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Community Engagement and Venue-Based Sampling in Adolescent Male STI Prevention Research

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Abstract

Objectives—Middle adolescent males are a difficult group to recruit for community sexually transmitted infection (STI) prevention research. We describe a process of community engagement, venue-based sampling of 14–17 year-old adolescent males, and compare rates of STIs and STI-risk behaviors by venue.

Methods—Community engagement consisted of (1) informational meetings with organizations, (2) participation in community meetings and events, (3) hiring community members as study personnel, and (4) an adolescent advisory board recruited from the community. Venues were identified and assessed at different times of the day and days of the week using a structured tool. At selected venues, males ages 14–17 were invited to participate in a brief survey and provide a urine sample and an optional anal swab for DNA-based STI testing.

Results—Venues were assessed (n=249), and 31 selected for recruitment, including parks, apartment complexes, community events, entertainment venues, a community school, and community programs for LGBT and adjudicated youth. We enrolled 667 participants, average age 15.7 years. Participants reported high rates of sexual and STI risk behaviors, but had low rates of STIs. These rates differed by venue, with more structured venues recruiting youth reporting fewer STI risk behaviors and less structured venues within the highest STI prevalence zip codes recruiting youth reporting more STI risk behaviors.

Conclusion—Venue-based sampling is a feasible mechanism to target recruitment and enrollment adolescent males with high STI risk behaviors in community settings, with risk profiles varying by setting.

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Implications and Contribution—Middle adolescent males in high STI prevalence communities are a hidden population. We describe an approach to community engagement and venue-based sampling that is a feasible alternative to institution- and household-based sampling, and then provide data on infection and STI risk behaviors by type of venue.

Keywords

Adolescent; Male; Sexual Behavior; Venue-Based Sampling; Sexually Transmitted Infection

Introduction

Because most sexually transmitted infections (STIs) are asymptomatic, STI prevention efforts need to target community, rather than clinical, settings. This is particularly important for adolescent males, who are much less likely to use outpatient services, compared to adolescent females [1, 2]. Most of the STI research that attempts to reach community samples of adolescent males recruits through institutions, such as schools [3] or juvenile justice facilities [4], which may under- or over-estimate the actual community prevalence of infection and STI risk behaviors.

Public health and researchers struggle with ways to achieve a community-based sample adolescent boys for sexual health and STI studies. Traditional methods of recruitment for community-based studies, such as school- or household-based recruitment, carry significant limitations. Adolescents do not answer phones, door-to-door sampling raises concerns about confidentiality, school-based samples miss out of school youth, and sampling places like juvenile detention capture only the highest-risk group. A newer area, online social-network based samples, are generally not reflective of geographic communities, making them less useful for geographic community-based interventions.

Of particular importance to adolescents are concerns regarding breach of confidentiality, which may lead to recruitment of lower risk adolescents. In research regarding sensitive adolescent behaviors, such as STIs and substance use, parental knowledge of study participation and/or requirements for parental consent made it more difficult to recruit adolescents with the highest risk behaviors (and thus most likely to benefit from the study) [5] [6]. The challenges to recruitment of adolescent males is magnified in communities with a high prevalence of STIs, because adolescent males in these communities also experience high rates of poverty, low rates of school attendance, and unstable housing [7]. Thus, adolescent males in communities with high rates of STIs, in some respects, behave like a hidden population, not easily accessible through the usual approaches.

Alternate approaches to access difficult to reach populations have been increasingly used to reach hidden populations at highest risk for STIs, such as injection drug users, commercial sex workers, or men who have sex with men (MSM) [8]. The two most commonly used methods include respondent driven sampling (RDS) and venue-based sampling. RDS has been used to successfully recruit adolescents in a five-city comparative study [9]. Venue-based sampling, used in adult STI and Human Immunodeficiency Virus (HIV) research [8, 10], is less commonly applied to adolescent populations. However, venue-based sampling

has the advantage of allowing a focus on a single community, which can be translated into a community-based intervention.

