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African American Adolescents Meeting Sex Partners Online: Closing the Digital Research Divide in STI/HIV Prevention

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Abstract

Minority adolescents are affected disproportionately by HIV and STIs, and the Internet is a popular venue to meet sex partners. Little is known about the risks of this behavior for minority adolescents. The majority of studies that have examined sexual risk behavior online or STI/HIV prevention programs online have been among adult MSM. In this study, data from 1,045 African American youth found that 6% met sex partners online and in chat rooms. Odds ratios, adjusting for gender, found this behavior was associated with alcohol ($AOR = 2.33$, 95% CI [1.1, 4.7]) and drug use ($AOR = 3.45$, 95% CI [1.9, 6.1]), unprotected vaginal ($AOR = 4.71$, 95% CI [1.9, 8.4]) and anal sex ($AOR = 4.77$, 95% CI [1.3, 17.1]) in the last 90 days, more lifetime vaginal ($AOR = 3.65$, 95% CI [2.0, 6.8]) and anal sex ($AOR = 2.74$, 95% CI [1.5, 4.8]), greater sexual sensation seeking ($AOR = 2.92$, 95% CI [1.5, 5.7]) and greater depression ($AOR = 2.06$, 95% CI [1.2–3.6]). A final multiple logistic regression analyses found that male gender ($AOR = 3.13$, 95% CI [1.7, 5.8]), drug use at last sex ($AOR = 2.41$, 95% CI [1.3, 4.5]), lifetime history of vaginal ($AOR = 2.90$, 95% CI [1.5, 5.5]) and anal sex ($AOR = 2.09$, 95% CI [1.2, 3.6]), and cocaine use ($AOR = 8.53$, 95% CI [2.7, 27.3]) were independently associated with having sex with a partner met online. Meeting sex partners online is associated with a variety of risks among African American youth; however, the Internet may be an opportunity for intervention.

Keywords

Black; African American; Adolescent; HIV; STI; Internet

Introduction

African American youth are disproportionately affected by HIV/AIDS and STIs. For example, African American adolescents represent approximately 17% of all teenagers but accounted for 72% of HIV/AIDS cases in this age group in 2007 (CDC 2009). As with HIV, there are disparities in rates of other STIs for minority youth. In 2007, for example, the rates

of gonorrhea among African American adolescent females 15–19 years was 14.7 times greater than those for Caucasian adolescent females, and the rate for adolescent African American males 15–19 was 38.7 times higher than for Caucasian males (Centers for Disease Control and Prevention [CDC] 2009; Fleming and Wasserheit 1999).

Among other groups at high risk for HIV and STI infection, such as men who have sex with men (MSM), research has examined the relationship between sexual risk and online behavior. For example, studies among MSM have found that those who seek sex partners online have greater HIV risk behaviors such as more partners, more anal sex, more unprotected sex, and greater drug use (Garofalo et al. 2007; McFarlane, Bull, & Rietmeijer 2000; Bull, McFarlane, & Rietmeijer 2001). Also, the use of chat rooms to meet sexual partners has been linked to STI outbreaks (Kalichman et al. 2005). The above reports and data have supported and inspired promising online prevention campaigns for adult MSM (Blas et al. 2010; Bowen, Horvath, & Williams 2007; Bull et al. 2004; Carpentar et al. 2010; Chen et al. 2008; Chiasson et al. 2010; Fields et al. 2006; Hirshfield et al. 2009; Klasner, Levine, & Kent 2004; Lau et al. 2008; Noar, Black, & Pierce 2009; Rhodes et al. 2010; Rosser et al. 2010); however, little is known about the use of the internet or chat rooms and the associated HIV risk behaviors of young, minority adolescents. There is also lack of online prevention efforts targeted to high risk African American youth (Noar and Palmgreen 2009; Chiasson, Hirschfield, Rietmeijer 2010).

