Title
The Relationship between Online Social Networking and Sexual Risk Behaviors among Men Who Have Sex with Men (MSM)

Permalink
https://escholarship.org/uc/item/54c812dr

Journal
PLoS ONE, 8(5)

Authors
Young, SD
Szekeres, G
Coates, T

Publication Date
2013-05-01

DOI
10.1371/journal.pone.0062271

Peer reviewed
The Relationship between Online Social Networking and Sexual Risk Behaviors among Men Who Have Sex with Men (MSM)

Sean D. Young1*, Greg Szekeres2, Thomas Coates3

1 Department of Family Medicine, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, California, United States of America, 2 Program in Global Health, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, California, United States of America, 3 Program in Global Health, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, California, United States of America

Abstract

Online social networking usage is growing rapidly, especially among at-risk populations, such as men who have sex with men (MSM). However, little research has studied the relationship between online social networking usage and sexual risk behaviors among at-risk populations. One hundred and eighteen Facebook-registered MSM (60.1% Latino, 28% African American; 11.9% other) were recruited from online (social networking websites and banner advertisements) and offline (local clinics, restaurants and organizations) venues frequented by minority MSM. Inclusion criteria required participants to be men who were 18 years of age or older, had had sex with a man in the past 12 months, were living in Los Angeles, and had a Facebook account. Participants completed an online survey on their social media usage and sexual risk behaviors. Results from a multivariable regression suggest that number of sexual partners met from online social networking technologies is associated with increased: 1) likelihood of having exchanged sex for food, drugs, or a place to stay within the past 3 months; 2) number of new partners within the past 3 months; 3) number of male sex partners within the past 3 months; and 4) frequency of engaging in oral sex within the past 3 months, controlling for age, race, education, and total number of sexual partners. Understanding the relationship between social media sex-seeking and sexual risk behaviors among at-risk populations will help inform population-focused HIV prevention and treatment interventions.

Introduction

Within the United States, a disproportionate number of incident HIV infections and new diagnoses of HIV (e.g., cases detected long after incident infection) lie within men who have sex with men (MSM). In Los Angeles, for instance, over 75% of all infections are attributable to MSM [1,2,3]. Among MSM in the United States, Latinos accounted for 20% of new infections and African Americans accounted for 37% of new infections [4]. To address the epidemic among at-risk populations, researchers have requested innovative approaches for understanding and preventing sexual risk behaviors.

Online technologies have been rapidly growing in use and may play a role in facilitating sexual risk behaviors, especially among at-risk populations [5,6]. Internet use was previously used primarily among upper-middle-class white populations, however, minority groups have increasingly used online technologies [7]. For instance, in the United States, from 2005 to 2006, there was a 121% increase in the number of African American households with high-speed Internet connections and a 46% increase in Latino households with broadband usage, with 56% of Latinos using the Internet on a daily basis [8,9]. In fact, English-speaking Latinos are almost identical to Whites in their use of Internet and home broadband [10], and African Americans and Latinos are more likely than Whites to access the Internet from mobile devices [11].

Social networking technologies, platforms for virtual social communication, have been the predominant factor for the growth in online technology use among minority groups. Social networking sites, such as Facebook, Grindr, and Twitter, are online platforms designed for social communication through sharing of pictures, messages, and other forms of multi-media communication [12]. African Americans and English-speaking Latinos are almost 1.5 times more likely to use online social networking sites compared to the general adult population (33% of African Americans, 36% of English-speaking Latinos, and 23% of adults in the general population). This trend is consistent in Twitter usage, online video usage, and usage of location-based devices [13]. In addition, gay, lesbian, and bisexual individuals use social networking technologies more often than heterosexual individuals [9].

Although research has explored the link between Internet use and sexual risk behaviors [14,15,16,17], little work has focused on social networking use and sexual risk. However, it is especially important to study the relationship between social networking and sexual risk behaviors because these technologies were specifically designed for social (and potentially sexual) communication and...
interaction [12,18]. Research from (non-social networking) Internet studies suggest that, compared to people who do not seek sex on the Internet, Internet sex seekers tend to have: more frequent anal sex, more previously diagnosed STIs, more sexual exposure to men, greater numbers of sex partners, and higher numbers of sex partners known to be HIV positive [14]. Social networking users have a potentially increased risk, as social networking technologies allow users to engage in real-time interaction that can be used to initiate rapid sexual encounters. For example, people can use location-based mobile applications such as SexMap (DoubleD, 2012) and Grindr (Nearby Buddy Finder, LLC, 2009) to search for potential sexual encounters with others in immediate geographic proximity. It is therefore important to evaluate how social networking technologies might affect sexual risk behaviors, especially among social networking users who are at high-risk for HIV, such as MSM.

