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The association between egocentric sexual networks and sexual meeting venues with PrEP conversation and encouragement for use among Latinx men who have sex with men

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Abstract

Despite the increasing availability of pre-exposure prophylaxis (PrEP), Latinx men who have sex with men (LMSM) are not receiving PrEP-related information and remain a subgroup at highest risk of HIV. To understand the influence of LMSM sexual networks on PrEP-related conversations and encouragement to use PrEP, the present cross-sectional egocentric network study characterized the PrEP-related communication of 130 LMSM egos with 507 sexual partners (alters). LMSM participants were recruited using respondent-driven sampling methods from a Miami-Dade County Latinx-centric community-health organization. Egocentric-level data were collected from 2018–2019 and analysed using multilevel modelling. Of egos, 30% reported using PrEP. Closeness between participants and sexual partners played a role in PrEP conversation and encouragement for use. Participants believed they would have less success convincing sexual partners to use PrEP if partners were older. Participants perceived higher likelihood to talk about PrEP or success in encouraging alters to use PrEP if, relative to meeting sexual partners on Grindr, they met at a friend's party, gay-centric community event, or school/work. Given that increased closeness and in-person sexual partner meeting venues are associated with PrEP information dissemination and encouragement, social network-based interventions can capitalize on PrEP navigators who run social network visualizations, and with this information develop a longitudinal plan to increase PrEP conversation and encouragement as needed for each network.

Keywords

social network analysis; HIV; Latino men who have sex with men

Introduction

In 2018, US Latinxs experienced the second-highest rate of new HIV cases, at 16.2: a rate almost 1.5 times higher than the overall national HIV rate (Centers for Disease Control and Prevention). Of male Latinos, 85% of new HIV transmissions were due to male-to-male sexual contact, indicating that Latino men who have sex with men (LMSM) are disproportionately affected by HIV (Centers for Disease Control and Prevention). In addition to being a majority Latinx county, Miami has one of the highest HIV incidences in the US (Centers for Disease Control and Prevention). In Miami, Latino men represent the highest proportion of new HIV cases for ages 20 and older (HIV/AIDS Section & Florida Department of Health, 2018). One-in-two new HIV diagnoses in Miami from 2015–2017 were among LMSM, which underscores the urgent need to optimize the implementation of biomedical prevention strategies in this population (HIV/AIDS Section & Florida Department of Health, 2018).

Pre-exposure prophylaxis (PrEP) has emerged as a safe, effective product to prevent primary HIV acquisition (Food and Drug Administration, 2012). However, PrEP use in the Latino population is far lower than readiness for PrEP would indicate, and varies widely from region to region, with uptake ranging between 2.6% and 30% (Hoots, Finlayson, Nerlander, Paz-Bailey, & National, 2016; Kuhns, Hotton, Schneider, Garofalo, & Fujimoto, 2017; Strauss et al., 2017). Previous studies have found that hearing about PrEP through a friend or sexual partner is associated with becoming a self-referral for PrEP (Algarin et al., 2019; Fuchs, 2015). These findings suggest that communication within egocentric sexual networks could facilitate the diffusion of PrEP information within personal networks. Little is known, however, about how sexual networks can promote LMSM's PrEP awareness and enrollment, and our study addresses this question using egocentric (personal) network data that comprise of the direct contacts of a focal person (ego) with their sexual partners (alters) and quantifies relational characteristics of the relationships between these alters based on ego's perceptions. Our study aims at: 1) describing associations between LMSM participants (ego), their sexual partners (alters) and PrEP conversation and successful encouragement for PrEP enrollment (ties), and 2) identifying venues where LMSM find sexual partners (physical, virtual, including online dating apps and social media platforms) and the associations between PrEP conversation and encouragement for PrEP enrollment and these venues.

Methods

Study sample, eligibility criteria, and recruitment

This is a cross-sectional study of the egocentric sexual networks of 130 LMSM and their 507 sexual partners. Inclusion criteria included: 1) cis-male identity, 2) HIV-negative status, 3) having sex with a man in the past six months, 4) Latinx identification, 5) being age 20–39

years, and 6) qualification for PrEP prescription in accordance with CDC PrEP Clinical Practice Guidelines (Centers for Disease Control and Prevention, 2018). The sample was recruited using respondent driven sampling (RDS) and time location sampling from October 2018 to August 2019. The community-based project coordinator recruited participants from [PARTNER NAME]'s two Miami sites. To address potential network overlaps, seeds were randomly drawn from the [PARTNER NAME] clientele by randomly selecting day/time intervals for recruitment at one of the two sites. Recruitment marketing materials and approaches were adapted to include the Latinx cultural values *simpatía* (cultural script characterizing Latinxs as agreeable, friendly, sympathetic, and polite) (Ramírez-Esparza, Gosling, & Pennebaker, 2008) and *personalismo* (importance that Latinxs place on personal character and inner qualities such as respectful listening and caring interactions) (Marin, 1989).

