

The Influence of Substance Use, Social Sexual Environment, Psychosocial Factors, and Partner Characteristics on High-Risk Sexual Behavior Among Young Black and Latino Men Who Have Sex with Men Living with HIV: A Qualitative Study

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Abstract

Understanding the sexual risk behaviors of youths living with HIV/AIDS is critical to secondary prevention of HIV. As part of a larger qualitative study of youths living with HIV, in-depth interviews were conducted with 27 African American and Latino, HIV-infected young men who have sex with men, aged 16–24 years, living in New York City. The study explored the role of substance use, the social-sexual-environmental, and psychological contexts in which sexual risk behaviors occurred. Since learning of their HIV infection, the majority of participants had reduced their risky sexual behaviors; however, a subset (26%) of participants continued to have unprotected sex, in most cases with multiple partners. Substance use, the social environmental context of the sexual encounter, the psychological impact of HIV on sexual behavior, and partner characteristics were associated with high-risk sexual behaviors in this group. Among high-risk participants, factors associated with risky sexual behaviors clustered, with 57% reporting two or more factors. More intensive interventions are needed for this subset of youths living with HIV, including assessment and treatment for substance use and mental health issues, strategies for stress reduction, and partner interventions.

Introduction

IN 2008, THE CENTERS FOR DISEASE CONTROL and Prevention reported over 42,929 cumulative cases of AIDS among individuals aged 13–24 years, approximately 20,000 of whom were still living.¹ In 2007, 6651 new cases were reported in this age group, a 25% increase since 2006. Minority youth, in particular, have been disproportionately affected by HIV/AIDS. Nationally, blacks account for 62% and Hispanics account for 17% of all HIV/AIDS cases in this age group.² In New York City, more than half of youths living with HIV are black and close to 30% are Hispanic.³ Transmission of HIV through unprotected sex with an infected partner is the primary cause of new infection in adolescents and young adults.¹ With the advent of highly active antiretroviral treatment, life

expectancy for youths living with HIV/AIDS has increased considerably and morbidity has decreased.^{4–6} Thus, in addition to treating clients' HIV-related illnesses, health care providers are faced with the challenge of educating youths about the importance of safe sexual practices to avoid HIV transmission during a developmental stage characterized by sexual experimentation and maturation.^{7,8} Understanding the factors that influence sexual behavior in youths living with HIV/AIDS is essential to the development of interventions to limit secondary transmission of HIV; however, studies of adolescents and young adults living with HIV are few.

While previous studies have reported decreases in rates of high-risk sexual behaviors among youths with HIV, many continue to engage in these behaviors.^{9–13} Literature suggests that substance use, social-sexual-environmental and

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psychological factors, and partner characteristics may play an important role in continued high-risk sexual behaviors. Several studies of youths living with HIV in the United States have documented high rates of substance use.^{12,14-17}

One recent study of this population found 60% had problems with substance use and 42% had engaged in sexual risk behaviors.¹⁵ Although studies of youths with HIV are limited, those of young men who have sex with men (YMSM), a population at high risk for acquiring HIV, offer evidence supporting the role of substance use in high-risk sexual behaviors.¹⁸⁻¹⁹ For example, the Young Men's Study,¹⁸⁻²⁰ with a sample of over 3000 participants, found that more than half of the participants who had insertive or receptive anal intercourse in the previous 6 months did not consistently use condoms with their partners. Unprotected anal sex was associated with use of alcohol, marijuana, amphetamines, and cocaine during sex.¹⁸

Recent studies of YMSM have begun to explore the role of the social sexual environment in risky sexual behaviors. Highly sexually charged environments such as sex clubs, bathhouses, and Internet chat rooms where risky sexual behavior occurs often included use of drugs and alcohol.²¹ Several studies of YMSM have explored the role of "club drugs" (e.g., methamphetamine, ecstasy, and ketamine used in bars, nightclubs, and as part of ballroom culture) in high-risk sexual behaviors.^{21,22} In these settings, the use of such drugs was frequently a part of the sexual encounter.²² These studies demonstrate that interventions to limit HIV transmission in this population must address both the role of substance use and the environment in which sexual encounters occur.