Youth focused studies using venue-based sampling have demonstrated that it can tap into at-risk groups, that gender is important, and that venue-based sampling can provide important information about place and location to inform interventions. A venue-based study with homeless youth demonstrated higher than expected rates of mortality [11]. Venue-based sampling of adolescents in Atlanta demonstrated differential rates of STIs (low rates of HIV and high rates of bacterial STIs), providing important information for targeted interventions in the social settings where sexual behaviors and STI transmission occurs [12]. Venue-based sampling for a community-level HIV intervention demonstrated gender differences in venues, and emphasizes the interaction between gender and space in STI risk [13]. However, thisdd intervention was extensive and costly, and it is unclear how these results would translate into small to mid-sized cities and lower budgets.

Effective venue-based sampling requires community engagement to facilitate access to community locations and events. A high level of community engagement preceded an STI screening intervention in San Francisco neighborhoods using a combination of venue-based and street intercept sampling to assess the effectiveness of a peer-led community-level screening program [14]. Less is known about the process of community engagement necessary for entry into youth venues.

Our objectives are to (1) describe the process of community engagement and venue-based sampling to reach a large population of 14–17 year-old males in neighborhoods at highest risk for STI in a mid-sized Midwestern city, and (2) describe differences in risk behavior and infection by venue.

Methods

Step 1: Mapping high-STI risk neighborhoods

Our first step in venue-based sampling was to identify the neighborhoods at highest risk for STIs. The research team used county-level gonorrhea and Chlamydia surveillance data regarding infection for adolescent males for the previous 5 years in the 15–19 year age range, and the most recently available census data broken down by 5-year age increments. Five years of data were requested because the actual numbers of infections were low. The smallest geographic unit for the STI surveillance data was a zip code. Because areas where adolescent males live, participate in activities and congregate are organized around neighborhoods, a more organic and less well-defined geographic area, we then identified the city neighborhoods in or adjacent to these zip codes as targets for community engagement and venue identification. The study was conducted in Indianapolis, IN during 2011–2012.

Step 2: Community engagement

The research team identified and was granted access to appropriate venues where adolescent males lived, congregated or participated in activities through a process of community engagement and community investment. Consistent with our group’s previous experience with community-based research, leaders and youth workers in the target communities

demonstrated a high level of protectiveness for both their organizations and the youth they served. The goals of the community engagement process were to educate community members about the study, build trust between the community and university-based research team, collaborate with communities to maximize the benefit to study participants and the community, and obtain input on research procedures to be sensitive to community concerns. Our community engagement activities consisted of (1) informational meetings with community organizations, (2) participation in community meetings and events, and (3) recruitment of a diverse adolescent advisory board and hiring study staff from these community organizations and venues themselves.

The community engagement was rolled out in three phases (see figure 1), starting 6 months prior to entry into the field, and continuing until data collection was complete. First, we introduced ourselves in the community by attending community meetings and functions on evenings and weekendss, networking to build a community contact base, and engaging community leaders in conversations about their assessment of the wellbeing of adolescent males in their community more generally, and regarding our project more specifically. During these conversations, study staff encouraged each community partner to tell their story, assessed the community partner's involvement and position in the community and level of interaction with adolescent males, and requested introductions to other members at the functions. Community partners included staff at youth-serving agencies, city parks, skating venues, large apartment complexes, alternative and community schools, and entertainment venues. An important community partner was the local police, who had instituted community policing approaches in most neighborhoods. As part of ensuring staff and participant safety, we met with district police to let them know about the project early in the community engagement process. Prior to entry into the field, police invited project staff to ride along with officers during routine patrols in the neighborhoods targeted by the study. The Indianapolis Police Department also has a number of outreach programs for adolescent boys in the targeted neighborhoods. One of these outreach projects acted as a venue. Other than those recruited at the outreach venue, participants were unaware of our engagement with local police.

Second, we invested our institutional resources into community organizations. This was done though project staff volunteering at community functions, connecting community partners to existing university resources, hiring staff from the target communities, and creating an advisory board of adolescent males living in these communities. So that the advisory board would mirror the adolescent males we were hoping to recruit, we asked community partners for youth in our target range (14–17 years old) whose experiences (e.g. where they lived, schools, activities) were similar to those of the youth we sought to recruit. Many advisory board members had a history of involvement in juvenile justice, some were out of school or in alternative schools, and many reported higher STI risk behaviors.

