Published in final edited form as:

AIDS Care. 2017 January ; 29(1): 56–60. doi:10.1080/09540121.2016.1198748.

Designing a sexual network study of men who have sex with other men: exploring racial and ethnic preferences in study design and methods

Katie B. Biello^{a,b,c}, Jowanna Malone^d, Kenneth H. Mayer^{a,e}, Angela Robertson Bazzi^{a,f}, and Matthew J. Mimiaga^{a,b,c}

^aThe Fenway Institute, Fenway Health, Boston, MA, USA

^bDepartment of Behavioral & Social Sciences and Epidemiology, Brown University School of Public Health, Providence, RI, USA

^cInstitute for Community Health Promotion, Brown University School of Public Health, Providence, RI, USA

^dDepartment of Epidemiology, Harvard T. H. Chan School of Public Health, Boston, MA, USA

^eDepartment of Global Health and Population, Harvard T. H. Chan School of Public Health, Boston, MA, USA

^fDepartment of Community Health Sciences, Boston University School of Public Health, Boston, MA, USA

Abstract

Black and Latino gay, bisexual, and other men who have sex with men (MSM) have higher rates of HIV and other sexually transmitted infections (STIs) than their White counterparts. Differences in sexual networks have been hypothesized to play an important role in the observed racial/ethnic disparities in risk. However, concerns about the acceptability and feasibility of conducting sociocentric sexual network studies have left a dearth of data on the structure of sexual networks of MSM. If certain network research procedures are unacceptable among target populations, biases may be introduced. We conducted qualitative interviews and brief surveys with 30 self-identified Black ($n = 12$), Hispanic/Latino, ($n = 9$) and White ($n = 9$) sexually active MSM in the Greater Boston area to assess the acceptability and feasibility of potential procedures for a sociocentric sexual network study. We found that referring recent sexual partners as part of a sociocentric network study was generally acceptable, but racial/ethnic differences emerged regarding specific preferences for how to recruit sexual partners. While the majority of Black participants (7/12) explained that they would not want their name disclosed to sexual partners approached for study participation, most Latino participants (7/9) preferred having the opportunity to inform referrals themselves about the study prior to researchers contacting them, and White participants (8/9) favored having researchers disclose their names when recruiting referrals, emphasizing the

CONTACT Katie B. Biello, katie_biello@brown.edu, Institute for Community Health Promotion, Brown University School of Public Health, 121 South Main Street, Box G-S121-8, Providence, RI 02912, USA.

Disclosure statement

No potential conflict of interest was reported by the authors.

importance of transparency. In order to reduce differential rates of research participation, increase scientific validity, and reduce risks of social harm, researchers studying sexual networks among MSM should be aware of these potential differences, engage communities in study design, and provide participants with a variety of options for recruiting their sexual partners.

Keywords

HIV; racial disparities; sexual networks; study design

Introduction

Black and Latino gay, bisexual, and other men who have sex with men (MSM) experience higher HIV/sexually transmitted infection (STI) risk than White MSM (Centers for Disease Control and Prevention, 2010; Millett, Flores, Peterson, & Bakeman, 2007), yet behavioral risk (e.g., multiple sexual partners, unprotected anal sex) does not entirely explain these racial/ethnic disparities (Magnus et al., 2010; Sullivan et al., 2014). Differences in sexual network characteristics (e.g., network size and racial composition) may also play important roles (Adimora & Schoenbach, 2005; Wohlfeiler & Potterat, 2005).