The psychological stress of living with an HIV diagnosis has been widely reported in adults^{23,24} and among youths living with HIV.²⁵⁻²⁷ The relationship between unprotected sex and high levels of psychological distress has been reported in adults living with HIV²⁸ and recently a study of HIV-infected youths found higher levels of depression associated with unprotected sex at last intercourse and higher levels of alcohol use.¹² Partner characteristics have also been shown to affect condom use in persons with HIV. Many studies of HIV-infected adults reported that unprotected sex was more likely to occur when partners were seroconcordant.²⁹ Similar findings have been reported in a few studies of youths with HIV; both male and female young adults were more likely to have unprotected sex with an HIV-infected partner.^{12,14,30} Other studies have shown that factors such as gender and age differences of sexual partners played a role in condom use.³¹

As HIV infection among YMSM continues to grow at a steady rate, a better understanding of factors associated with sexual risk behaviors is needed to develop more effective interventions to reduce HIV transmission.¹ The qualitative study presented here aims to contribute to the literature by examining the role of substance use, social sexual environmental and psychological factors related to high-risk sexual behaviors in a sample of African American and Latino YMSM living with HIV in New York City.

Methods

Study design and participants

The qualitative study eliciting the data reported here was exploratory in nature, and part of a larger study designed to

examine the experiences of youths living with HIV infected as a result of high-risk sexual behavior or injection drug use; however, no participants in the study reported injection drug use. The principal aims of that study were to examine the illness related adaptive tasks and coping responses of youths living with HIV. A purposive sample of 59 youths was recruited for the larger study from five well known adolescent HIV specialty clinics located throughout the New York metropolitan area. A representative case sampling method was used in which cases were chosen because they were representative, that is, shared important characteristics (including race and ethnicity) typical of the behaviorally infected adolescent and young adult population. All recruitment sites provided comprehensive specialty medical, mental health, and supportive ancillary social services to adolescents and young adults with HIV. Eligibility criteria included being 13-24 years old, previously testing positive for HIV (verified by referring clinics), being cognitively competent to participate, and having acquired HIV infection via unprotected sex or injection drug use.

Potential participants were all recruited at the time of their regularly scheduled clinic visits by clinical staff or by study staff. There were no differences between clinical staff and study staff in response rates or demographic characteristics of participants recruited. No refusals were reported among the convenience sample approached, however a few individuals that agreed to participate dropped out of care and did not complete the interview. For the subanalysis presented here, participants were included if they reported having sex with men in the qualitative interview. The study was approved by Columbia University and New York University Institutional Review Boards, the Institutional Review Boards of collaborating institutions, and received a Federal Certificate of Confidentiality. Further details of the study procedures have been presented elsewhere.³²

Data collection and measures

Data collection consisted of a focused qualitative interview,³³ a brief quantitative survey to gather demographic and behavioral data, and a small battery of psychosocial measures collected for descriptive purposes. Baseline descriptive quantitative data were collected using audio computer-assisted self interviews (ACASI). In-depth semistructured, qualitative interviews focused on the individual's experience of living with HIV. An interview guide organized around topic areas related to the study aims (adaptive tasks and coping strategies related to HIV diagnosis) was used to structure the interview. Interviewers (4) were graduate students in the fields of public health and social sciences with prior interviewing experience. An intensive, 3-day interview training was provided for all of the interviewers by one of the investigators (H.M.L.), an expert in qualitative methods, and review of transcripts and periodic meetings with the interviewers took place to ensure high quality of the interview data.

Quantitative sociodemographic data collected included age, gender, racial/ethnic identity, education, work status, and age at HIV diagnosis. Sexual behavior and substance use items were taken from the Youth Risk Behavior Survey.³⁴ To measure sexual behavior, participants were asked "How old were you when you had sexual intercourse for the first time?";

"How many lifetime sexual partners have you had?" (response categories: 1 through 6 or more); "How many sexual partners have you had in the last three months?"; "Did you use drugs or alcohol before your most recent sexual intercourse?"; and "Did you use a condom the last time you had sexual intercourse?" In addition, participants were asked, since HIV diagnosis "What is your best estimate for your percentage of vaginal and anal sex acts unprotected by condoms with HIV-negative partners?" Participants were also asked about lifetime and current use of alcohol, marijuana, and any form of cocaine (powder, crack, or freebase) and any use of heroin, methamphetamines, ecstasy, and steroids. To assess injection drug use, participants were asked, "During your life, how many times have you used a needle to inject any illegal drug into your body?"

