at their sexual debut compared to only 6% of men.

Multivariate analyses

Using logistic regression, Table 4 examines the association between HIV/AIDS knowledge, perceived risk, personal experience and sexual debut by gender. Model 1 includes the control variables, whereas Model 2 adds the key HIV/AIDS variables. Among the control variables, age and race (being black versus coloured) are associated with an increased likelihood of sexual debut by the end of the study period. For example, young black women over five times more likely to have had sexual intercourse by the end of the study period compared to coloured women, and black men close to four times more likely than coloured men. For men only, living with their mother and/or father at wave 1 is associated with a decreased likelihood of sexual debut. Turning to model 2, among women only one variable appears to significantly predict the likelihood of having sex by the end of the study period, with women who know or knew someone with HIV/AIDS 75% more likely to have experienced their sexual debut by the end of the study period. Interestingly, whereas a greater proportion of women who did not have sex by the end the study period identified abstinence as an HIV prevention technique, reporting abstinence as a prevention technique was not a significant predictor of sexual debut in the presence of other control variables. Among men, none of the HIV/AIDS variables were significant predictors of sexual debut.

In light of these findings, Table 5 restricts the analyses predicting contraceptive use at sexual debut to only those who have sex by the end of the study period. This sample was more likely to black and older compared to the sample of all youths who were virgins at wave 1. Similar to the analyses predicting sexual debut, model 1 includes only the control variables and model 2 includes

the key HIV/AIDS variables. Model 3 adds information on the sexual debut context; specifically, the age disparity between the youth and their sexual debut partner and whether the first sex experience was consensual. We present all models for the female sample (Panel A), whereas we present only the third model for male sample due to largely insignificant results (Panel B).

Similar to sexual debut, in Model 1 age and being black was statistically associated with an increased odds likelihood of using a male condom at sexual debut among young women, with black women five and half times more likely to use condoms than coloured women. Maternal education and attending school at the time of sexual debut is also significantly related to the likelihood of condom use at sexual debut. Model 2 adds the key HIV/AIDS variables, measured prior to sexual debut. Consistent with previous studies, there appears to be no significant association between HIV/AIDS prevention knowledge, whether the youth perceives being at risk of contracting HIV, and whether the youth knows or knew someone with HIV/AIDS and condom use at sexual debut. Interestingly, the significant association between maternal education and school attendance and contraceptive use in the first model attenuates, suggesting that young women's HIV/AIDS knowledge may operate indirectly through their mothers' human capital and their own education. This suggests that maternal education and being enrolled in school may be important mechanisms through which young women gain knowledge about HIV prevention strategies. For example, better-educated mothers may be more knowledgeable about HIV prevention (possibly through their own formal schooling) and may be more likely to convey that information to their children, whereas being enrolled in school may expose young women to more formal HIV prevention programs or they may discuss prevention in their peer groups within their school setting. Overall, these factors may say something more about the intergenerational transmission of socioeconomic status and selection of respondents attending school (e.g., more risk adverse with potentially 'more to lose').

Model 3 adds measures about the context of sexual initiation. Those young women whose sexual debut partner is two or more years older than them are approximately 50 percent less likely to use a condom at sexual debut compared to women whose sexual debut partner is around the same age or younger. Interestingly, whether the respondent felt persuaded, tricked, forced, or raped at their sexual debut was not a significant predictor of condom use.

Table 5 also includes results for model 3 predicting any contraceptive use among women (Panel A) and condom use among men at sexual debut (Panel B). The findings for any contraceptive use among women (model 4) are similar to condom use at sexual debut, specifically, with age, race, and the age of the sexual debut partner all significantly associated with contraceptive use at sexual debut.

In addition, maternal education and school attendance are significant predictors of any contraceptive use at sexual debut among young women. The final column in Table 5 presents model 3 odds ratios predicting condom use at sexual debut among young men. Age and school attendance were positively associated with condom use at sexual debut, whereas living in an impoverished community decreased the likelihood of condom use at sexual debut by 80% compared to young men who did not live in an impoverished community.