This study seeks to determine the relationship between social networking use and sexual risk behaviors among minority MSM. Specifically, we assess 1) rates of using social networking technologies for sex-seeking, and 2) sexual risk behaviors associated with seeking sex on online social networks.

**Methods**

This study was conducted according to the principles expressed in the Declaration of Helsinki. The UCLA Office of the Human Research Protection Program approved this study. Methods conform to recommended guidelines for using social networking technologies in HIV prevention research [19]. Participants provided a web-based informed consent.

Over a period of 4.5 months (September 2010-January 2011), 122 participants were recruited online, from physical venues frequented by African American and Latino MSM (e.g., bars, clubs, and universities), and from direct referrals from study participants. Participants were paid $30 in gift cards to complete a survey. Four participants were found to have completed multiple surveys. Their second response was dropped, leaving 118 participant responses. Six participants completed part of the survey. Their responses (when available) are included in this analysis.

Participants were recruited online using the following methods: (1) paid, targeted banner ads on social networking sites (Facebook.com, Myspace.com), and (2) setting up a fan page on Facebook with information describing the study. Participants recruited using online methods were directed to a website where they could receive more information and enroll.

Fliers placed in physical venues frequented by African American and Latino MSM described the study and provided a contact email address and a web link for participants to receive more information and enroll. Most fliers were culturally tailored, including a picture of a male Latino or African American, stating that the study was looking for male participants who were 18 years of age or older, African American or Latino, interested in men, and had a Facebook account. Fliers provided a contact email address and link to a Website where participants could receive more information and enroll. Participants were informed that they could refer friends who were interested and fit the inclusion criteria. Participants were not paid additional incentives to refer friends.

Potential participants visited the study Website and were screened for eligibility. Eligible participants were males who were: 18 years of age or older, living in Los Angeles, had had sex with a man in past 12 months, and had a Facebook account. Because we attempted to recruit a sample of predominantly minority MSM, we first recruited 70% of the sample from these populations and then opened recruitment to MSM from other populations. Participants were excluded if they did not fit inclusion criteria. A Facebook Connect application was used as a verification tool to ensure that each participant had a registered and unique Facebook account. If the eligible participant consented to the study, he had to provide his Facebook username and password through Facebook Connect. Once this connection method verified his status as a Facebook participant, he was asked to input his email address, phone number, and completed an online survey.

The 92-item online survey took approximately 45 minutes and included a collection of items from previous research on sexual risk behaviors. Internet use, as well as a number of novel items related to use of social networking technologies. Items focused on demographics (age, gender (to ensure that all participants reported being men), race/ethnicity, income, and education); Internet and social media usage; and sexual health behaviors (see Participant Questionnaire). Prior to responding to items related to social media use, participants were given a definition of social networking sites along with a list of examples sites (such as Facebook and Myspace). Internet and social media usage items focused on the amount of time spent using the Internet and social media (in hours per day, days per week); reasons for using these technologies (e.g., news, dating, finding sex partners); and comfort when using these technologies to talk about sexual risk behaviors. For example, after a description of the difference between general Internet sites and social networking sites, participants were asked about their use of social networking sites for seeking sex, “In the past 3 months, have you exchanged sex for food, drugs, or a place to stay? For example, participants were asked, “In the past 3 months, have you exchanged sex for food, drugs, or a place to stay?”

Chi-square tests were used to assess differences in population demographics, Internet and social media usage, and sexual risk behaviors. Analysis of variance (ANOVA) tests were used to assess differences in age between groups as well as to confirm Chi-square differences on continuous variables. Multiple regression analysis was used to assess the relationship between number of sex partners met on the social networks and exchanged sex, new sex partners, sex with men, and oral sex, controlling for age, race, education, and total number of sex partners. Total number of sex partners was added to control for the possibility that group differences in social networking sex partners could be accounted for by overall increases in sex partners. Analyses were performed on de-identified data using Stata software [20].