Finally, we gathered support for our project from community stakeholders. Important to community buy-in was the opportunity for community members to review and contribute to procedures to ascertain that they were not harmful to their organization, the community, or the individual adolescent males they worked with. Community leaders also requested that

the academic partner provide results back to communities and make additional connections to university resources.

Step 3: Venue Identification

We considered a "venue" to be a place (e.g. park), event (e.g. concert), or activity (e.g. sports program) where adolescent males lived, participated in activities, or generally congregated. Venues were limited to those located in a neighborhood in or adjacent to a higher STI rate zip code based upon the above mapping. Venues were initially identified based upon interviews with community members, recommendations from the advisory board, assessments by the project staff, and interviews with adolescents in the venues themselves. We asked informants to identify "hot spots" where adolescent males congregated, or high STI risk behaviors occurred. Advisory board members and adolescent informants at venues made key contributions, for example identifying types of venues we had not considered (e.g. skate parks), as well as naming specific venues themselves. Advisory board members and young informants also provided important details about venues – for example, we initially focused on where adolescent males "hung out" rather than where they lived, but advisory board members pointed out that a large number of 14–17 year old males "hang out" in their apartment complexes. Venue-based informant interviews provided important details, such as the location within a larger city park or identifying small ½ block "pocket" parks dotted throughout city neighborhoods where adolescent males in the target age range congregated. Staff collected information about venues including number of potential participants, types of activities young men participated in at that venue, and time of day and season of year. Venues were classified along a number of characteristics, including whether or not there were organized or sponsored activities for adolescents (structured), or it was simply a place to "hang out" with other adolescents (unstructured). Structured venues included places such as schools, activities, concerts, and festivals; Unstructured venues included places like parks or apartment complexes. Most of our sampling was done during the summer and fall because cold winter weather and wet spring weather drove adolescents inside houses and apartments, and they were more difficult to locate and access.

An initial list of 249 potential venues was compiled, and study staff assessed venues at different times of the day and days of the week using a structured assessment tool. Choice of venues, times, and days for sampling were based upon the following criteria: (1) location in or adjacent to one of the high-prevalence zip codes; (2) adequate numbers of boys between 14 and 17 years of age; (3) and the locations was identified as a "hot spot" for adolescent males with higher STI risk behaviors. We used the venue assessment to determine the time of day and day of week that eligible adolescent males would be in attendance. For discreet events (e.g. concert, sports league), we scheduled our time such that we would have access to the most adolescent participants. We found that, even in unstructured venues, adolescents tended to use venues during discrete times per day and discreet days per week. Most participants were in school during the day, there was a curfew that limited late nights, and many of the venues were structured programs and only open during limited times. Even less structured venues such as parks were empty during school hours or late at night, because adolescents not in school were not at the venue when other adolescents were not there.

Within a venue, staff identified a location that was safe and provided confidential space for respondents. For school- and community-based organizations, we also required permission to recruit from the relevant organization. Of the list of 249 venues, we recruited at 31 different venues that met the above criteria. The most common reasons to not go to a venue were insufficient numbers of males in the target age range (usually less than 10) or lack of access to a bathroom for STI testing. Other reasons for not recruiting at a venue were redundancy of the venue (e.g. very close to another venue with overlap of participants), and not having permission to recruit (e.g. at a charter school, or at a church).

Step 4: Recruitment and Study Procedures

We obtained approval from the Indiana University Institutional Review Board, with a waiver of parental permission allowing adolescents to consent on their own. Based upon our venue identification work, we identified specific venues and times for recruitment. At each venue, all young men were screened for eligibility (14–17 years of age, English or Spanish speaking), and invited to participate.

Procedures consisted of a 15–20 minute computer-assisted self-interview (CASI) using an iPad, and provision of a urine sample for Gonorrhea, Chlamydia and Trichomonas DNA-based testing. If the adolescent self-identified as participating in anal sex on the CASI, they were offered screening with an anal swab for rectal STIs. Participants provided confidential contact information for STI results at enrollment. Study staff made one contact attempt for negative results, and up to three contact attempts for positive results before turning the case over to the local health department.