In-depth, focused, semistructured interviews explored participants' background and experiences prior to HIV infection, as well as domains important to the aims of the study (HIV illness related adaptative tasks and coping). Specific topics related to sexual behavior since learning of HIV diagnosis included whether the participant had any sexual partner (main or steady, casual, anonymous, or one-night stand), the gender of that partner, the number of each kind of sexual partner, what kind of sex was had with each kind of sexual partner (vaginal, anal, oral), how often condoms were used with each kind of sexual partner, and the frequency of condom use (all of the time, most of the time, rarely or never and in what circumstances for vaginal sex, for oral sex, and for anal sex) with each sexual partner (male, female, transgender).

Data analysis

Descriptive statistics for the personal demographic variables and sexual risk behavior items were calculated using STATA version 9.0 (StataCorp, College Station, TX). Frequencies and cross-tabulations were calculated for categorical variables; means and standard deviations were calculated for continuous variables. Audio-taped qualitative interviews were transcribed verbatim. After initial review of transcripts by the research team, a preliminary coding scheme was developed that included primary codes related to the analytic foci of the study and subcodes that specified specific dimensions of primary codes. Content analysis utilizing a constant comparison approach was utilized in analyzing the data.³⁵ The research team compared variations within and across themes to further refine the coding scheme. The coding scheme facilitated the systematic identification of analytic patterns that became apparent from the data, as well as theoretically important concepts. In addition to overall data coding, a profile of each participant was developed that summarized demographic characteristics and findings related to the primary themes. Further description of data analysis has been presented elsewhere.³²

Themes related to the analysis presented here were sexual behavior, the environment in which sexual behavior occurred, substance use in the context of sexual behavior, and the relationship between sexual partners. All interviews were coded and entered into a database utilizing the qualitative data analysis software, ATLAS.ti[®] version 4.2. Transcripts were then independently coded by two coders (Kappa .85). Coding inconsistencies were resolved through discussion with the research team.

To analyze qualitative sexual risk behavior data, the following definitions were developed: (1) high-risk participants: reported their condom use as "some of the time" or used condoms with selected partners only; (2) moderate-risk participants: reported condom use "usually but not always"; (3) low-risk participants: reported condom use all of the time; (4) no-risk participants: reported no sexual activity for the last 3 months.

Results

Participants

The sample for the study presented here included 27 adolescent and young adult male participants who reported having sex with men. Of these, 27 completed the quantitative demographic measures; however, due to a computer error, quantitative data on sexual behavior, substance use and small battery of standardized psychosocial measures was available for only 25. Five male-to-female transgender and one heterosexual male were not included in this analysis because of concerns about the role of gender identity in sexual behavior. All study participants reported they were infected with HIV through sexual transmission. None reported injection drug use. Table 1 provides the demographic characteristics of this sample. The mean age was 20.8 (standard deviation [SD] 2.18) years. The mean age at time of diagnosis was 18.6 (SD 3.48) years. Almost two thirds (60%) of the sample identified as black and 40% as Hispanic/Latino. Approximately one third of the youths were enrolled in school at the time of the study. More than half of the participants (52%) had less than a high school education. Only 29% of the sample were currently employed and less than half of these participants had a full-time job. More than half (54%) of participants reported currently being on highly active antiretroviral treatment.

Sexual risk behavior

Table 2 presents quantitative data about the sexual behaviors of the 25 YMSM participants. Pre-HIV sexual risk

TABLE 1. SELECTED DEMOGRAPHIC CHARACTERISTICS OF GAY AND BISEXUAL MALE ADOLESCENTS WITH HIV

Characteristic	n = 27
Age in years (mean)	20.8, SD 2.18
Age at HIV diagnosis (mean)	18.59, SD 3.48
Race/ethnicity	
African American	18 60.0%
Hispanic/Latino	11 40.0%
Education	
Less than high school	1 3.7%
Some high school	13 48.1%
High school graduate	4 14.8%
Acquired GED	2 7.4%
Some college/associate's degree	6 22.2%
College graduate	1 3.7%
Currently enrolled in school (part time or full time)	9 33.3%
Employment	
Full time	5 18.5%
Part time	4 14.8%
Not currently working	18 66.7%
Currently on HAART	14 51.9%

SD, standard deviation.