The vast majority of studies examining online behaviors and sexual risk behaviors have been with adult MSM in part because of their initial greater access and adoption of online social networks and chat rooms. However, access to digital technologies has greatly grown. In 2009, 84% of 8–18 year olds had Internet access in their homes. In terms of ethnic and racial differences, recent data has shown that the “digital divide” between African American and Caucasian youth has become significantly reduced, with African American adolescents utilizing computer mediated technologies in equal amounts as their Caucasian and Hispanic counterparts (Rideout, Foehr, & Roberts 2010; Horrigan 2007, 2008, 2009; Ybarra and Bull 2007). Recently published data from African American teens in 4 U.S. cities who were predominantly low-income youth (75% eligible for a free or reduced-price school lunch) showed that the Internet was used daily for a variety of purposes: social networking (60.4%), Instant Messaging (53.4%), and to find facts or learn (46.9%). Among these African American youth, 72% used the Internet in their homes, and 72% went online at least once or twice a week to find facts or learn (Whiteley et al. 2011). Many minority adolescents have also gained access the Internet through their mobile phones. Currently, 46% of African Americans teens and young adults use their phones to access the Internet, compared with 33% of Caucasian teens and young adults (Lenhart 2010). Although recent data indicates that the digital divide is closing, the relationship of online technologies to HIV risk behaviors among African American adolescents is understudied and undervalued, and there remains a digital research divide (Boyar, Levine, Zensius 2011; Chiasson, Hirschfield, & Rietmeijer 2010; Noar and Palmgreen 2009).

The goals of this study are to examine HIV/STI risk behaviors and related constructs among African American adolescents who have used the Internet or chat rooms to find sex partners. Similar to studies among MSM, this information will help describe the relationship between online sexual risk behaviors in a group at risk for infection with HIV and STIs, and it can also inform future online STI/HIV prevention efforts targeted to black youth.

Methods

The present study examined data from 1,045 sexually active adolescents available from the 18-month assessment of a longitudinal HIV prevention study named Project iMPPACS

(Romer 2009; Vanable 2008). In Project iMPPACS, a total of 2,145 African American adolescents were recruited from 2 matched northeastern (Providence, RI, and Syracuse, NY) and 2 matched southeastern U.S. cities (Columbia, SC, and Macon, GA) for a group-based HIV prevention intervention for African American teens. The 4 selected cities are in regions of the United States with high HIV/AIDS rates, similar population sizes, and a high concentration of African American youth living at or below poverty level. Participants were recruited from community-based organizations with after school programs (21%), street outreach (9%), respondent driven sampling (15%), participant referral (29%), and referral from adults in the community (14%).

All adolescents aged 13 to 18 who were able to speak and read English were eligible to participate in the parent study. Of the 2,145 adolescents invited to participate in the study, 1,658 were consented, assessed at baseline, and randomized to a treatment condition (77%). At 18 months, 1,521 adolescents were assessed. Adolescents who did not participate in the month 18 assessment included those who reported having scheduling conflicts or lack of interest in the program and those who could not be reached to schedule their assessment. Of those assessed at 18 months, 1,045 adolescents (613 females, 432 males) were assessed to be sexually active, defined by answering “yes” to vaginal or anal sex (receptive or insertive). Only the 1,045 sexually active teens were used for the current analyses. Oral sex was assessed, but this activity was not used to define “sexually active.” The mean age of the 1,045 participants was 15.31 years ($SD = 1.12$), 100 % of the sample reported that they were African American, and 4% also reported Latino ethnicity. Participants were predominantly low-income youth, with 73% of girls and 76% of boys eligible for a free or reduced-price school lunch.

All study protocols were approved by the respective Institutional Review Boards. Informed consent was obtained from adolescents aged 18 or older, and adolescent assent and parental consent were obtained from those aged 13 to 17. Participants completed all assessment measures on laptop computers, using an audio computer-assisted self-interview (ACASI) program. Measures were administered by ACASI to minimize literacy issues and enhance confidentiality with report of sensitive behaviors.

