Title

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The relationship between online social network use, sexual risk behaviors, and HIV sero-status among African American and Latino men who have sex with men (MSM)

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Abstract

Social networking technologies have emerged as potential platforms to reach HIV(+) MSM of color in HIV interventions. This study sought to compare use of online social networking sites (SNS) and sexual risk behaviors between HIV(+) and HIV(-) individuals among a sample of SNS-using MSM of color.

A total of 112 African American and Latino MSM Facebook users completed an online survey. We performed regression models to assess the association between HIV status, SNS use, and sexual risk behaviors.

Being HIV positive was significantly associated with having a greater number of sexual partners met online (B:8.04, 95%CI:2.11–13.97), male sexual partners (9.09:1.52–16.66), and one-time sexual partners (8.99:1.90–16.07), and lower comfort levels of discussing HIV/STI status online (aOR:0.23:0.072–0.71).

Findings suggest that HIV status is associated with sexual risk behaviors and SNS use among MSM of color SNS users. We discuss the implications for online HIV prevention.

Keywords

sexual risk behaviors; online social networks; social media; African American and Latino men who have sex with men; HIV/AIDS prevention

INTRODUCTION

Even after three decades, HIV/AIDS remains a tremendous public health challenge in the U.S. In 2009, over 1 million adults (ages 13 or over) were living with HIV/AIDS, and it was estimated that 50,000 individuals were newly infected with HIV (1, 2). Male-to-male sexual contact remains the most prevalent transmission mode. In 2010, more than half of newly diagnosed HIV cases and people living with an HIV diagnosis were men who have sex with men (MSM) (3). In particular, the HIV/AIDS rates of African American and Latino MSM

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are significantly higher than MSM of any other racial and ethnic groups (4–7). Studies have found that MSM of color were less likely to test for HIV, access HIV/AIDS care, be retained in care, adhere to HIV/AIDS medications, and survive 5 years after HIV/AIDS diagnosis (4–8).

Lack of awareness of HIV status is attributed as a key factor in the disproportionately high HIV rates among African American and Latino MSM (4, 6, 7, 9). Recent public health programs have focused on increasing the number of individuals who are aware of their HIV infection through HIV testing, linking these individuals to care, and initiating HAART treatment; this strategy is also known as the “test-and-treat” strategy (10, 11). In addition, building on the test-and-treat model, researchers have increasingly focused on the importance of “positive prevention” to reduce sexual risk behaviors among HIV-positive individuals to combat HIV transmission (12–15). Efforts to engage African American and Latino MSM in positive prevention is often hindered by high levels of stigma/shame against HIV/AIDS exacerbated by racism, poverty, and homophobia (9, 16–20).

Because SNS use has increased rapidly in the past decade (21), these technologies have emerged as potential platforms to engage HIV-positive individuals in prevention programs. Recently, the percentage of adults and teens using SNS technologies skyrocketed. In 2013, 73% and 80% of adults (ages 18+) and teens (ages 12–18) used some form of social media, respectively (22, 23). In addition, sexual (gay/bisexual) and racial (African Americans and Latinos) minority individuals have been found to be the most avid social media users (24, 25). Studies have documented that many African American and Latino MSM use SNS technologies to meet new sexual partners to avoid stigma (26). In addition, many HIV-positive individuals have used the Internet to seek emotional social support and HIV/AIDS-related health information to cope with the stress of being HIV-positive (27–31). Recent studies have shown some potential in using social media (i.e. Facebook) to educate and to promote HIV prevention behaviors (32, 33), and this technology might also be effective in retaining HIV-positive individuals in care. However, little is known about how HIV-positive individuals use SNS technologies as well as their sexual behaviors online. Therefore, this study sought to compare online SNS use and sexual risk behaviors between HIV-positive and HIV-negative individuals among a sample of SNS-using African American and Latino MSM.

METHODS

A total of 112 participants were recruited and completed a 92-item survey. The current study focused on working with HIV high-risk populations, particularly African American and Latino MSM. The protocol adhered to the current recommendations for conducting HIV research using SNS technologies (34), and the study was approved by the Institutional Review Board (IRB) at the University of California, Los Angeles (UCLA).