TABLE 2. SELF-REPORTED SEXUAL BEHAVIOR AMONG YOUNG MINORITY MEN WHO HAVE SEX WITH MEN (n = 25)

<i>Characteristic</i>		
Sexual behavior pre-HIV diagnosis		
Sex at age 11 or younger	5	20%
Six or more lifetime sexual partners	18	72%
Sexual behavior post-HIV diagnosis past 3 months		
2 or more sexual partners in last 3 months	16	64%
Condom used last vaginal/anal sex	19	76%
Used alcohol or drugs at last sex	8	32%
Estimated % of times had unprotected sex with HIV partner since HIV diagnosis	14% (SD 30.7)	
Estimated % of partners disclosed HIV status to before having sex	42%	

SD, standard deviation.

histories revealed that 20% of males experienced intercourse at 11 years of age or younger and 72% reported having six or more lifetime sexual partners. In response to questions about sexual behavior, approximately two thirds (64%) of participants reported having two or more sexual partners in the last 3 months and 76% reported condom use the last time they had vaginal or anal intercourse. One quarter (32%) reported alcohol or drug use the last time they had sex. On average, participants reported having had unprotected vaginal or anal sex with their HIV-negative partners 14% of the time since their HIV diagnosis and 42% reported disclosing their HIV status to a sexual partner.

Substance use

During the participants' lifetime, alcohol and marijuana were the primary substances used, with use of other drugs reported at far lower levels (Table 3). The majority of participants (84%) reported ever using alcohol; 56% of those reported alcohol use in the past 30 days. Approximately 72% reported ever having used marijuana; 44% of those reported marijuana use in the past 30 days. Approximately 20% of participants reported lifetime cocaine use and 24% reported lifetime ecstasy use. Overall, lifetime use of other drugs was low: methamphetamine (8%), heroin (8%), and steroids (8%).

TABLE 3. SUBSTANCE USE AMONG YOUNG MINORITY MEN WHO HAVE SEX WITH MEN LIVING WITH HIV

<i>Substance</i>	n = 25	
Ever used in lifetime		
Alcohol		
Ever	21	84%
Last 30 days	14	56%
Marijuana		
Ever	18	72%
Last 30 days	11	44%
Cocaine (includes powder, crack, or freebase)	5	20%
Heroin	2	8%
Methamphetamines	2	8%
Ecstasy	6	24%
Steroids	2	8%

Qualitative analysis of sexual risk behavior

Qualitative data reported here provide a more nuanced picture of sexual risk behaviors reported above. Table 4 illustrates the range of sexual risk behaviors among the 27 males who reported having sex with men, from high-risk to no current risk. A total of 7 participants reported condom use only some of the time or with selected partners only. Of those, most (6/7) reported having more than 10 sexual partners in the past 3 months. Six participants reported condom use most but not all of the time. Of these, the majority (4/6) reported having 5 or more sexual partners in the past 3 months. Eight participants reported condom use all of the time (low risk). In this group, all had less than 5 sexual partners in the previous 3 months. Finally, 5 participants reported that they had not been sexually active since learning of their HIV diagnosis (a period of 1–7 months).

The qualitative and quantitative data are complementary but not directly comparable because they measure different time frames. Approximately one quarter of participants in the quantitative survey reported not using a condom the last time they had sexual intercourse, roughly the same proportion that reported condom use only some of the time in the qualitative data. However, another 22% in the qualitative interview reported using condom most but not all of the time, which suggests the quantitative data may be underreporting risk behavior to some degree.

Qualitative analysis of the data revealed several broad categorical factors that increased high-risk sexual behaviors among participants: (1) substance use and the sexual-social environment; (2) influence of psychosocial factors on sexual behavior since HIV diagnosis; and (3) characteristics of sexual partners. Finally, a theme was identified among youths with lower sexual risk behavior: (4) adoption of safer sexual behaviors.

Substance use and the social-sexual environment. High-risk participants described the role of substance use in their high-risk sexual behaviors embodied in the following sub-themes: altered sexual judgment; high-risk venues for seeking and socializing with sexual partners; engagement in sex work; and clustering of high-risk sexual behaviors.

Substance use altered judgment about engaging in high-risk sexual behaviors. Among young men deemed at highest risk, four of seven reported regularly using drugs or alcohol while engaging in sexual activities. Of those, all used alcohol and marijuana, and two reported use of cocaine, Ecstasy,

TABLE 4. SEXUAL BEHAVIOR IN PREVIOUS 3 MONTHS REPORTED IN QUALITATIVE INTERVIEW

<i>Risk behavior</i>	n = 27	
High risk ^a	7	25.9
Moderately high risk ^b	6	22.2
Lower risk ^c	8	29.7
No current risk ^d	6	22.2

^aCondom use some of the time or with selected partners only for anal and vaginal sex.