The project coordinator recruited ten seeds (five seeds reported using PrEP). Using respondent-driven sampling, each of the ten seeds invited three LMSM friends (referred to as first-order friends). These first-order friends then each invited three LMSM friends (second-order friends). If any LMSM friends declined participation, the seed or first/second-order friend was asked to invite another LMSM friend. If a participant was able to recruit only one or two LMSM friends, seeds and/or other first-order friends were asked to recruit a fourth LMSM friend, who recruited additional friends using the respondent-driven sampling approach until 13 LMSM were enrolled in the seed's network. Participants could only be a part of one social network.

Data Collection Procedures

After participants provided written and verbal consent to participants (in either Spanish or English), they were interviewed for up to two hours in Spanish or English in a private office at one of the community partner's sites. The assessments were developed in English, translated to Spanish, and then back-translated to English by a certified translator and verified by a trained bilingual study author. The assessments were pilot tested twice with our community partner to achieve clarity in language and appropriateness of content. The assessments were delivered by trained LMSM interviewers in either English, Spanish, or both. Study data were collected and managed using REDCap electronic data capture tools (Harris et al., 2019). Using a matrix-based survey, participants provided the initials/pseudonyms nicknames of up to twelve formal/casual sexual partners from the past 12 months. Each participant received a \$50 gift card as compensation for their time and a \$10 gift card for each friend that enrolled in the study.

Measurements

Sociodemographic information from participants (egos) included age, income, education, health insurance, country of birth, length of time in the US, and US generation.

Information on sexual partners (alters).—Participants provided the initials/pseudonyms of up to twelve formal/casual sexual partners from the past 12 months. For each sexual partner, participants reported perceived sociodemographic characteristics: race/

ethnicity (e.g. Latino or non-Latino), gender, sexual orientation (i.e. gay, bisexual, straight), age, friendship connections, and main or steady partner.

Participant-sexual partner (ego-alter) PrEP conversation and encouragement (outcome variables).—For each sexual partner, participants reported: 1) if they ever had a PrEP conversation; 2) how likely the participant was to have a discussion about PrEP with the sexual partner in the next 6 months; and 3) how likely the participant would be in successfully encouraging the sexual partner to enroll in PrEP. The first outcome variable was binary (“Yes” or “No”), and the last two were ordinal rating scores ranging from 1-“Not at all likely” to 4-“Very likely”).

Participant-sexual partner (ego-alter) behaviors.—Participants reported whether condoms were used during receptive or insertive anal or vaginal sex.

Participant-sexual partner (ego-alter) closeness.—Participants reported closeness with each sexual partner by answering the following question: On a scale from 1 to 5, how close are you to this sexual partner?

Venue encounter.—Participants reported where they met each sexual partner for the first time (virtual and physical locations).

Data Analysis

Egocentric network data were analyzed using multilevel generalized linear models using logit link function for binary outcome, and identify link for continuous outcome clustered on individual participants (ego). The analysis of data recognized that sexual partners (alters) were nested within participants’ friendship groups (egos), and a multilevel design was appropriate (Perry, Pescosolido, & Borgatti, 2018). Level 1 included information from sexual partners (alters) or participant-sexual partner ties (ego-alter dyads). Level 2 included information from participants (egos). MLMs were estimated using the lme4 package for the R environment (Bates, Mächler, Bolker, & Walker, 2015).

Ethical approval

The University of Miami’s Institutional Review Board approved the study. All participants provided written and verbal consent.

The community partner project coordinator and interviewers received Human Subjects Research training prior to study commencement.

Results

Participants’ and sexual partners’ characteristics:

Table 1 provides sociodemographic characteristics of the participants. Thirty percent of participants reported currently using PrEP. Participants reported 507 sexual partners (overall mean 3.9, range 1–12). Almost all participants self-identified as gay (96%), with a minority (4%) identifying as bisexual. Participants were predominantly Latino white (72%), reported some college education (52%), were employed full-time (84%), were single or never married

(87%), and were born in the US (56%). Of those born outside of the US, 44% reported nativity in a Latin American country with the highest percentage among those born in Cuba (39%). Participants reported that 71% of their sexual partners were Latino, 8% bisexual, and 4% were heterosexual. Except for one female alter, all sexual partners were male. The majority of sexual partners reported alters as being of similar age to the participants (18 to 39 years old).