The study recruited participants online and offline. Offline participants were recruited from gay establishments in Los Angeles (e.g. bars, schools, gyms, and community organizations) and participant referrals. Internet recruits were directed to the study website from targeted banner ads and posts on SNS platforms (e.g., Facebook and MySpace), a Facebook fan page,

and Craigslist. Interested individuals were then linked to the eligibility page from the ads. The eligibility requirements included: 1) male, 2) 18 years or older, 3) Los Angeles residents, 4) registered Facebook users, and 5) have had sex with a man in the past 12 months. Only participants who were successfully verified by the "Facebook Connect" technology as unique Facebook users were permitted to participate in the study. The participants received $30 for completing the survey.

Measures

Basic demographics—Demographic questions included age, sexual orientation, race, highest education level, employment status, marital/partnership status, and primary access to the Internet (cellphones vs. computers).

HIV status

Participants were asked to respond to "have you ever been told by a health care provider or counselor that you have HIV/AIDS". If the participants responded yes, they were classified as HIV-positive; otherwise, they were HIV-negative.

Online social network use

Participants were asked to indicate the amount of time they spent on SNS in the past 3 months on a daily basis (in categories of time increments), and the comfort level and frequency of discussing the following sexual topics on online SNS: 1) sexual partners (i.e. how many times have you talked to someone about sexual partners on SNS); 2) sexual positions, 3) sexual health, 4) using condoms during sex, 5) using drugs or alcohol during sex, 6) getting an HIV/STI test, 7) HIV/STI status, 8) having sex with men, and 9) having sex with women. To assess how SNS use might have impacted participants' sexual risk behaviors, participants were asked to rate the ease and the importance of using SNS to meet new sexual partners.

Sexual Risk behaviors

Participants were asked to estimate the number of sexual partners met on SNS, male sexual partners, primary sexual partners, and one-time sexual partners in the past 3 months. Other sexual risk behaviors included frequency of unprotected sex (vaginal, insertive anal, and receptive anal) in the past 3 months.

Statistical Analysis

All analysis was conducted in R-3.0.2 for Mac OSX. Binary association between HIV status and demographic variables, SNS use, and sexual risk behaviors was assessed using 2-sample t-test and chi-square test. Regression models were used to further investigate outcomes that were significantly associated with HIV-status in binary assessment. The study used linear regression for continuous outcomes (e.g. no. of sexual partners met online), logistic regression for binary outcomes (e.g. have you ever exchanged sex for money, place to stay, food, and drugs), and cumulative link regression for ordinal outcomes (e.g. comfort level of discussing HIV/STI status online). All multivariate models used HIV status as independent variable and adjusted for age, race, and employment status.

RESULTS

Basic demographics (see Table I)

Fifteen participants indicated that they had been told by a health care provider or counselor that they have HIV/AIDS (HIV-positive). The mean age for HIV-positive individuals was 42.29, and they were significantly older than HIV-negative individuals (<0.001). Most participants identified as gay. HIV-positive participants were more likely to be Latino (40%), single (73.3%), and access the Internet primarily through computers (93.9%).

Online social network use (see Table II)

More than half of the participants, regardless of their HIV status, used SNS more than 1 hour every day in the past three months. There was no difference in the frequency of talking about HIV/STI status on SNS. However, more HIV-positive individuals felt very uncomfortable (40% vs. 13.8%) discussing HIV/STI status with others on SNS. The majority of the participants, regardless of their HIV status, found using SNS to meet new sexual partners to be easier than face-to-face encounters. In both groups, more than 50% of the participants were indifferent or did not think SNS were important to meet new sexual partners.

Sexual Risk behaviors (see Table III)

On average, HIV-positive individuals had more sexual partners they had met using SNS (10.2 vs. 3.2), more male sexual partners (11.77 vs. 4.96), and more one-time sexual partners (9.54 vs. 2.47) in comparison to HIV-negative individuals. In both HIV-positive and HIV-negative individuals, approximately half of the participants did not practice unprotected anal intercourse (receptive and insertive).

Adjusted odds ratios (see Table IV)

Being HIV positive was significantly associated with more sexual partners met using SNS (B: 8.04, 95% CI: 2.11, 13.97), male sexual partners (B: 9.09, 95% CI: 1.52, 16.66), and one-time sexual partners (B: 8.99, 95% CI: 1.9, 16.07) after adjusting for demographics. In addition, being HIV positive was significantly associated with lower comfort levels of discussing HIV/STI status on SNS (aOR: 0.23, 95% CI: 0.072, 0.71).