^bCondom use usually but not always for anal and vaginal sex.

^cCondom use always for anal and vaginal sex.

^dNot currently sexually active (in the past 3 months).

ketamine, and methamphetamine regularly when having sex. Participants described the effects of using drugs and alcohol when having sex as increasing the desire to have sex, lowering inhibitions, and allowing an escape from responsibility. One participant described a regular pattern of alcohol use and increased sexual risk behavior: "Whenever I get drunk, usually once a week, then I feel the need to have sex."

Another participant described the effect of substance use on lowering inhibitions: "If I'm high enough, I won't use a condom." Similarly, another responded, "I mean it could be either that I'm high or the person look so good to me, I'll say fuck a condom I want to feel how he feel." One youth described substance use as a strategy to escape from the responsibility of having protected sex: "It's easy for me to be like drunk and feel like living in the moment . . . it's kind of an excuse, kind of an escape to do what I'm doing and then do it." Another participant described the effects of drugs and alcohol on his high-risk sexual behaviors: "I could be high, or maybe on ecstasy or crystal, or something would impair my judgment, you know? And that has gotten me in trouble a couple of times." One youth described his need to use drugs or alcohol in order to have sex: "Nine times out of ten, I feel the need to be on something nowadays to have sex." This young man described extensive use of cocaine, marijuana, and alcohol, indicating that he used drugs "most of the time" when he went out. Another participant who reported the need to use drugs when having sex said it helped to "block out" his thinking about HIV and the need to use a condom.

High-risk participants who used substances when having sex reported 12 to 75 sexual partners in the previous 3 months, and three reported recently engaging in sex work. Drug and alcohol use among moderate-, low-, and no-risk participants was infrequent and not specifically associated with high-risk behavior.

High-risk venues for seeking out and socializing with sexual partners. Three high-risk participants described multiple venues where they sought out sexual partners that appeared to contribute to high-risk behavior. One youth, who reported having hundreds of partners since learning about his HIV diagnosis, said that he found partners "on the computer, chat line, streets, parks, the train." Another participant described a pattern of drinking at a local bar that led to unsafe sex: "And it's like, yeah go get them two-for-one drinks boo 'cause you know after the third one, you know where you're gonna want to go." Three high-risk youths described risky behavior that took place in clubs frequented by other youths looking to have sex. They described using sexually stimulating "club drugs" including methamphetamine, Ecstasy, and ketamine and engaging in high-risk sex.

Engagement in sex work. Three high-risk youths reported having engaged in sex work on a regular basis. They first became involved in sex work as a means of survival; after being rejected by family or friends because of their sexual identity, they became homeless. All three participants described frequent high-risk sexual behaviors with multiple partners.

Clustering of high-risk behaviors. Among the highest risk participants 4/7 (57%) reported two or more of the following risk behaviors associated with high-risk sex: substance use

with sex, frequenting high-risk sexual venues, sex work. Among moderate risk participants 1/6 (16%) reported two or more of these risk behaviors. Among participants with low or no sexual risk behavior none of these risk behaviors were reported.

Influence of psychosocial factors on sexual behavior since HIV diagnosis. Three high-risk youths described the psychological impact of HIV on their sexual behavior. Two sub-themes were identified: increase in sexual drive and decreased desire for emotional intimacy/change in the meaning of sex.

Increase in sexual drive. One participant noted the change in his sexual drive as a result of learning about his HIV diagnosis: "After I found out, my sex need grew." He estimated that he doubled the number of sexual partners after learning about his diagnosis, many which were one-night stands. He said that he is likely to have unprotected sex if he thinks a partner is positive, they "look clean," or he is high, estimating that it happens 25–30% of the time. Another participant described a profound change in his behavior since learning about his HIV infection: ". . . I never used to think about doing half the shit I do now. And I think being positive has been a way at the same time to be like . . . oh well, might as well do this now." This participant described himself as "addicted to sex." Another participant described an exponential increase in the number of his anonymous partners and one-night stands, stating that there were so many, "I can't count."

Although each of these young men reported that they had engaged in protected sex for some proportion of their sexual encounters (50–80%), the increased numbers of partners, coupled with the use of drugs and alcohol and the venues where they sought out partners, greatly increased their risk for HIV transmission.

Changes in the meaning of sex and desire for sexual intimacy. One young man described how the meaning of sex had changed for him since having been diagnosed with HIV.