DISCUSSION

This study extends prior research on contraceptive use in sub-Saharan Africa by examining whether and how the context within first sexual intercourse takes place may change the efficacy with which young adults use their contraceptive knowledge. We find that among young women, older sex partners decreased the likelihood of using condoms at sexual debut. Unlike other studies which have examined age discordance with a focus on large discrepancies (e.g. Burgard and Kusunoki, 2009),

we find that even a two-year disparity may have important implications for effective contraceptive use. In this way, we move beyond a larger body of literature that has focused on transactional power within relationships, with a two-year age difference among adolescents less likely to result in large material inequalities that may exist among couples with much larger age disparities.

Although our findings do not measure mechanisms for why age discordance may matter, we hypothesize that partner age disparity may create power differentials which can affect the ability of young women to negotiate contraceptive use with their partners. That these results persist despite the majority of these young women (regardless of their partners' age) stating their sexual debut partners were romantic boyfriends suggests that the lack of condom use among females who initiate their sexual lives with older partners may be more about power structures within the relationship, as opposed to exclusively about love and trust.

In regards to the role of HIV prevention-related knowledge and contraceptive us, our findings support what previous studies have highlighted. Namely, that HIV prevention-related knowledge does not significantly predict contraceptive use. Whereas other studies on South African young adults have typically used samples of sexually-active youth, we find no association despite examining HIV-prevention knowledge prior to sexual debut.

This study provides important insights for public policy and future research. Knowing that relationships play an important part in the context in which young, urban South Africans negotiate and use contraception means that sexual education programs aimed at this population should not only emphasize birth control and STI protection technologies, but also partner communication and negotiation, in addition to a continued focus on improving socioeconomic conditions for young people, which our control variables provide support for and prior research on program interventions has emphasized (Bruce and Hallman 2008; Hallman 2009; Magnani et al. 2005). In addition, further

research should explore how different relationship dynamics interrupt successful contraceptive use, and how these dynamics may be interacting to dilute the role of HIV prevention knowledge, perceived risk of infection, and personal HIV/AIDS experience.

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TABLES

Table 1. Sample Characteristics of Cape Town Young Adults (14 – 17 years) who reported not having sex by wave 1

	Total		Females		Males	
	n	%	n	%	n	%
Average age at wave 1		15.4		15.5		15.3
Race						
African	415	24.4	261	26.7	154	21.4
Coloured	663	75.6	377	73.3	286	78.6
Parental presence						
Mother in household at wave 1	845	79.2	486	77.9	359	81.0
Father in household at wave 1	529	51.6	301	49.4	228	54.5
Average years of maternal education		8.7		8.6		8.7
Attending school in wave 1	991	91.4	589	91.9	402	90.8
Lives in impoverished neighborhood	395	23.1	245	24.8	150	20.9
Birthplace						
Cape Town	881	86.5	511	85.4	370	87.8
Other	197	13.5	127	14.6	70	12.2
Place spent most of life						
Urban	829	85.5	491	85.2	338	85.8
Other	240	14.5	141	14.8	99	14.2
N	1078		638		440	

Note: Unweighted n, weighted percents
Data: Cape Area Panel Study, Waves 1-4 and Calendar.

Table 2. HIV Knowledge, Risk, and Experience of Cape Town Young Adults (14 – 17 years) who reported not having sex by wave 1

	Females				Males			
	No sex		Has sex		No sex		Has sex	
	n	%	n	%	n	%	n	%
HIV Knowledge								
Abstinence	123	57.3[bcd]	188	48.9[a]	64	40.5[a]	106	40.2[a]
Male condoms	175	77.9	325	80.3	142	83.4	216	83.5
Limit sex partners	58	25.6 d	79	22.9	40	24.7	44	18.9[a]
HIV Perceived Risk								
No risk	140	60.8[bd]	297	73.1[ac]	113	63.4[b]	188	69.0[a]
Any risk	79	39.2[bd]	93	26.9[ac]	53	36.7[b]	65	31.0[a]
HIV Experience								
Knew someone living with HIV/AIDs	17	7.8[b]	67	15.7[acd]	14	7.2[b]	27	8.8[b]
Knew someone who died from HIV/AIDs	32	13.8[b]	94	21.6[acd]	26	13.3[b]	43	13.3[b]
Knew of someone dead/alive had/with HIV/AIDs	39	17.3[b]	131	31.0[acd]	32	16.5[b]	55	17.3[b]
N	410	24.3	228	32.6	266	19.0	174	24.1

Note: Unweighted n, weighted percents

Chi-2 tests significant at least at p<.05. a Different from females, no sex, b Different from females, have sex, c Different from males, no sex, d Different from males, have sex.