Demographic measures included age, ethnicity, and experience with the juvenile justice system (ever arrested, detained/incarcerated, or on probation). Behavioral measures included lifetime and past 3 month experience of oral sex, vaginal sex, and anal sex, as well as the STI risk factors of greater than 5 lifetime partners, condom non-use at last sex, partner over 2 years older, and receipt/perpetration of interpersonal violence (“Your partner hit, slapped, kicked you,” or “You hit, slapped or kicked your partner”). The participants were compensated with a $20 gift card. The refusal rate was 37%, which is similar to other large community-based epidemiologic studies [15].

Step 5: Closure

Community organizations and youth workers were very interested in summary results for the youth in their communities, as these types of data could be used for program planning and grant applications. After completion of recruitment, results were tabulated for each venue, and provided to participating organizations. When there were low numbers of young men recruited from a specific venue, we combined similar venues and provided aggregate results. We then sponsored a community night with a speaker on young men’s health and a presentation of overall study results.

Data Analysis

Similar types of venues were collapsed into the following categories: apartments (mostly large apartment complexes), community events (e.g. parade, community-wide church event),

entertainment venues (e.g. concerts, haunted houses), gay, lesbian, bisexual, trans, queer or questioning youth (GLBT)-specific venues (e.g. GLBT youth events), parks (city parks, skate parks), schools (all located in or adjacent to target neighborhoods), and an adjudicated youth transition center. We included in our analysis a group of participants recruited as a network subsample referred by advisory board members. Because our advisory board was drawn from the communities in which we were recruiting, their network contacts were from the same communities. The network sample was not significantly different in demographics or sexual behaviors from those recruited at parks and schools, so we kept them in the analysis.

We examined differences in sexual and STI risk behaviors by type of venue using multivariate logistic regression, controlling for age and ethnicity and using schools as the referent category. Each behavioral outcome had a separate model. We then examined characteristics of venues. We further classified venues by whether or not they offered structured or unstructured activities, whether the participant lived in the neighborhood or traveled to the neighborhood from elsewhere in the city, and whether the venue itself was within versus adjacent to the high STI prevalence zip code.

Results

Venues and Participants

We recruited 667 participants (661 males, 6 transgender) from 31 different venues, including parks (14 venues, 148 participants), apartment complexes (3 venues, 35 participants), community events (4 venues, 54 participants), entertainment venues (4 venues, 178 participants), GLBT venues (2 venues, 27 participants), schools (3 venues, 120 participants), and an adjudicated youth transition center (1 venue, 9 participants), and referral by advisory board members and friends (96 participants). The average age was 15.7 years and ethnicity was 49% African American, 36% white 6% Latino, and 9% mixed race or other, consistent with local demographics. Nearly one-third reported juvenile justice involvement.

Sexual and STI Risk Behaviors

We observed high rates of sexual and STI risk behaviors (See Table 1 for a complete sample description). Approximately half of participants reported recent vaginal sex (49%), about a fourth giving (22%) or receiving (44%) oral sex, and a sizeable minority giving (9%) and receiving (4%) anal sex. Many (40%) did not use a condom at last sex, and over the previous three months, participants were more likely to always use a condom use with vaginal sex (38%), compared to oral (11%) or anal (14%) sex ($p<.05\%$). A quarter reported more than 5 lifetime partners, but only 18% reported partners more than 2 years older than themselves. Other common STI risk behaviors included drug (7%) and alcohol (17%) use before last sex, perpetration (7%) and receipt (21%) of interpersonal violence, and getting someone pregnant (7%) or fathering a child (6%).

Sexually Transmitted Infections

Despite high rates of STI risk behaviors, we observed very few STIs. History of previous STI testing (22%) and prior diagnoses (1%) were low. The STI rate for Chlamydia from

urine samples was 3.4% (n=23) and for Gonorrhea 0.6% (n=3). Only one participant had both infections. There were no Trichomonas infections. Of the 35 participants reporting anal sex, only four opted for anal STI testing. None were positive.