To be honest with you I haven't had . . . sex hasn't been the same for me since I've become positive. It hasn't. There's no intimacy in it for me like there was before. Now it's just like sex. Like I get horny, ok. Before it was like . . . you know when I used to have sex with someone I was like in love with them. I loved them. You know what I mean. It was like really hot and intimate.

He described the impact of this loss of intimacy as having changed the experience for him to one that was purely physical with no concern for the partner involved.

Sexual partner characteristics and beliefs about partner responsibilities in sexual risk behavior. Partner characteristics played an important role in high-risk sexual behaviors. Three types of partner situations that influenced condom use emerged from the data as subthemes: partner is HIV positive; older partner refuses to use condoms; beliefs about partner's HIV status and partner's responsibilities.

Partner serostatus governed condom use. "Serosorting," the act of looking for a partner who is also HIV positive, has been reported in the literature on HIV-infected adults.²⁹ Among adolescents in the study, this strategy was also present. One

gay participant described his feelings about condom use with an attractive potential sex partner who was HIV positive: "Honestly, I think if you were really hot and I knew you were positive then I would be tempted to not use a condom." Another young man described how he initially used condoms with his partner until he found out he was HIV positive: "In the beginning, we used condoms but then when I found out about—both of us—when I found out about him we got scared and it got kind of bad . . . he would come over and chill with me, and we would—you know, unprotected." Another participant, who reported having unprotected sex with his HIV-positive partner who had infected him, said that he didn't believe he would ever have another boyfriend because he didn't want to have to disclose his HIV status to another person: "I don't really want to deal with it because it's that whole process of how I'm gonna tell them and stuff, how they're gonna react and stuff, so it's like why I probably still hook up with ___ [his HIV-positive partner]. Like I really don't like him no more, but he already knows and he is too and he's there, so."

Patterns of condom use by partner type varied widely among other high-risk participants. Some used condoms when they were in a relationship and some only with casual partners. One bisexual youth said, "I do use condoms for certain people—if I'm in a relationship—sometimes I'll wear it depending on the person." Another stated, "I've had partners in particular that I didn't use condoms with. Like reoccurring partners."

Older partner refuses to use condoms. A bisexual male participant reported having unprotected sex with an HIV-negative female partner for over a year because she did not want to use condoms: "Well we didn't have sex that much but she knew about my status—I told her and she didn't care, and she wanted to . . . and it was just . . . I don't know, it was really strange to me because . . . she was older than me, she was 26, and I was like 19." Another bisexual participant, who had disclosed his status to an HIV-negative female partner, tried to convince her to use a condom. After having unprotected sex with her, he insisted that she get tested for HIV. Two other young men who had older male sexual partners (one being HIV-positive) acquiesced to their partners' wishes. One reported feeling relieved that the decision was "taken out of my hands."

Beliefs about partner's HIV status and partner's responsibilities. Two strategies were described by participants for making decisions about condom use with a partner: assessment of partner HIV status by "looking" and believing partners have the responsibility to protect themselves. Both strategies were non-verbal and did not involve any direct discussion with the partner. The first strategy consisted of their assessment of the partner's HIV status by examining their behavior and physical appearance, or "I can tell by looking." One youth described his decision to have unprotected sex with an HIV-infected partner as sometimes based on his belief (based primarily on inspection) that they were "clean": "Okay like if they're positive and you know if I feel like they're clean enough and I don't see any—I'm the type of person that look at their penises a lot or I'll touch them right here, they glands, you know? And if . . . I'm really into it I won't use a condom."

Another participant described changes in his approach to assessing partners since being diagnosed with HIV: "Yeah like everybody I meet now, I don't just let them have sex with me. I pick and choose wisely. I look at them closely. Like before I have sex with them I look at them, at their private parts, to check for bumps and stuff, I don't like that, or scratches or open wounds and something because that can pass the virus too."

The second strategy was based on beliefs about peer norms in the context of the HIV/AIDS epidemic, specifically, that their partners have the responsibility to protect themselves, or "buyer beware." Three high-risk youths described their belief that initiating and insisting on condom use was the responsibility of their sexual partners regardless of whether they had disclosed their HIV status: "You know what, it's 2006. If they're not smart enough to put a condom on then why should I have to tell them?" Another youth who used condoms only "some of the time" for anal sex had a similar approach to disclosing his HIV status to his sexual partners: "I don't think I should have to tell him that if he's just a hook-up. If he's going to be something more than that then yeah, I think he has the right to know."