Participants' characteristics:

Of PrEP-users, 62% reported an intention to talk about PrEP with their sexual partners in the next six months and 59% reported an intention to successfully encourage sexual partners to use PrEP. Of non-PrEP-users, 62% reported an intention to talk about PrEP in the next 6 months and 57% reported an intention to successfully encourage sexual partners to use PrEP. Participant PrEP use was correlated with previously talking about PrEP with a sexual partner (OR 9.90, 95% CI:2.73, 35.90), intention to talk about PrEP with a sexual partner in the next six months ($\beta=0.48$; 95% CI:0.19, 0.77), and a belief they could successfully encourage a sexual partner to use PrEP in the future ($\beta=0.44$; 95% CI:0.09, 0.78). The closer a participant felt to a sexual partner, the more likely the participant was to report previously talking about PrEP with that partner (OR 2.33, 95% CI:1.72, 3.14), have future conversation about PrEP in the next six months with that partner ($\beta=0.38$; 95% CI:0.32, 0.44), and a belief they could successfully encourage that partner to use PrEP ($\beta=0.25$; 95% CI:0.18, 0.31).

Sexual partners' characteristics:

Having had a previous conversation with a sexual partner about PrEP was positively associated with having a bisexual sexual partner (OR 9.48, 95% CI:1.75, 51.5) and increasing age of alter (OR 0.48, 95% CI:0.26, 0.88). Talking about PrEP with an alter in the next 6 months was positively associated with sexual partners who was a friend ($\beta=0.46$; 95% CI:0.04, 0.88) and also if the sexual partner was a main partner ($\beta=0.47$; 95% CI:-0.12, 0.83). A belief they could successfully encourage that partner to use PrEP was positively associated with sexual partners who were ego's friends ($\beta=0.43$; 95% CI:0.01, 0.84) and also having a bisexual sexual partner ($\beta=0.50$; 95% CI:0.11, 0.89). However, successfully encouraging PrEP use in the future was negatively associated with increasing age ($\beta=-0.20$; 95% CI:-0.35, -0.06) and using drugs during sex ($\beta=-0.26$; 95% CI:-0.50, -0.03). While having a sexual partner living with HIV increased previous PrEP conversations with that partner (OR 4.00, 95% CI:1.23, 13.00) and future intention to talk about PrEP ($\beta=0.59$; 95% CI:0.27, 0.90), having a sexual partner living with HIV had a negative effect when it came to successfully encouraging sexual partners to use PrEP ($\beta=-0.36$; 95% CI:-0.69, -0.03).

Meeting venue characteristics:

Overall, participants were more likely to intend to talk about PrEP in the next six months if, relative to meeting sexual partners on Grindr, participants first met a sexual partner on another online dating app (e.g., Instagram, Adam4Adam, etc.; $\beta=0.43$; 95% CI:0.15, 0.70) a bar or club outside Miami Beach ($\beta=0.58$, 95% CI:0.16, 1.00); at a mutual friend's party ($\beta=0.68$, 95% CI:0.34, 1.02), a gay-centric community event ($\beta=0.78$, 95% CI:0.41, 1.15), or school/work ($\beta=0.83$, 95% CI:0.33, 1.33). Participants were more likely to believe they would succeed in encouraging sexual partners to use PrEP if, relative to sexual partners met

on Grindr, participants first met at a mutual friend's party ($\beta=0.45$, 95% CI:0.13, 0.77), or at a gay-centric community event ($\beta=0.49$, 95% CI:0.13, 0.85), or school/work ($\beta=0.77$, 95% CI:0.30, 1.24).

Discussion

We explored LMSM's sexual networks to understand the association between network structures, network components, and sexual partner meeting venues with PrEP conversation and encouragement using social network methodologies. We found that PrEP conversation and encouragement within sexual networks could be influenced through egocentric networks. Of our study participants, 30% reported using PrEP. Previous research had identified PrEP use within the LMSM community to vary from 12.5% - 30% (Hoots et al., 2016; Kuhns et al., 2017; Strauss et al., 2017). Our findings of a higher rate of PrEP use among LMSM support the idea that social network recruitment methods (i.e., respondent-driven sampling), recruitment being conducted at an established and trusted community-based organization prioritizing the Latino MSM population, and the incorporation of Latino cultural constructs (e.g., *simpatía*, *respeto*, and *personalismo*) into recruitment can serve as a means to successfully recruit potential PrEP users. Future research and interventions to increase PrEP adherence among LMSM can refer to these successful recruitment approaches.