Social network theory (Granovetter, 1982) posits that understanding relationships between individuals within networks can illuminate important infectious disease transmission processes (Doherty, Padian, Marlow, & Aral, 2005; Friedman et al., 1997; Latkin et al., 2009; Rothenberg et al., 1998). Sexual network research among heterosexual populations has shown that Blacks have fewer but higher risk sexual partners than Whites (Laumann & Youm, 1999) and are more likely to have sex with individuals of the same race, possibly increasing transmission within groups in which HIV/STI prevalence is already high (Adimora & Schoenbach, 2005; Adimora, Schoenbach, & Doherty, 2006; Berry, Raymond, & McFarland, 2007; Bingham et al., 2003; Laumann & Youm, 1999; Raymond & McFarland, 2009). However, despite high concentrations of HIV/STIs among Black MSM (Hurt et al., 2012; Millett et al., 2011; Oster et al., 2013), research on social and sexual networks in this population remains limited.

Furthermore, most existing sexual network research has relied on *egocentric* data on sexual partnerships collected from isolated individuals, leaving investigators unable to assess true network structures. While *sociocentric* data collected from all individuals within networks are preferable, concerns regarding the acceptability and feasibility of this type of research prevail, resulting in a dearth of data illuminating racial/ethnic disparities in HIV/STI transmission among MSM. For example, researchers question the willingness of individuals to name and provide contact information for their sexual partners, yet if such “contact tracing” procedures, similar to those used in provider-initiated STI partner notification services (Mimiaga et al., 2009), are unacceptable among those most affected by HIV/STIs, this sociocentric research will be affected by selection bias (Ghani, Donnelly, & Garnett, 1998). We thus sought to explore the acceptability of specific sociocentric study procedures among racially/ethnically diverse MSM.

Methods

We recruited 30 MSM recruited through community-based organizations in Boston. Eligible participants were 18 years old, assigned male sex at birth, identified as male (cisgender), had 1 male sexual partner (past 6 months), and self-identified as Black (non-Latino), Hispanic/Latino (any race), or White (non-Latino). We purposively sampled men with maximum diversity in race/ethnicity and risk behavior profiles (Guest, Bunce, & Johnson, 2006; Johnson, 1990). Participants completed an informed consent process and received \$50 as reimbursement for their time. The Fenway Health Institutional Review Board approved all study procedures.

In private rooms, a trained interviewer administered brief demographic questionnaires and audio-recorded individual qualitative interviews exploring men's sexual and substance use behaviors, social and sexual networks, opinions and feedback on specific network research procedures, and potential barriers to participation (Table 1). Content analyses used detailed interview notes to identify and describe emergent themes (Sandelowski, 2010). We developed a preliminary codebook based on the interview guide (Patton, 2005; Ryan & Bernard, 2003) and met frequently to refine the codebook and discuss emergent findings (DeCuir-Gunby, Marshall, & McCulloch, 2011). To illustrate key themes, we selected illustrative examples and quotes that were transcribed directly from audio recordings.

Results

Table 2 provides demographic, sexual risk, and network research acceptability data for the overall sample ($n = 30$), which included 12 Black, 9 White, and 9 Latino men. Across racial/ethnic groups, participants discussed the need for tailored recruitment approaches for different types of sexual partners and preferred having the ability to choose referral procedures best suiting their specific situations. Not surprisingly, name disclosure was more acceptable for regular partners (e.g., significant others, consistent casual partners) while many preferred to remain anonymous during recruitment of one-time or anonymous sexual partners.

However, notwithstanding these similarities, as described below, differences between racial/ethnic groups emerged in qualitative interviews regarding general perceptions of sociocentric network research and hypothetical recruitment methods (see themes and illustrative quotes in Table 3).

Concerns regarding sexual disclosure among Black MSM

Black participants emphasized the importance of sensitivity around contacting referred sexual partners (regardless of partner type), particularly those who were not open about their same-sex behaviors. In fact, most (7/12) Black participants described having such partners compared to only two White and two Latino participants. These participants felt that direct recruitment method was too invasive and could potentially cause social harm given the history of stigma associated with same-sex behaviors in the Black community and general mistrust in medical research.

Black participants also expressed concern regarding researchers mentioning “a sex partner” to referred partners because it would draw unwanted attention to sexual encounters. Instead, Black men preferred scenarios in which researchers would explain that, “a friend has referred you”, feeling that this encompassed the nature of the relationship between the participant and the referred partner indirectly and reduced potential stress from highlighting the sexual aspect of the relationship or encounter.