**Results**

As Facebook Connect was used to verify Facebook status, 100% of participants were current Facebook users. Slightly less than half of the sample used Myspace (45.5%) and Twitter (44.6%), with a smaller portion using Grindr (18.8%) and various sex-seeking sites such as Adam4Adam.com and Manhunt.com (18.8%).

Table 1 displays the demographic results between populations and in the overall sample. Participants were predominantly Latino (60.1%) or African American (28%). The majority of participants had at least a high school education, with over 60% of participants from the western United States. Almost all participants reported...
being either gay (76.3%) or bisexual (17.8%), and single (82.2%).
The average age of the sample was just under 32 years of age, with
White participants on average being older than the rest of the
sample. Group differences by population were found on education
level, birthplace, and age.

The majority of participants had used the Internet and online
social networking technologies to meet new sex partners within the
past 3 months. On average, participants met over 4 of their most
recent sex partners using these technologies. Compared to African
Americans, Latinos on average more frequently used Internet/
social networking technologies to meet sex partners (Tables s2 and
s3).

Table s4 presents results of a regression analysis looking at
exchanged sex, new sex partners, sex with men, and oral sex as
outcomes. Controlling for age, race, education, and total number
of sex partners, there was a significant positive relationship
between number of sex partners met from online social networking
technologies and 1) likelihood of having exchanged sex for food,
drugs, or a place to stay, 2) number of new sex partners within the
past 3 months, 3) number of male sex partners within the past 3
months, and 4) likelihood of engaging in oral sex.

Discussion

Results from an analysis of MSM social networking users
suggest that MSM are using online social networking technologies
for sex-seeking, and that meeting sexual partners from social
networking sites is associated with increased likelihood of engaging
in sexual risk behaviors. Those who met sexual partners from
social networking sites were more likely than those who did not
to have exchanged sex for food, drugs, or a place to stay; have new
sex partners within the past 3 months; have had sex with a greater
number of men; and have engaged in oral sex. These effects were
not due to the possibility that people who engage in more frequent
sexual encounters engage in more sexual risk behaviors (as we
controlled for overall number of sex partners), but were unique to
sex-seeking on social networking sites. These results are important
because they suggest that social networking websites, when used
for sex-seeking, may be associated with transmission of HIV and
other sexually transmitted infections.

The ability to recruit African American and Latino MSM
Facebook users for this study provides support that minority
groups are actively and increasingly using social media technol-
gies.[10,13] This study builds on those findings by suggesting that
minority MSM are actively using social networking technologies
for seeking sex. Knowledge of these changing trends is useful for
understanding both the (virtual and physical) locations and
behaviors of at-risk groups so that these same technologies that
could potentially facilitate HIV transmission could also be used for
HIV prevention. Latino MSM appear to be especially likely to use
social networking technologies to search for sex partners. This
finding could be useful in helping Latino MSM researchers
understand how to use social networking technologies for Latino
MSM recruitment and for development of culturally-tailored HIV
prevention interventions.

This study builds on research on the relationship between
Internet use and HIV risk [14,16,21,22] by showing that number of
sex partners met on social networking sites was associated with
increased likelihood of engaging in sexual risk behaviors (e.g.,
exchanging sex and meeting new sex partners). However, number
of sex partners from social networking sites was also associated
with an increased likelihood of having had oral sex. This finding
may provide support that the social networking sites do not
necessarily lead to increased HIV transmission, as people using the

Conclusion

The present study suggests that African American and Latino
MSM are using social networking technologies to search for and
meet sex partners, and those who use these technologies are more
likely to engage in HIV risk behaviors. Understanding how at-risk
populations use social networking technologies is important for
crafting and scaling culturally-tailored HIV prevention interven-
tions.

Supporting Information

Table S1 Socio-demographic Characteristics of Study
Participants (N = 118), Los Angeles, CA, 2011.

(DOC)
Table S2  Internet and sex-related behaviors (N = 118), Los Angeles, CA 2011.

Table S3  Online sex seeking and sexual behaviors, by race (N = 118), Los Angeles, CA, 2011.

Table S4  Analysis of exchanged sex, new sex partners, sex with men, and oral sex, (N = 118), Los Angeles, CA, 2011.

Author Contributions
Conceived and designed the experiments: SY GS TC. Performed the experiments: SY. Analyzed the data: SY. Contributed reagents/materials/analysis tools: SY. Wrote the paper: SY GS TC.

References
20. StataCorp (2011) Stata Statistical Software. College Station, Tx: StataCorp, LP.