The month 18 assessment battery took approximately 45 minutes to complete, and participants were compensated fifty dollars for their time and effort. Adolescents were assessed by ACASI for demographics variables, psychological constructs, and sexual risk taking attitudes and behaviors. Demographic information included age, gender, eligibility for free lunch, and race. Participants were asked the number of people they had vaginal and anal sex with and the relative frequency of condom use during vaginal and anal sex in the last 90 days (Carey 2002). For example, participants were asked, “with how many people have you had vaginal sex (receptive or insertive) with in your lifetime” (range = 0–300); “with how many people have you had anal sex with in your lifetime” (range = 0–300); “has a male ever put his penis in your bottom (some people call this receiving anal sex)” (Y/N); “have you ever put your penis in your partner’s bottom or anus (some people call this giving anal sex)” (Y/N). Participants were also asked about condom use in the past three months: for example, “in the past three months, how many times have you had vaginal sex (penis in the vagina) where you or your partner used a condom (rubber).” Participants were asked about alcohol and drug use with the following questions: “have you ever used marijuana (pot weed, grass, herb, reefer)” (Y/N); “have you ever used cocaine or crack” (Y/N); “have you ever used speed, uppers, or methamphetamine” (Y/N); “did you drink any amount of alcohol before the last time you had vaginal or anal sex” (Y/N); and “did you take any drugs (for example marijuana or cocaine) before the last time you had vaginal or anal sex” (Y/N).

The 8-item form of the Center for Epidemiological Studies Depression scale was used to assess symptoms of depression. Subjects rated each of 10 items on a scale from 0 to 4 (e.g., “how often you have felt depressed during the past week: 1 = less than 1 day, 2 = 1–2 days, 3 = 3–4 days, and 4 = 5–7 days”; Santor 1997).

Impulsivity was assessed with a 4-item scale: “I like to explore strange places,” “I like to do frightening things,” “I like new exciting experiences, even if I have to break the rules,” and “I prefer friends who are exciting and unpredictable.” Responses were rated from 1 (*strongly disagree*) to 5 (*strongly agree*; Cronbach’s alpha = .72). This impulsivity scale has been previously validated and used in large samples of adolescents to establish the relationship between sexual risk and impulsivity and sensation seeking (Spitalnick 2007).

Participants indicating a history of vaginal or anal intercourse completed a 10-item sexual sensation seeking scale (Spitalnick et al. 2007). This sexual sensation seeking scale has been used in previous studies with more than 700 African American adolescent girls and found a strong relationship between sexual sensation seeking and sexual risk (Donohew 2000). Participants answered questions about sexual sensation seeking with 10 items (e.g., “having sex with a new partner is exciting to me,” “I enjoy having sex at the spur of the moment”), with Likert response options to assess agreement/disagreement from 1 (*strongly agree*) to 4 (*strongly disagree*; Cronbach’s alpha = .69).

Agreement or disagreement with the sexual sensation seeking scale item “I have had sex with people I have met online or in chat lines” formed the basis for these analyses. Adolescents were contrasted based on their response to this item. Bivariate comparisons examined demographic associations. Any demographic variable found to be significant was entered in logistic regressions examining associations with substance use, sex risk, and psychological variables. In order to avoid multicollinearity in the final stepwise logistic regression analyses, representative single items were entered for vaginal sex, anal sex, drug use, drug use at the time of sex, and psychological constructs, in addition to significant demographic factors.

Results

Six percent of 1,045 subjects (mean age 15.31 years) reported meeting sex partners online or in chat rooms, and they were more likely to be male (71.0% vs. 39.5%, chi-square = 23.86, $p < .001$). There were no other demographic differences. Sex with partners met online was associated with alcohol and other drug use at time of last sex, a lifetime history of marijuana and cocaine use, unprotected vaginal and anal sex in the last 90 days, more lifetime vaginal sex partners, any anal sex partners lifetime, greater sexual sensation seeking, and greater depression. It was not associated with speed use or impulsivity (Table 1). Multiple logistic regression analyses (Table 2) found that male gender, other drug use at last sex, a lifetime history of more than 3 vaginal sex partners, anal sex partners lifetime, and cocaine use were significantly and independently associated with having sex with a partner met online.