As our LMSM participants reported that 29% of their sexual partners were non-Latino, social network-based interventions must also be able to reach non-Latinos. At the alter characteristic level, the majority of participants reported being more likely to talk about PrEP with their main partners compared to other partners, and believed they would have less success convincing sexual partners to use PrEP if they were older than them. Individuals with older partners perceived they would have less success in convincing their partner to use PrEP: this may in part be driven by the value of *respeto*. This value or idea of respect often leads those who are younger to be reluctant to share information with those who are older, so as not to offend them (Antshel, 2002). Another important implication of our finding that our participants report sex with bisexual and heterosexual men. This finding suggests that efforts addressing the HIV epidemic in Miami should not focus solely on Latino MSM who self-identify as gay, but also on the overlooked group of Latino MSM who self-identify other than gay (bisexual, heterosexual, or otherwise non-gay identified). Participants reported that 8% of their sexual partners were bisexual and 4% heterosexual. As sexual behavior is not synonymous with sexual identity, future HIV prevention interventions must continue to stratify these differences and include MSM who do not identify as gay (Van Niftrik, 1995).

Participant-sexual partner dyadic characteristics included associations between participants reporting feeling closer to a sexual partner and the increased likelihood of both future ego-alter PrEP conversations and LMSM believing they could successfully encourage a sexual partner to use PrEP. Our findings align with previous research which found that strong ties are more efficient in disseminating social influence (Valente & Vlahov, 2001). A desire for closeness in relationships may result in a desire to protect oneself, partners, and the relationship from HIV. This may motivate LMSM to engage in HIV prevention behaviors, such as PrEP use. Knowing that closeness plays a key role in PrEP information

spread and motivation for uptake can lead to future interventions focusing on LMSM's close sexual partners rather than just disseminating PrEP information through dating apps.

With respect to initial sexual encounters, participants were more likely to have a conversation about PrEP in the next six months, or believe they would succeed in encouraging alters to use PrEP, if participants first met a sexual partner through friends, at a mutual friend's party, a gay-centric community event, or school /work as compared to meeting through a social/sexual networking/dating app (e.g., Grindr). Our findings suggest that while social networking/dating apps can widely disseminate information, this does not lead to encouragement for PrEP uptake unless there was an existing element of closeness (i.e., an off-application connection such as friends). This may also be due to certain apps allowing for the disclosure of PrEP or HIV status in the profile, negating the need of a conversation; however, this would not negate intended future conversations or encouragement to uptake PrEP. While we support the utility of dating apps and social media as a means to reaching a large number of LMSM, this research shows PrEP promotion strategies should also focus on social venues that allow for more personal intimacy and therefore greater feelings of connection.

There are several limitations to consider with respect to the current findings. First, this is a cross-sectional study, so there is no cause-effect or temporality. Second, given the unique structure of Miami, we were able to identify a heterogeneous and diverse Latino community. Third, given the self-reported nature of data, respondents' sexual behavior may be subject to recall and social desirability bias. Characteristics of sexual partners were reported by participants' perceptions and therefore, we might not have captured all of the heterosexual/bisexual men. This study focused on LMSM's intentions to have PrEP conversations and encourage PrEP initiation to their sexual partners. Previous studies have used similar approaches based on the Theory of Planned Behavior to predict HIV testing intention and intention to initiate PrEP (Ayodele, 2017; Mirkuzie, Sisay, Moland, & Åstrøm, 2011; Tran et al., 2021).

The variety of ways that social networks can negatively influence personal health is staggering and encompasses a diverse and wide breadth of public health topics, including health/disease information flow and viral disease clustering. Previous studies have shown that social networks can reinforce risky sexual and drug use behaviors (Jenness et al., 2010; Kimbrough et al., 2009; Latkin, Forman, Knowlton, & Sherman, 2003), both of which lead to poor HIV treatment outcomes (Goehl, Nunes, Quitkin, & Hilton, 1993). Our findings show that social networks can also play a positive role in HIV prevention by disseminating knowledge, opinions, and resources related to HIV prevention, such as PrEP (Berkman, 2000; Valente & Fujimoto, 2010). Egocentric network recruitment approaches can be an important tool for recruiting LMSM's sexual partners who self-identify as bisexual or heterosexual, a group that has received little focus but should be considered in future efforts to promote HIV risk reduction.