Preferences for personally contacting partners among Latino MSM

Latino participants were also concerned about how referred partners would react if contacted out of the blue by researchers. Latino men explained that referred partners could worry that they were being contacted through an STI-related notification service. Instead, most (7/9) reported that they would prefer contacting their referred sexual partners themselves (both main and casual) before researchers contacted them to have the opportunity to assure partners that their behaviors and identities were not being made public and that they could trust the study staff.

High referral comfort among White MSM

Distinct from Black and Latino men, nearly all White participants in our sample (8/9) were comfortable with researchers contacting sexual partners directly, and many even preferred that researchers disclose their own name to referred partners, including for casual partners. Importantly, White participants expressed high comfort with research study participation and emphasized the importance of transparency in recruitment methods, noting that referred partners would be more likely to participate if they knew they had been referred through a trusted source.

Discussion

A greater understanding of racial/ethnic differences in sexual network structures may help uncover important structural causes for HIV/STI transmission disparities. However, due to acceptability and feasibility concerns, sociocentric research studies are lacking, particularly among MSM of color who experience a disproportionate burden of HIV/STIs. Our study revealed general support for conducting sexual network studies but highlighted important racial/ethnic differences in preferences regarding recruitment of sexual partners. In general, Black and Latino MSM in our sample were more concerned than White MSM about potential privacy and confidentiality implications of specific referral methods for recruiting sexual partners. Concerns regarding researchers approaching sexual partners may stem, in part, from underlying mistrust of medical research and health-care systems, which is common in communities of color (Eaton et al., 2015; Volkmann, Claiborne, & Currier, 2009). Similarly, White participants’ preferences regarding transparency in referrals suggested high trust in health-care and research systems that could strengthen recruitment of White participants.

Ensuring community engagement throughout all aspects of research ranging from problem identification through study design, implementation, and dissemination of results could help mitigate medical mistrust, reduce social harms, and increase research participation. Drawing

on the principles of community-engaged research (Wallerstein & Duran, 2006), these efforts could include building relationships with community leaders among MSM of color, creating community advisory boards to be involved at all stages, and hiring people who identify as part of the communities of focus to lead research activities (Magnus et al., 2014). It is imperative for researchers to incorporate these efforts into sexual network studies, not only to ensure acquisition of generalizable data, but also to inform HIV prevention interventions for underserved subpopulations of MSM.

Our study was limited by a selection of Black, Latino, and White MSM living in the Greater Boston area who may not represent the perspectives of all MSM. The differences among racial/ethnic groups that we identified should be further investigated to ensure relevance to larger populations. Larger studies are also needed to examine racial/ethnic differences across additional subgroups, including Asian men who are undergoing rapid population growth (Colby & Ortman, 2015). Moreover, due to resource constraints, detailed interviewer notes taken during and immediately after the interviews were compared to the audio, and used for coding.

Nevertheless, as the first study to our knowledge to explore racial/ethnic differences in the acceptability of sociocentric sexual network research among MSM, our findings carry important implications for sexual network research, which was largely acceptable to MSM across racial/ethnic groups. However, researchers studying MSM sexual networks should be aware of racial/ethnic differences in preferences regarding specific study procedures. Ultimately, the ability to conduct unbiased sociocentric network studies to understand true sexual network structures influencing HIV transmission among MSM will require adequate involvement of diverse communities in study design and implementation.

Acknowledgments

The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Funding

This study was supported by the Harvard University Center for AIDS Research (CFAR), an NIH-funded program [P30 AI060354], which is supported by the following NIH Co-Funding and Participating Institutes and Centers: NIAID, NCI, NICHD, NHLBI, NIDA, NIMH, NIA, NIDDK, NIGMS, FIC, and OAR.