Differences by Venues

We observed important differences by venues (see Table 2). Participants recruited at community events and entrainment venues were younger and reported different ethnicities compared to those at other venues. Controlling for age and ethnicity, participants in community and entertainment venues reported lower rates of sexual and STI risk behaviors, including lower rates of recent and lifetime oral and vaginal sex, lower numbers of lifetime partners, and lower rates of interpersonal violence. LGBT venues recruited older participants, and, because of the higher numbers of MSM, reported higher rates of anal sex and lower rates of vaginal sex, controlling for age and ethnicity. Otherwise LGBT venues did not differ from other venues in STI risk behaviors, including >5 lifetime partners, condom non-use and interpersonal violence. We did not see significant differences in STI risk behaviors among participants recruited from apartment, network, school, park or adjudicated youth venues.

Differences by Venue Characteristics

When we examined characteristics of venues, controlling for age and ethnicity, we found that participants recruited from venues offering structured, or organized, activities had lower rates of STI risk behaviors than participants recruited from venues without structured activities. For example, participants in structured venues were less likely to engage in recent (37% vs. 65%, $p<.01$) or lifetime (45% vs. 72%, $p<.05$) vaginal sex, have 5 or more sexual partners (18% vs. 32%, $p<.05$), use drugs with sex (4% vs. 10%, $p<.05$), or be involved in juvenile justice (25% vs. 44%, $p<.001$). We did not see differences in rates of interpersonal violence or condom use between venues offering or not offering structured (organized) activities.

We recruited higher risk participants from venues located in, as opposed to adjacent to, high STI prevalence zip codes. Controlling for age and ethnicity, participants recruited from within a high prevalence zip code were more likely to engage in recent (57% vs. 38%, $p<.01$) and lifetime (67% vs. 50%, $p<.05$) oral sex, recent (67% vs. 36%, $p<.05$) and lifetime (73% vs. 43%, $p<.01$) vaginal sex, to use alcohol with sex (21% vs. 12%, $p<.05$), and be involved with juvenile justice (46% vs. 23%, $p<.001$). We did not see significant differences in rates of interpersonal violence or condom use by venue location.

Venues included not only adolescents who lived near the venue, but adolescents who travelled from other parts of the city to come to that venue. When we compared participants who lived near the venue to participants who travelled from another part of the city, we did not observe differences in sexual or STI risk behaviors. These comparisons controlled for age and ethnicity.

Conclusion

Venue-based sampling, a staple for reaching hidden and stigmatized adult populations, is a feasible mechanism for recruiting and enrolling large numbers of adolescent males in high prevalence communities for STI prevention research. Our success in recruiting a large sample suggests it is acceptable to adolescent males and is a feasible alternative to clinic, school, and other institutional-based recruitment strategies for STI research. We found that adolescent males are willing to be STI tested in community settings. The community focus of venue-based sampling made it ideal for understanding community risk and informing screening and STI-prevention interventions [16].

We found that adolescent males involved in structured venues, which featured pro-social activities, had lower rates of STI risk behaviors, a finding consistent with youth development research showing that engagement in activities can be protective [17]. If sampling for the highest risk youth, then unstructured venues located directly in the highest prevalence zip codes would be the best way to assure the highest risk sample.

Recruitment of minor adolescents required adaptation of standard venue-based recruitment. In contrast to venue-based sampling with adult groups, we found it necessary to do extensive community engagement, and to work closely with community organizations and stakeholders to gain permission and access to venues that included minors. We found that these organizations and stakeholders were protective of the minors living in their communities and participating in their programs. Additionally, because many of our venues were events, and some of the venues offered limited access, we were unable to do rigorous time-location sampling (e.g. dividing up times into discreet increments and taking a random sample of time periods).