Findings from this study could guide the design of a randomized controlled trial that incorporates a social network support component. Social network strategies could incorporate the following six evidenced-based principles developed to activate support

networks: (1) respondent-driven sampling recruitment, (2) identification of opinion leaders who act as leaders, (3) incorporation of a social context in program delivery, (4) fostering social cohesion to improve information seeking and social support, (5) information diffusion through social networks and (6) promotion of participants' empowerment (Kanamori et al., 2017; Kanamori et al., 2019). Our study also identified the association between network structures with PrEP conversation and encouragement. Future social network-based interventions can capitalize on PrEP navigators who run social network visualizations, and with this information develop a longitudinal plan to increase PrEP conversation and encouragement as needed for each network. Finally, social network is an approach that can be used to increase PrEP initiation of all LMSM, including those who are not engaged in the gay scene.

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Table 1.

Participants' (Egos) Socio-Demographic Characteristics (N=130)

	(%)
PARTICIPANT (EGO) INFORMATION	
Currently uses PrEP (Yes)	30
Age (Mean; SD)	28.31 (4.2)
Sexual Orientation	
Gay	96
Bisexual	4
Racial Identity	
White	72
Black/African American	4
Multi-racial	19
Other	6
Education	
High school or trade school	5
Some college	52
Bachelor's degree	31
Post-Graduate	3
Employment Status	
Full-time	84
Part-time	9
Other (e.g., student, unemployed)	7
Marital Status	
Single or never married	87
Married	8
Have a domestic partner	6
Household Income	
\$24,999 or less	13
\$25,000 - \$34,999	43
\$35,000 - \$49,999	28
\$50,000 or more	17
Years lived in South Florida (Mean; SD)	19.4 (11)
Years lived in the US (Mean; SD) ^I	15.43 (10)
Age when first moved to the US (Mean; SD) ^I	12 (8)
Country of birth	
US	56
Latin American country	44
Country of birth for Foreign Born ^I	
Cuba	39
Nicaragua	9

	(%)
Dominican Republic	9
Honduras	7
Puerto Rico	5
Perú	5
El Salvador	2
Other	25
Religion	
Catholic	32
Christian	16
Other	6
None	47

SEXUAL PARTNER (ALTER) INFORMATION²

Average Number of Participants' Sexual Partners (SD)	3.9 (range 1–13)
Gender of Sexual Partners (Male) ³	100
Age of Sexual Partners	
<18	0
18–29	63
30–39	30
40–49	5
50	2
Sexual partner perceived as Latino (Yes)	71
Sexual Orientation of Sexual partner	
MSM	97
Heterosexual	4
Bisexual	8

¹Information from foreign-born participants

²Self-reported from participants

³Only one sexual partner was female

Table 2.

Association Between Participants' and Sexual Partners' Characteristics and Venues with Future Encouragement to use PrEP and Previous and Future PrEP Conversation