References

- Adimora AA, Schoenbach VJ. Social context, sexual networks, and racial disparities in rates of sexually transmitted infections. *The Journal of Infectious Diseases*. 2005; 191(Suppl 1):S115–122. DOI: 10.1086/425280 [PubMed: 15627221]
- Adimora AA, Schoenbach VJ, Doherty IA. HIV and African Americans in the southern United States: Sexual networks and social context. *Sexually Transmitted Diseases*. 2006; 33(7):S39–S45. [PubMed: 16794554]
- Berry M, Raymond HF, McFarland W. Same race and older partner selection may explain higher HIV prevalence among black men who have sex with men. *AIDS*. 2007; 21(17):2349–2350. [PubMed: 18090287]
- Bingham TA, Harawa NT, Johnson DF, Secura GM, MacKellar DA, Valleroy LA. The effect of partner characteristics on HIV infection among African American men who have sex with men in the

- Young Men's Survey, Los Angeles, 1999–2000. *AIDS Education and Prevention*. 2003; 15(1 Suppl):39–52. [PubMed: 12630598]
- Centers for Disease Control and Prevention. HIV surveillance report: Diagnoses of HIV infection and AIDS in the United States and Dependent Areas, 2009. Atlanta: 2010. Retrieved from <http://www.cdc.gov/hiv/surveillance/resources/reports/2009report/pdf/2009SurveillanceReport.pdf>
- Colby, SL., Ortman, JM. Projections of the size and composition of the US population: 2014 to 2060. 2015. Retrieved from <https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf>
- DeCuir-Gunby JT, Marshall PL, McCulloch AW. Developing and using a codebook for the analysis of interview data: An example from a professional development research project. *Field Methods*. 2011; 23(2):136–155.
- Doherty IA, Padian NS, Marlow C, Aral SO. Determinants and consequences of sexual networks as they affect the spread of sexually transmitted infections. *The Journal of Infectious Diseases*. 2005; 191(Suppl 1):S42–S54. DOI: 10.1086/425277 [PubMed: 15627230]
- Eaton LA, Driffin DD, Kegler C, Smith H, Conway-Washington C, White D, Cherry C. The role of stigma and medical mistrust in the routine health care engagement of black men who have sex with men. *American Journal of Public Health*. 2015; 105(2):e75–e82.
- Friedman SR, Neaigus A, Jose B, Curtis R, Goldstein M, Ildefonso G, ... Des Jarlais DC. Sociometric risk networks and risk for HIV infection. *American Journal of Public Health*. 1997; 87(8):1289–1296. [PubMed: 9279263]
- Ghani A, Donnelly C, Garnett G. Sampling biases and missing data in explorations of sexual partner networks for the spread of sexually transmitted diseases. *Statistics in Medicine*. 1998; 17(18): 2079–2097. [PubMed: 9789915]
- Granovetter, M. The strength of weak ties: A network theory revisited. In: Lin, PVMaN, editor. *Social structure and network analysis*. Beverly Hills, CA: Sage; 1982. p. 105–130.
- Guest G, Bunce A, Johnson L. How many interviews are enough? An experiment with data saturation and variability. *Field Methods*. 2006; 18(1):59–82.
- Hurt CB, Beagle S, Leone PA, Sugarbaker A, Pike E, Kuruc J, ... Hightow-Weidman LB. Investigating a sexual network of black men who have sex with men: Implications for transmission and prevention of HIV infection in the United States. *Journal of Acquired Immune Deficiency Syndromes* (1999). 2012; 61(4):515–521. [PubMed: 22972020]
- Johnson, JC. *Selecting ethnographic informants*. Newbury Park, CA: Sage; 1990.
- Latkin CA, Donnell D, Metzger D, Sherman S, Aramrattana A, Davis-Vogel A, ... Celentano DD. The efficacy of a network intervention to reduce HIV risk behaviors among drug users and risk partners in Chiang Mai, Thailand and Philadelphia, USA. *Social Science & Medicine*. 2009; 68(4):740–748. DOI: 10.1016/j.socscimed.2008.11.019 [PubMed: 19070413]
- Laumann EO, Youm Y. Racial/ethnic group differences in the prevalence of sexually transmitted diseases in the United States: A network explanation. *Sexually Transmitted Diseases*. 1999; 26(5): 250–261. [PubMed: 10333277]
- Magnus M, Franks J, Griffith MS, Arnold MP, Goodman MK, Wheeler DP. Engaging, recruiting, and retaining black men who have sex with men in research studies: Don't underestimate the importance of staffing – lessons learned from HPTN 061, the BROTHERS study. *Journal of Public Health Management and Practice: JPHMP*. 2014; 20(6):E1–E9.
- Magnus M, Kuo I, Phillips G 2nd, Shelley K, Rawls A, Montanez L, ... Greenberg AE. Elevated HIV prevalence despite lower rates of sexual risk behaviors among black men in the District of Columbia who have sex with men. *AIDS Patient Care and STDs*. 2010; 24(10):615–622. DOI: 10.1089/apc.2010.0111 [PubMed: 20863246]
- Millett GA, Ding H, Marks G, Jeffries WL IV, Bingham T, Lauby J, ... Stueve A. Mistaken assumptions and missed opportunities: Correlates of undiagnosed HIV infection among black and Latino men who have sex with men. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2011; 58(1):64–71. [PubMed: 21654500]
- Millett GA, Flores SA, Peterson JL, Bakeman R. Explaining disparities in HIV infection among black and white men who have sex with men: A meta-analysis of HIV risk behaviors. *AIDS*. 2007; 21(15):2083–2091. DOI: 10.1097/QAD.0b013e3282e9a64b [PubMed: 17885299]