DISCUSSION

To the best of our knowledge this is the first study to compare SNS use and sexual risk behaviors between HIV-positive and HIV-negative SNS-using minority MSM. HIV-positive African American and Latino MSM and their HIV-negative counterparts did not differ in most uses of social networking technologies. However, we found that HIV positive individuals were less comfortable discussing HIV/STI status with others on SNS. Previous studies have documented that many HIV-positive individuals use the Internet to find social support and to develop communities with other HIV-positive individuals with similar experiences (27, 31). Therefore, HIV-positive participants may only be comfortable discussing their HIV/STI status on websites that are specifically tailored to support people living with HIV/AIDS.

Even though participants' perception of using SNS to meet sexual partners did not differ by HIV status, HIV-positive individuals had significantly more sexual partners met using SNS. To avoid high levels of homophobia and HIV/AIDS stigma in minority communities, HIV-positive individuals might find using SNS to be a discreet option to find new sexual partners (26). In addition, because of homophobia and racism, many African American and Latino MSM have expressed difficulties in finding social support and acceptance from their own communities and the predominately White gay culture (19). HIV-positive African American and Latino MSM might face further alienation because of their HIV status. This alienation limits their interaction with other MSM to casual sexual encounters (35), and therefore, HIV-positive individuals might have more one-time sexual partners. While we did not observe high levels of sexual risk behaviors among HIV-positive participants, previous studies suggested that unprotected anal intercourse, both insertive and receptive, occurs mostly in casual sexual encounters for HIV-positive individuals (35), and constitutes a public health challenge.

There are a few limitations to the study. First, by using online recruitment, the study was not able to ascertain the identities of the participants. Second, the study had a small number of HIV-positive African American and Latino MSM with reduced statistical power. In addition, the study also relied on self-reported HIV status rather than diagnosis based on biological specimen. When comparing self-report data and blood assessment results, many African American and Latino MSM were unaware of their seropositive status (6, 9). Therefore, basing HIV status on self-report data might underestimate the number of HIV-positive participants in this sample. Lastly, the study did not collect data on time since HIV diagnosis (i.e., was the participant diagnosed HIV-positive last month or has the participant been coping with HIV for years). People living with HIV for a longer time might have developed the necessary coping or risk-reduction strategies and might have different risk profiles from those who are newly diagnosed. For example, many HIV-positive MSM practice mostly unprotected receptive intercourse with seronegative or unknown status partners to reduce the likelihood of HIV transmission (36).

While major efforts in HIV prevention to date have focused on working with at-risk populations, there is a dire need to develop innovative strategies to retain HIV-positive individuals in care. Stigma against HIV/AIDS, homosexuality, race, and other social issues remains a major barrier for retention in care particularly among African American and Latino MSM (9, 16–20). To avoid the stigma, many individuals have turned to the Internet for HIV-related information and social support to cope with their positive status (27–31, 37), as SNS technologies have been used to facilitate intimacy and online communities for people to share sensitive information about sexual behaviors and HIV with HIV at-risk populations (32, 33). In addition, SNS technologies have been effective in educating at-risk populations on HIV prevention behaviors (32, 33). The implications of using SNS technologies for HIV prevention are immense as more research is calling for interventions to educate HIV-positive individuals on disclosing HIV status and negotiating safer sex to reduce further HIV re-infection and transmission (15).

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Table I

Basic demographics by HIV status

		HIV(−) (n =97)		HIV(+) (n=15)	
		n	**%**	**n**	**%**
Age[+]	Means (sd)	30.38	9.24	42.29	10.3
Sexual orientation					
	Gay	74	76.3	11	73.3
	Bisexual	18	18.6	3	20
	Heterosexual/others[a]	5	5.2	1	6.7
Race					
	Black/African American	26	26.8	5	33.3
	Latino	61	62.9	6	40
	Others[b]	10	10.3	4	26.7
Highest education level					
	High school/G.E.D	41	42.3	3	20
	Associate degree	20	20.6	5	33.3
	Bachelors degree	28	28.9	2	13.3
	Graduate school	8	8.2	5	33.3
Employment status					
	Unemployed/student/others[c]	41	42.3	6	40
	Part-time	23	23.7	2	13.3
	Fulltime	33	34	7	46.7
Marital status					
	Single	81	83.5	11	73.3
	Married/partner	11	11.3	2	13.3
	Divorced/widowed/others[d]	5	5.2	2	13.3
Primary access of Internet					
	Computer/others[e]	81	83.5	14	93.3
	Cellphones	16	16.5	1	6.7