	Have Talked About PrEP			Will Talk About PrEP in the Next 6 Months			Will Successfully Encourage PrEP Use in the Future		
	OR	95% CI	p-value	β	95% CI	p-value	β	95% CI	p-value
Intercept	0.02	(0.00, 2.24)	0.11	0.73	(-0.29, 1.77)	0.16	1.59	(0.37, 2.84)	0.01 *
Age	0.98	(0.85, 1.13)	0.79	0.00	(-0.03, 0.03)	0.95	-0.02	(-0.05, 0.02)	0.37
Participant PrEP Use Status (Yes)	9.90	(2.73, 35.90)	<0.001	0.48	(0.19, 0.77)	<0.001	0.44	(0.09, 0.78)	0.01 *
Participants' Race (White)	0.47	(0.13, 1.67)	0.24	-0.39	(-0.70, -0.09)	0.01 *	-0.45	(-0.82, -0.08)	0.02 *
Number of Participant's Sexual Partners	1.08	(0.89, 1.32)	0.43	0.07	(0.02, 0.12)	<0.001	0.07	(0.01, 0.12)	0.02 *
Closeness Between Participant and Sexual Partner	2.33	(1.72, 3.14)	<0.001	0.38	(0.32, 0.44)	<0.001	0.25	(0.18, 0.31)	<0.001 ***
				SEXUAL PARTNERS' INFORMATION (ALTER)					
Intercept	0.24	(0.04, 1.61)	0.14	1.75	(1.30, 2.21)	<0.001	2.15	(1.70, 2.61)	<0.001 ***
Sexual Partner is a friend	3.88	(0.71, 21.2)	0.12	0.46	(0.04, 0.88)	0.03 *	0.43	(0.01, 0.84)	0.04 *
Sexual Partner is Main Partner	2.48	(0.66, 9.35)	0.18	0.47	(0.12, 0.83)	0.01 **	0.20	(-0.15, 0.56)	0.25
Sexual Partner is Latino	1.78	(0.73, 4.36)	0.20	0.16	(-0.05, 0.38)	0.14	0.15	(-0.06, 0.36)	0.15
Sexual Partner is Bisexual	9.48	(1.75, 51.5)	0.01 **	0.24	(-0.16, 0.65)	0.24	0.50	(0.11, 0.89)	0.01 *
Sexual Partner is Heterosexual	0.02	(0.00, 0.55)	0.02 *	0.14	(-0.51, 0.79)	0.68	-0.53	(-1.14, 0.09)	0.10
Sexual Partner's Age	0.48	(0.26, 0.88)	0.02 *	-0.09	(-0.23, 0.05)	0.21	-0.20	(-0.35, -0.06)	<0.001 ***
Used Alcohol During Sex	1.51	(0.60, 3.79)	0.38	-0.09	(-0.32, 0.15)	0.47	0.05	(-0.18, 0.27)	0.68
Used Drugs During Sex	0.93	(0.36, 2.38)	0.88	-0.22	(-0.46, 0.01)	0.05	-0.26	(-0.50, -0.03)	0.02 *
Participant had Condomless Receptive Anal Sex	1.86	(0.77, 4.51)	0.17	0.09	(-0.14, 0.33)	0.43	0.13	(-0.09, 0.36)	0.24
Participant had Condomless Insertive Anal Sex	1.81	(0.71, 4.59)	0.21	0.02	(-0.22, 0.26)	0.87	0.00	(-0.23, 0.23)	1.00
Sexual Partner Disclosed Living with HIV	4.00	(1.23, 13.00)	0.02 *	0.59	(0.27, 0.90)	<0.001	-0.36	(-0.69, -0.03)	0.03 *
				VENUES					
Intercept (Grindr)	0.08	(0.03, 0.19)	<0.001	1.30	(1.08, 1.52)	<0.001	1.47	(1.23, 1.71)	<0.001 ***
Participant uses PrEP	9.71	(3.19, 29.50)	<0.001	0.66	(0.34, 0.98)	<0.001	0.58	(0.20, 0.95)	<0.001 **
A Bar or Club in Miami Beach	0.65	(0.23, 1.79)	0.40	0.25	(-0.03, 0.53)	0.08	0.27	(0.00, 0.53)	0.05

	Have Talked About PrEP			Will Talk About PrEP in the Next 6 Months			Will Successfully Encourage PrEP Use in the Future			
	OR	95% CI	p-value	β	95% CI	p-value	β	95% CI	p-value	
Another App or Website	1.66	(0.64, 4.32)	0.30	0.43	(0.15, 0.70)	<0.001	**	0.22	(-0.03, 0.48)	0.09
Bar or Club Outside Miami	1.82	(0.42, 7.85)	0.42	0.58	(0.16, 1.00)	0.01	**	0.16	(-0.23, 0.55)	0.41
Friends' Party	2.04	(0.66, 6.29)	0.22	0.68	(0.34, 1.02)	<0.001	***	0.45	(0.13, 0.77)	0.01
Beach	0.94	(0.07, 13.10)	0.96	-0.01	(-0.75, 0.73)	0.97		0.23	(-0.45, 0.91)	0.51
Fetish/Sex Party/Bathroom	0.86	(0.04, 19.10)	0.93	0.12	(-0.62, 0.87)	0.74		-0.52	(-1.21, 0.18)	0.15
Gay-Centric Community Social Event	2.72	(0.80, 9.26)	0.11	0.78	(0.41, 1.15)	<0.001	***	0.49	(0.13, 0.85)	0.01
School or Work	4.20	(0.88, 20.00)	0.07	0.83	(0.33, 1.33)	<0.001	**	0.77	(0.30, 1.24)	<0.001
Other	0.33	(0.04, 2.70)	0.30	0.14	(-0.41, 0.69)	0.63		-0.01	(-0.56, 0.53)	0.96