- Mimiaga MJ, Reisner SL, Tetu AM, Bonafide KE, Cranston K, Bertrand T, ... Mayer KH. Partner notification after STD and HIV exposures and infections: Knowledge, attitudes, and experiences of Massachusetts men who have sex with men. *Public Health Reports*. 2009; 124(1):111–119. [PubMed: 19413033]
- Oster AM, Wejnert C, Mena LA, Elmore K, Fisher H, Heffelfinger JD. Network analysis among HIV-infected young black men who have sex with men demonstrates high connectedness around few venues. *Sexually Transmitted Diseases*. 2013; 40(3):206–212. [PubMed: 23403601]
- Patton, MQ. *Encyclopedia of Statistics in Behavioral Science*. 2005. Qualitative Research.
- Raymond HF, McFarland W. Racial mixing and HIV risk among men who have sex with men. *AIDS and Behavior*. 2009; 13(4):630–637. [PubMed: 19479369]
- Rothenberg RB, Potterat JJ, Woodhouse DE, Muth SQ, Darrow WW, Klov Dahl AS. Social network dynamics and HIV transmission. *AIDS*. 1998; 12(12):1529–1536. [PubMed: 9727575]
- Ryan GW, Bernard HR. Techniques to identify themes. *Field Methods*. 2003; 15(1):85–109.
- Sandelowski M. What's in a name? Qualitative description revisited. *Research in Nursing & Health*. 2010; 33(1):77–84. [PubMed: 20014004]
- Sullivan PS, Peterson J, Rosenberg ES, Kelley CF, Cooper H, Vaughan A, ... DiClemente R. Understanding racial HIV/STI disparities in black and white men who have sex with men: A multilevel approach. *PloS one*. 2014; 9(3):e90514. [PubMed: 24608176]
- Volkman ER, Claiborne D, Currier JS. Determinants of participation in HIV clinical trials: The importance of patients' trust in their provider. *HIV Clinical Trials*. 2009; 10(2):104–109. [PubMed: 19487180]
- Wallerstein NB, Duran B. Using community-based participatory research to address health disparities. *Health Promotion Practice*. 2006; 7(3):312–323. [PubMed: 16760238]
- Wohlfeiler D, Potterat JJ. Using gay men's sexual networks to reduce sexually transmitted disease (STD)/human immunodeficiency virus (HIV) transmission. *Sexually Transmitted Diseases*. 2005; 32(10 Suppl):S48–S52. [PubMed: 16205293]

Table 1

Potential methods and language for recruiting sexual partners in a hypothetical sexual network study (options presented to participants).