[a] Heterosexual and don't know

[b] White, Asian/Pacific Islanders, and American Indian/Alaska Native

[c] Unemployed, disabled (not able to work), fulltime stay home dads, students, and retired

[d] Divorced, separated, widowed, and others

[e] Home, library, office/work, school, and Internet cafés

[+] $p < 0.001$

Table II

Online social network use by HIV status

		HIV(−)		HIV(+)	
		n	**%**	**n**	**%**
Time spent on online social networks daily					
	None	2	2.1	0	0
	0–1 hour	24	24.7	3	20
	1–2 hours	31	32	7	46.7
	3–4 hours	16	16.5	3	20
	4–5 hours	10	10.3	2	13.3
	5 or more hours	14	14.4	0	0
Comfort level discussing HIV/STI status on online social networks [+]					
	Very uncomfortable	13	13.8	6	40
	Uncomfortable	7	7.4	2	13.3
	Average	11	11.7	2	13.3
	Comfortable	27	28.7	2	13.3
	Very comfortable	36	38.3	3	20
Frequency of talking about HIV/AIDS on online social networks					
	0 times	32	33	6	40
	1–5 times	33	34	7	46.7
	6–10 times	12	12.4	0	0
	11–15 times	7	7.2	1	6.7
	16–20 times	3	3.1	0	0
	21–25 times	3	3.1	0	0
	25+ times	7	7.2	1	6.7
The ease of using online social networks to meet new sexual partners in comparison to face-to-face encounters					
	Much more difficult	6	7.1	1	7.1

		HIV(−)		HIV(+)	
		n	%	n	%
	Difficult	3	3.6	1	7.1
	Neither more difficult nor easier	16	19	3	21.4
	Easier	23	27.4	4	28.6
	Much easier to meet people	36	42.9	5	35.7
The Importance of using online social networks to meet new sexual partners					
	Not at all important	33	34.4	7	46.7
	Somewhat important	11	11.5	1	6.7
	Neither important nor unimportant	22	22.9	3	20
	Important	16	16.7	2	13.3
	Very important	14	14.6	2	13.3

$^{+}$ $p < 0.05$

Table III

Sexual risk behaviors by HIV status

		HIV (−)		HIV (+)	
		N	**%**	**n**	**%**
No. of sexual partners met using online social networks[+]	Mean (sd)	3.2	3.85	10.2	25.28
No. of male sexual partners[+]	Mean (sd)	4.96	7.21	11.77	26.96
No. of one time sexual partners[+]	Mean (sd)	2.47	5.08	9.54	27.4
Frequency of unprotected receptive anal sex					
	0 times	51	57.3	7	53.8
	1–10 times	33	37.1	5	38.5
	11–20 times	2	2.2	1	7.7
	21–30 times	0	0	0	0
	31–40 times	1	1.1	0	0
	41–50 times	0	0	0	0
	50+ times	2	2.2	0	0
Frequency of unprotected insertive anal sex					
	0 times	47	52.8	7	53.8
	1–10 times	35	39.3	4	30.8
	11–20 times	4	4.5	2	15.4
	21–30 times	1	1.1	0	0
	31–40 times	0	0	0	0
	41–50 times	1	1.1	0	0
	50+ times	1	1.1	0	0

[+] $p < 0.05$

Table IV

Adjusted odds ratios (aORs) for sexual risk behaviors and online social network use by HIV status

	AORs (B)	95% CI	
No. of sexual partners met using online social networks++	8.04	2.11	13.97
No. of male sexual partners+	9.09	1.52	16.66
No. of one time sexual partners+	8.99	1.9	16.07
Comfort level discussing HIV/STI status on online social networks+	0.23	0.072	0.71

+ $p < 0.05$

++ $p < 0.01$

All models adjusted for age, race, and employment status