Adoption of safer sexual behaviors As noted above, it is important to emphasize that the majority of participants had adopted safer sexual practices after learning about their HIV infection. Two subthemes related to adoption of safer sex behavior were identified: fear of infecting a sexual partner and change in priorities regarding sex.

Fear of infecting a sexual partner. This was a strong motivating factor that changed sexual behaviors among most "no-risk" and "low-risk" participants. One young man was especially concerned because he knew his viral load was high. He explained, "but as far as sex I'm holding off on that . . . Yeah because this viral load is high in my body, you know what I'm saying, I would just spread it, just like that."

Change in priorities. Another participant who was no longer sexually active described a change in his priorities as a result of HIV. He stated, "I guess I'm not ready for that type of [sexual] commitment right now because I'm committed to a lot of other things, you know—not people but my school and stuff like that, my books, my job."

Discussion

This study provides important insights into the complex dynamics of sexual behavior in HIV-infected YMSM. It is encouraging to find increases in protective sexual behaviors since diagnosis among the majority of HIV-infected participants. Three quarters reported using a condom the most recent time they had engaged in vaginal or anal intercourse. Of great concern, however, is the continued high-risk behaviors among a subset of participants who were consistently having unprotected sex, in some cases with many partners, despite being engaged in HIV medical care where they received continuous educational messages about safer sex. Although these educational efforts have been successful in reducing risky sexual behaviors among the majority of youth they apparently are not adequate to reach the subgroup described here. The participant narratives provide insights on why

continued risk behaviors occur and potential interventions that can address these behaviors. It is clear that these youths are a strong potential source for secondary transmission of HIV to their sexual partners, and therefore require interventions tailored to their particular needs. The recent report of a 30% increase new HIV infections in New York City, with 75% occurring among YMSM, supports the need for more intensive interventions tailored to this population.³⁶

The data presented here support previous findings that substance use plays a significant role in high-risk sexual behaviors. The widespread use of alcohol and marijuana among the majority of participants in this study likely increased the occurrence of high-risk sexual behaviors. In some cases, high-risk youths described their substance use as a means to cope with stresses related to living with HIV. This would suggest that interventions should assess these issues and provide appropriate referrals to stress reduction and psychological services. Assessment and counseling about the negative effects of substance use on health and sexual behavior, and referral to substance abuse treatment services where appropriate, should be routinely addressed as part of their clinical care. Further research is needed to identify more effective interventions to reduce substance use in youths living with HIV including the use of structured behavior change programs utilizing techniques such as motivational enhancement training.³⁷

The use of sexually stimulating drugs (methamphetamine, ecstasy, ketamine) reported here presents a significant risk for HIV transmission. The interaction of these drugs with the sexual social environment in which they are used (dance clubs, bars, meet-ups with Internet contacts, ballroom events, etc.) has been noted by other researchers²¹ and has previously been associated with increased rates of HIV in YMSM living in New York City.³⁷ The appeal of such venues can be powerful, as they provide an environment in which gay and bisexual youths can feel accepted and meet others like themselves. Illicit substances may be used to cope with feelings of anxiety, depression, demoralization, and stigma, as well as to enhance sexual pleasure. Providers need to regularly assess mental health needs, explore the role of sexually stimulating drugs in sexual behavior, and refer youths to mental health and other supportive services when needed. More research is needed to develop structured interventions that target multiple risk behaviors simultaneously.³⁷

A few gay and bisexual youths in this study engaged in sex work. All who did reported inconsistent condom use. Sex work among adolescents at risk for HIV has been previously reported.^{38,39} Research suggests that situational factors such as family rejection, poverty, and other negative life experience are antecedents of sex work.^{40,41} Interventions for youths engaged in sex work should focus on stabilizing contextual factors such as homelessness, and enhancing economic opportunities and self-esteem through referral to vocational and educational services. A recent qualitative study of youths engaged in sex work suggested that in addition to providing education, health services, and welfare opportunities, it is essential for providers to establish an emotional connection with youths engaged in sex work to enhance their capacity to deal with the unique challenges they face.⁴¹ In addition to supportive relationships that medical care providers offer to these youths, the availability of mental health providers who can develop ongoing rela-

tionships that provide an emotional connection for youth engaged in sex work is needed.