Although our rates of STI risk behaviors were high, our rates of infection were low. This is consistent with prevalence studies of adolescent males in this age range, which show slightly higher rates in juvenile justice facilities (4.8 to 5.9% across studies) [1, 18, 19], but similar or lower rates in schools serving high risk communities (2.3% in California alternative schools, 4.3% to 5.8% for 9^{th}–11^{th} graders in New Orleans schools) [3, 18]. This is also consistent with our county surveillance data which shows very low numbers of infections among 15–19 year-old males, but high numbers among 20–24 year old males. This likely represents low prevalence in this age group, even among high risk males. Our data suggest that one contributor may be the lack of age mixing. We observed a relatively low proportion of participants reporting partners more than 2 years older. This discrepancy presents an opportunity for primary STI prevention through education and behavioral risk reduction in these communities. While venue based sampling may not be an efficient way to identify infections, it is a potentially powerful tool for primary prevention.

A common critique of venue-based sampling is that, while providing access to hidden populations, it makes it difficult to generalize. For the purposes of adolescent STI research, sampling approaches may ultimately be a trade-off of biases [16]. Though household approaches to sampling may be conducted in such a way as to be statistically generalizable to a community, these approaches pose non-response biases due to adolescents'

confidentiality concerns, and may under-sample the highest-risk youth, who may not have stable housing, may live in chaotic homes, or may not be home at a time researchers are able to reach them. Sampling through institutions such as schools may also under-estimate risk because they miss out-of-school youth. Social network based samples may not be reflective of geographic communities. While our findings are not generalizable to all males, we believe they are applicable to neighborhoods in similar mid-sized cities for two reasons. First, we found consistent numbers of infections and rates of risk behaviors in similar types of venues (i.e. there was consistency within the sample). Second, the places participants were recruited from – public parks, apartment complexes, etc. – are not unique to our city.

All community sampling approaches requires engagement of stakeholders. However, to obtain access to adolescent populations, venues, and events, we needed to conduct an extensive and formal process of community engagement. Despite our efforts, which included one staff member whose work focused on community engagement and venue entry/selection, we still had differential access to venues. While our rates of infection and risk behaviors may be a better community estimate than school or other institution-based samples, our sample cannot be considered truly “representative” [16]. Despite these caveats, our community engagement phase provided access to many otherwise difficult to access venues and potentially hidden young men. Because we worked with organizations such as local police, local parks districts, and neighborhood organizations, community engagement enhanced access even to unstructured venues such as parks and street corners. The combination of community engagement and venue-based sampling allowed us to engage community stakeholders in a meaningful way and tap into their concerns for the well-being of young men in their communities. This process provided not just access, but a willing partner in the uptake and acceptability of STI research and future interventions.

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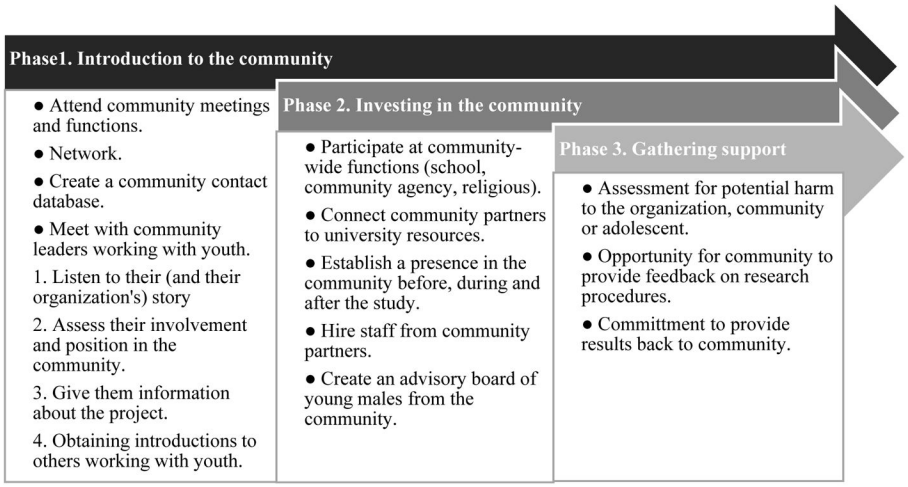