1	Participants name sexual partners and provide contact information. Study staff contacts sexual partners directly:? Approach A (no anonymity): “Hi, my name is ____ from _____, we’re recruiting for a study about race and men’s health and [participant’s name] has referred you to us”.? Approach B (moderate anonymity): “Hi, my name is ____ from _____, we’re recruiting for a study about race and men’s health. A sex partner or friend has referred you to the study”.? Approach C (complete anonymity): “Hi, my name is ____ from _____, we’re recruiting for a study about race and men’s health” [no mention of who referred them].
2	Participants contact sexual partners directly and refer them to study (modified respondent-driven recruitment).

Table 2

Demographic, sexual risk, and network research acceptability characteristics of MSM who participated in qualitative interviews in Greater Boston ($N = 30$).

	Mean (SD)
Age	31.9 (11.7)
Number of sexual partners, past 6 months	8.1 (8.3)
	<i>N</i>
Race/ethnicity	
Latino	9
Black/African-American	12
White	9
Reported HIV status	
Positive	7
Negative	23
Most recent partner, type	
Spouse/domestic partner	2
Boyfriend/girlfriend/significant other	8
Casual	5
Friend	9
Someone I just met	5
Transactional sex client	1
Most recent partner, race/ethnicity concordance	
Same race/ethnicity as participant	11
Different race/ethnicity as participant	16
Most recent partner, known HIV status	
Yes	22
No	8
Willingness to give name and contact information of sex partners if anonymous ^a	
Very likely/likely	13
Somewhat likely	11
Unlikely/very unlikely	6
Willingness to participate in a sexual network study if you were partner referred ^a	
Very likely/likely	16
Somewhat likely	9
Unlikely/very unlikely	5

^aReported prior to qualitative interview.

Table 3

Illustrative quotations for racial differences in preferences for sociocentric sexual network recruitment strategies from qualitative interviews of MSM in Greater Boston ($N=30$).

Theme	Age	Self-identified race/ethnicity
<i>Concerns regarding sexual disclosure among Black MSM</i>		
"A lot of people I have sex with, even those who are out, particularly men of color, they are very sensitive about how their sexuality is being interpreted or being used, so I would have to think about what type of trauma that would give them if someone's calling you and is like, 'Hey! I got your number from someone you slept with! I heard you're gay, let me talk to you!' You know what I mean? I'd have to think really hard, deeply, about the benefits of the research, and also, like, their privacy, because ... they didn't consent to their sexuality being out there ... [and] it might trigger something for them."	24	Black, non-Hispanic
"I'd be mad at that person and everything. How dare they give out my name and everything and tell them, you know, what I do. ... Yeah [anonymity], that's good. You don't say who referred [you] or nothing."	55	Black, non-Hispanic
<i>Preference for personally contacting sexual partners prior to study staff in Latino MSM</i>		
"It feels a little bit uncomfortable because someone might start asking, like, 'Oh, why was I referred to this? Did they get an STI? Are they about to start talking to me about the disease I probably have?' Or, you know, that just might instantly get them to start thinking negatively about someone that they might have had sex with, like, 'Oh, I had sex with this person and now this is happening to me. Why did I do that?'"	20	Latino
<i>High referral comfort among White MSM</i>		
"I think it has a bit of a friendlier tone to it. Putting my name on it would sort of make it more inviting for them to at least check it out. I think I would be ok with it, and I would trust a friend who would be volunteering me. I think some people would just be concerned that they get signed up for a mailing list ... but I think he [recent partner] would be OK with it."	24	White, non-Hispanic