To our knowledge, the influence of specific psychosocial factors such as increased sexual need, change in the meaning of sex as an emotional connection, and decreased desire for intimacy following HIV diagnosis have not previously been reported in gay and bisexual youths. Participants who experienced these changes following HIV diagnosis engaged in continuous high-risk behaviors with multiple partners. A detailed sexual history is critical to identify the underlying factors influencing high-risk sexual behaviors. Interventions to address these issues need further research, in particular, interventions that are tailored to YMSM living with HIV. Parsons and colleagues⁴² suggest that successful interventions need to be innovative (for example, Internet-based), long term, and include a mix of modalities such as psychotherapy, relapse prevention, and medication.

Partner characteristics, particularly having a partner who is also HIV-infected, were associated with high-risk sexual behaviors in this study. These findings have consistently been demonstrated in other studies of adolescents and adults living with HIV.^{29,30} Serosorting has been widely reported in the MSM community throughout the HIV/AIDS epidemic.³¹ In this study, some participants appeared to be engaging in HIV-positive serosorting. The benefits of having an HIV-positive partner included feeling accepted and desirable, experiencing freedom from worry about infecting a negative partner, and not having to disclose to a negative partner. These perceived benefits appear to outweigh the perceived risks of contracting another strain of HIV or a sexually transmitted disease. Among the young men in the study who were having unprotected sex with their HIV-positive partners, there was little discussion of their risk of being re-infected with a different and potentially drug-resistant strain of HIV. In contrast, low- and no-risk participants in the study did discuss concerns about infectiousness based on their viral-load levels and symptoms. It is not clear whether these differences between high- and low-risk participants are related to health literacy levels or psychological defenses. Careful assessment by clinicians of HIV transmission health literacy may clarify what kind of interventions are needed for this population.^{37,43} Clinicians should explore these serious risks with both partners and seroconcordant couples. Interventions to reduce unprotected sex among seroconcordant couples should be conducted whenever possible, rather than on an individual level. This can pose a challenge in working with youths, as relationships are often not long in duration. In addition, health education enhanced by media materials delivered through youth-friendly modalities (i.e., text messaging) may enhance health literacy about transmission of different strains of HIV among youths with HIV.^{44,45}

Strategies used by youths with the highest risk behavior to determine whether to use condoms with a partner included nonverbal assessment of the partner for HIV or sexually transmitted disease infection and a belief that all sexual partners are responsible for their own protection. Both strategies carry significant risk for both partners and should be discouraged.

There is significant overlap of the factors associated with risk behaviors described above by participants engaging in the highest risk behaviors. Those participants engaged in multiple high-risk behaviors including substance use,

frequenting of high-risk sexual environments, and sex work. These behaviors need to be viewed within the context of their often traumatic life experiences, current life instabilities, and the stigma attached to sexual identity and HIV. Other researches have explored the clustering and overlapping of problem behaviors in youth living with HIV, but much more research is needed.¹⁵

Limitations

This research was designed as a qualitative study and not intended to provide generalizable information about program participants. Study participants were recruited from settings in which they were receiving comprehensive HIV medical care, including social support services. Thus, those who are not engaged in such care are not represented. All measures of sexual and substance use behavior were based on self-report and could be subject to social desirability influences. The cross-sectional nature of the data presented limits our ability to assess changes in sexual behavior over time. Despite these limitations, the study findings contribute to the understanding of the multiple interrelated factors affecting sexual risk behaviors among adolescents and young adults with HIV, and thus, has important implications for interventions in this population.

Acknowledgments

The study was supported by funding from the National Institute for Child Health and Human Development 5 R01HD041891. The authors thank Craig Fryer, Julie Stein, Mary Irvine, Nana Mensah, and Sonya Romanoff for their assistance in data collection, transcription, coding, and data management, the staff of Project STAY New York Presbyterian Hospital, the staff of Project HEAT SUNY Downstate Medical Center, Dr. Linda Levin and the staff of Mount Sinai Adolescent Health Program, Dr. Robert Johnson and the staff of UNDNJ Division of Adolescent Young Adult Medicine, and Dr. Donna Futterman and the staff of the Adolescent AIDS Program at Montefiore Medical Center. Thanks also to Dr. Victoria Raveis for her thoughtful comments on an earlier version of the manuscript. We would like to express our deep gratitude for the young men and women who shared their experience and insights about living with HIV.

Author Disclosure Statement

No competing financial interests exist.

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