Figure 1.
Process of Community Engagement

Table 1

Population

	Total population N=667	
Demographics	***n or mean***	***% or SD***
Age *mean (SD)*	15.7	1.1
Race		
African American	326	49%
White	242	36%
Latino	43	6%
Mixed/Other	56	9%
Juvenile justice involvement	211	32%
Got a girl pregnant	46	7%
Fathered a child	38	6%
Disease Outcomes		
Ever been tested for an STI	148	22%
Ever been diagnosed with an STI	8	1%
Positive for Chlamydia at encounter	23	4%
Positive for Gonorrhea at encounter	4	0.6%
Sexual Behaviors		
Lifetime		
Gave oral sex	182	28%
Received oral sex	359	56%
Vaginal sex	353	56%
Gave anal sex	90	14%
Received anal sex	35	5%
Recent Last 3 months		
Gave oral sex	144	22%
Received oral sex	290	44%
Vaginal sex	323	49%
Gave anal sex	58	9%
Received anal sex	28	4%
STI Risk Behaviors		
More than 5 lifetime sex partners	159	24%
Hit slapped kicked partner	44	7%
Partner hit, slapped, kicked you	133	21%
Among sexually active participants,		
Non-condom use at last sex	149	40%
Last partner more than 2 years older	66	18%
Drug use at last sex	26	7%
Alcohol use at last sex	64	17%

Table 2

Differences by Venue

	Apartment	Community	Entertainment	LGBT	Network	Park	School	Adjudicated
Venues (n)	3	4	4	2	n/a	14	3	1
Recruited (n)	35	54	178	27	96	148	120	9
			Population					
Age (mean, *SD*)	15.9, *1.3*	15.4**, *1.2*	15.5**, *1.1*	16.4*,*1.0*	16.0, *1.0*	15.7, *1.2*	15.9, *1.0*	16.4, *1.0*
Race/Ethnicity n(%)								
African American	15(43%)	18(33%)**	25(14%)**	11(41%)**	65(68%)	102(69%)	82(68%)	8(89%)
White	1(3%)	30(56%)	138(78%)	12(44%)	13(14%)	31(21%)	16(13%)	1(11%)
Latino	16(46%)	5(9%)	6(3%)	2(7%)	5(5%)	3(2%)	6(5%)	0(0%)
Mixed/Other	3(9%)	1(2%)	9(5%)	2(7%)	13(14%)	12(8%)	16(13%)	0(0%)
Juvenile justice involvement	17(50%)	5(9%)**	26(15%)***	4(15%)**	40(43%)	62(43%)	51(45%)	6(67%)
			Disease Outcome					
Positive STI n(%)	1(3%)	1(2%)	3(2%)	0	8(8%)	5(3%)	6(5%)	1(11%)
			Sexual & STI Risk Behavior Outcomes (%)					
Oral Sex								
- Lifetime	19(59%)	10(19%)***	77(45%)	22(81%)	64(70%)	90(62%)	78(66%)	7(88%)
- Past 3 months	12(34%)**	6(11%)***	60(34%)	18(67%)	53(55%)	79(55%)	67(57%)	8(89%)
Vaginal Sex								
- Lifetime	24(75%)	7(13%)***	62(36%)	9(33%)***	67(76%)	100(70%)	76(66%)	8(89%)
- Past 3 mo.	21(62%)	7(13%)***	53(30%)*	3(11%)***	59(61%)	98(68%)	70(60%)	8(89%)
Anal Sex								
- Lifetime	5(15%)	4(7%)	15(9%)	16(59%)***	12(13%)	28(19%)	15(13%)	3(33%)
- Past 3 mo.	3(9%)	1(2%)	7(4%)	11(41%)***	8(8%)	24(17%)	6(5%)**	3(33%)**
>5 lifetime partners	24(75%)	7(13%)**	62(36%)***	9(33%)	67(76%)	100(70%)	76(66%)	8(89%)
No condom use last sex	7(37%)	6(67%)	33(46%)	7(37%)	31(44%)	38(39%)	23(29%)	4(44%)
Hit slapped kicked partner	5(16%)	3(6%)	6(3%)	1(4%)	10(11%)	7(5%)	10(9%)	2(22%)
Partner hit, slapped, kicked you	10(30%)	7(13%)	19(12%)	5(19%)	30(32%)	29(20%)	30(27%)	3(33%)

*p<.05,

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** p<.01,

*** p<.001, controlling for age and ethnicity on logistic regression analysis of behavioral outcomes