Table 3. First Sex Experience of Cape Town Young Adults (14 to 17 years) who reported not having sex by wave 1

	Females		Males	
	n	%	n	%
Proportion of sample having sex by end of study	410	57.3	266	55.9
Average age at first sex		17.2		16.6[a]
Contraception				
Used any contraception at first sex	298	71.0	186	74.5
Used a male condom at first sex	269	63.4	181	72.9
Used other form at first sex	67	16.5	11	4.5[a]
Used two or more forms at first sex	38	8.9	6	3.0[a]
First sex partner				
Two or more years older (females) / younger (males)	274	66.0	50	17.4[a]
First sex experience				
Felt persuaded/tricked/forced/raped at first sex	59	13.2	17	6.2[a]
N	410		266	

Note: Unweighted n, weighted percents.

[a] *indicates two-sample t-tests and chi-2 tests significantly different from females at least at p<.05*

Table 4. Binomial Logistic Odds Ratios Predicting Sex by End of Study Period

	Panel A Females		Panel B Males	
	(1)	(2)	(1)	(2)
Respondent and Family Characteristics				
Age at first wave	1.42***	1.43***	1.21†	1.21†
	(0.13)	(0.13)	(0.13)	(0.13)
Race/Ethnicity (Coloured)				
Black	5.25***	4.49***	3.88*	4.09*
	(1.92)	(1.67)	(2.11)	(2.37)
Mother present in the home at wave 1	0.78	0.79	0.55*	0.54*
	(0.18)	(0.19)	(0.16)	(0.16)
Father present in the home at wave 1	0.85	0.87	0.61*	0.59*
	(0.16)	(0.17)	(0.13)	(0.13)
Maternal education (years)	0.98	0.98	0.96	0.96
	(0.03)	(0.03)	(0.04)	(0.04)
Lives in impoverished community	1.49	1.49	0.81	0.86
	(0.57)	(0.59)	(0.42)	(0.46)
Education at wave 1 (not in school)				
Attending school	0.55†	0.60	0.60	0.55
	(0.20)	(0.22)	(0.23)	(0.22)
Born in Cape Town	1.07	1.05	0.94	0.97
	(0.37)	(0.36)	(0.33)	(0.34)
Spent most of life in urban area	0.99	0.94	1.18	1.25
	(0.38)	(0.37)	(0.45)	(0.48)
HIV Knowledge, Risk, and Experience				
HIV Knowledge				
Abstinence		0.96		1.25
		(0.19)		(0.27)
Male condoms		0.97		0.89
		(0.22)		(0.26)
Limit sex partners		1.01		0.76
		(0.23)		(0.20)
HIV Perceived risk (no risk)				
Any risk		0.78		1.16
		(0.16)		(0.30)
HIV Experience (knows no one with/had HIV)				
Knows someone with or who had HIV/AIDs		1.75*		0.79
		(0.40)		(0.21)
Constant	0.01**	0.01**	0.25	0.30
	(0.02)	(0.01)	(0.45)	(0.54)
N	638	638	440	440