Discussion

These data from African American adolescents in four cities found that a small but significant number reported meeting sex partners online and in chat rooms and that such behavior was associated with a range of HIV/STI risk behaviors. Similar to studies among MSM, black adolescents meeting sex partners online were more likely to have had anal intercourse. However, there is also the new finding of the association of meeting a sex partner on line with greater vaginal sex risk. Multiple regression analyses showed that the males and females meeting sex partners online were more likely to have had unprotected

vaginal sex acts in the last three months and were more likely to have had greater than 3 vaginal sex partners lifetime. The drug and sex risks are independently associated with finding sex partners on the internet and demonstrate the range of risks encountered by both males and females.

The study is limited by its convenience sample and lack of data on risk behavior specific to certain sites or specific to partners met on the internet. For example, data is not available on which particular websites teens used to meet sex partners. These cross sectional studies also cannot determine causality; however, these findings underscore the ease of access to the Internet by urban minority adolescents and their significant sexual risk behaviors.

The internet provides an opportunity to access and intervene to reduce HIV risk for black adolescents. Although Black adolescents are at great risk for HIV and other STI infection, and even though they have access to and frequently use the Internet, there are no written reports that we can locate that target adolescents or minority adolescents in the community with an easily accessible Internet-based HIV prevention program. The majority of studies that have examined computer-mediated or online STI/HIV prevention programs have been among adult MSM. Among these adult samples, computer and online interventions have shown promise. Of the 7 published randomized trials of intensive individual-level online HIV/STI behavioral interventions, targeted to adult MSM, 5 have demonstrated some reduction in 1 or more HIV risk behaviors (Carpenter et al. 2010, Rosser et al. 2010) such as short-term increases in knowledge, increases in HIV testing (Blas et al. 2010), or increased self-efficacy and outcome expectancies (Bowen, Horvath, & Williams 2007). Online HIV and STI prevention efforts should not be limited to MSM, and future efforts should extend online prevention to Black teens.

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Table 1

Logistic Regression Analyses of Substance Use, HIV/STI, and Psychological Factors among African American Adolescents Using the Internet to Find Sex Partners

Variable	<u>Internet for meeting sex partners</u>		
	% Agree/Yes	% Disagree/No	AOR [95% CI]
Substance use			
Alcohol at last sex	17.7	7.5	2.33 [1.1, 4.7]
Other drugs at last sex	33.9	11.2	3.45 [1.9–6.1]
Lifetime marijuana	67.7	45.7	2.23 [1.3–3.9]
Lifetime cocaine	11.3	0.9	13.12 [4.5–38.6]
HIV/STI risk			
Unprotected vaginal sex acts in last three months	80.9	55.5	4.71 [1.9–8.4]
Unprotected anal sex acts in last three months	85.0	54.8	4.77 [1.3–17.1]
>3 lifetime vaginal sex partners (median split)	77.4	42.5	3.65 [2.0–6.8]
Any lifetime anal sex partners	45.2	24.0	2.74 [1.5–4.8]
Psychological scales ^a			
Impulsivity (high/low)	79.0	46.7	1.62 [.94–2.8]
Depression (high/low)	27.4	20.3	2.06 [1.2–3.6]
Sexual sensation seeking (high/low)	79.0	46.7	2.92 [1.5–5.7]

Note. AOR= odds ratio adjusted for gender

^aScales split at median for ease of interpretation

Table 2

Multiple Logistic Regression Analysis of Factors Associated with Using the Internet to Find Sex Partners among African American Adolescents

Variable	Nagelkerke R^2	OR [95% CI]
Gender (male)	.062	3.13 [1.7, 5.8]
Depression (high) ^a	.080	1.57 [.9, 2.8]
Other drugs at last sex	.114	2.41 [1.3, 4.5]
>3 Vaginal sex partners lifetime	.149	2.90 [1.5, 5.5]
Anal sex partner lifetime	.170	2.09 [1.2, 3.6]
Cocaine use lifetime	.198	8.53 [2.7, 27.3]

Note. AOR= odds ratio adjusted for all variables in final model

^aScale split at median for ease of interpretation