***p<0.001; **p<0.01; *p<0.05; †p<0.10

Table 5. Binomial Logistic Odds Ratios Predicting Contraceptive Use at First Sex

	Panel A Females				Panel B Males
		Condom		Any	Condom
	(1)	(2)	(3)	(4)	(3)
Respondent and Family Characteristics					
Age at first sex	1.43***	1.40***	1.39***	1.63***	1.40*
	(0.14)	(0.14)	(0.13)	(0.18)	(0.20)
Race/Ethnicity (Coloured)					
Black	5.52***	7.00***	7.48***	16.49***	2.21
	(2.86)	(3.97)	(4.19)	(10.77)	(1.70)
Mother present in the home at wave 1	0.92	0.98	0.98	0.87	1.21
	(0.23)	(0.26)	(0.27)	(0.27)	(0.40)
Father present in the home at wave 1	1.21	1.22	1.20	1.10	1.06
	(0.33)	(0.34)	(0.33)	(0.33)	(0.38)
Maternal education (years)	1.09*	1.07†	1.07	1.11*	1.03
	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)
Lives in impoverished community	0.93	0.91	0.94	0.59	0.20*
	(0.45)	(0.47)	(0.48)	(0.34)	(0.16)
Attending school at time of sex	2.19*	1.91†	1.97†	2.41*	2.88*
	(0.72)	(0.65)	(0.70)	(0.94)	(1.22)
Born in Cape Town	1.50	1.59	1.57	1.71	0.93
	(0.56)	(0.63)	(0.62)	(0.78)	(0.39)
Spent most of life in urban area	1.11	1.16	1.20	1.25	0.66
	(0.47)	(0.53)	(0.55)	(0.71)	(0.31)
HIV Knowledge, Risk, and Experience					
HIV Knowledge					
Abstinence		1.64†	1.74*	1.57	0.86
		(0.41)	(0.45)	(0.43)	(0.28)
Condoms		0.67	0.70	0.79	1.41
		(0.22)	(0.24)	(0.30)	(0.57)
Limit sex partners		1.53	1.50	1.39	0.98
		(0.49)	(0.47)	(0.46)	(0.43)
HIV Perceived risk (no risk)					
Any risk		0.71	0.75	0.69	0.80
		(0.19)	(0.21)	(0.21)	(0.31)
HIV Experience (knows no one with/had HIV)					
Knows someone with or who had HIV/AIDs		0.91	0.94	0.80	1.98†
		(0.24)	(0.24)	(0.24)	(0.74)
First Sex Experience					
First sex partner age (<two or more years older)					
First sex partner two or more years older			0.52*	0.51*	1.80
			(0.15)	(0.16)	(0.80)
First sex experience was consensual			0.83	0.96	0.91
Felt persuaded/tricked/force/raped at first sex			(0.31)	(0.40)	(0.52)
Constant	0.00***	0.00***	0.00***	0.00***	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
N	410	410	410	410	253

***p<0.001; **p<0.01; *p<0.05; †p<0.10

Appendix

Sample Characteristics of Cape Town Young Adults (14 to 17 years) - Study Sample versus Respondents Missing Sex Data

	Study Sample		Missing sex data in follow-up	
	n	%	n	%
Average age at wave 1		15.4		15.4
Female	638	56.9	119	50.8
Race				
African	415	24.4	91	26.4
Coloured	663	75.6	132	73.7
Parental presence				
Mother in household at wave 1	845	79.2	155	74.1[a]
Father in household at wave 1	529	51.6	91	46.5[a]
Average years maternal education		8.7		9.1
Attending school in wave 1	991	91.4	200	90.5
Lives in impoverished neighborhood	395	23.1	88	26.3
Birthplace				
Cape Town	881	86.5	148	74.0[a]
Other	197	13.5	74	26.0[a]
Place spent most of life				
Urban	829	85.5	156	82.2
Other	240	14.5	61	17.8
HIV Knowledge				
Abstinence	481	47.3	98	46.3
Condoms	858	81.1	181	82.6
Limit sex partners	221	22.9	45	20.1
HIV Perceived Risk				
No risk	738	67.3	146	64.9
Any risk	290	32.7	68	35.1
HIV Experience				
Knows someone living with HIV/AIDs	125	10.5	23	9.5
Knows someone who has died from HIV/AIDs	195	16.1	29	11.7
Knows of someone dead/alive had/with HIV/AIDs	257	21.6	42	17.2
N	1,078		223	

Note: Unweighted n, weighted percents

[a] *indicates two-sample t-tests and chi-2 tests significantly different from those with follow-up sex information at least at p<.05*