Comparison of participant demographics and yield of recruitment strategies in a study of men who have sex with men (MSM) in Metropolitan Detroit

Bradley E. Iott, MPH, MS¹, Tiffany C. Veinot, MLS, PhD¹, Jimena Loveluck, MSW³, Erin Kahle, PhD, MPH⁴, Leon Golson³, Akilah Benton, MPH³

¹ School of Information, University of Michigan, Ann Arbor, MI; ² Department of Health Behavior and Health Education, University of Michigan, Ann Arbor, MI; ³ UNIFIED – HIV Health and Beyond, Ypsilanti, MI; ⁴ School of Nursing, University of Michigan, Ann Arbor, MI

Abstract

Human-Computer Interaction research regarding HIV/AIDS prevention, care and support requires recruitment of diverse samples of men who have sex with men (MSM); yet, we know little about the comparative yield and diversity between different recruitment venues. We compared 11 recruitment venues used for 9 HIV prevention-related focus groups with MSM in Metropolitan Detroit. Of the 64 participants, 24 were clients recruited via an HIV/AIDS-focused nonprofit. Grindr increased the size of the sample, though the sample was more White and socioeconomically advantaged. Moreover, only 11.6% of Grindr respondents attended the focus groups. A mix of online and offline recruitment venues can generate a large and diverse sample of MSM, but venue performance is uneven.

Introduction

Men who have sex with men (MSM) are disproportionately affected by human immunodeficiency virus (HIV) infection, and despite relatively stable HIV incidence rates amongst MSM in general, there continue to be increases in HIV infection rates amongst young African American and Latino MSM⁵. HIV/AIDS prevention-related HCI research requires recruitment of diverse samples of MSM. Historically, recruitment of MSM has been challenging, especially pronounced for MSM of color, due to racism and stigma concerning sexual orientation and HIV status⁶. Given these challenges, a body of research has emerged regarding recruitment strategies for MSM, with prior research requiring recruitment of diverse samples of MSM in a study of men who have sex with men (MSM); yet, we know little about the comparative yield and diversity between different recruitment venues and methods⁵. Given the movement of many MSM communities to online spaces⁶, and the reduction in LGBT-focused offline spaces⁶, there is significant interest in Internet-based recruitment methods⁶. This is partly facilitated by increasing smartphone ownership rates amongst MSM⁷. The internet is also widely used by MSM to meet others via online dating applications and social media⁶, with location-based social networking applications to find sexual partners being especially popular⁷. To date, there has been little in the HCI literature that systematically compares recruitment methods used by HCI researchers looking to generate diverse and representative samples when working with marginalized groups. In the public health field, some recruitment studies have examined the performance of single online venues; yet little has been done to compare multiple online venues with offline strategies in terms of yield and demographics. Additionally, most prior public health research on recruitment of MSM has focused on online research activities (e.g., recruitment on social media sites such as Facebook, MySpace, and Craigslist)⁵,⁷,⁸,⁹,¹⁰; therefore, we know little about use of online and other recruitment venues for common HCI face-to-face research activities such as focus groups.

Furthermore, one difficulty in recruiting MSM for research is achieving representation of the larger population. Numerous studies have demonstrated that the recruitment venue is associated with the demographics and risk behaviors of the yielded subjects⁵,¹⁰. Previous studies suggest that recruitment for HIV-related research, especially via the Internet, results in the enrollment of predominantly white MSM, suggesting a need to learn the most effective strategies for reaching African American and Latino MSM⁵,¹⁰. As initial work in health informatics has shown, community-based participatory research can help to recruit diverse samples¹⁰; it is also one strategy which may perform better in terms of recruiting racially diverse samples of MSM¹⁰. However CBPR approaches to recruitment have rarely been evaluated alongside other methods.
This project is part of a larger effort which relies on focus groups with participatory design methods to inform the design of new technology to be used as part of an intervention for HIV prevention. This study compares recruitment venues for a focus group study that took place in southeastern Michigan between 2016 and 2017. The study was a collaboration between the University of Michigan and UNIFIED - HIV Health and Beyond (UHHB). UHHB is a nonprofit HIV service, advocacy and outreach organization that provides HIV prevention, education, and outreach resources to 10 counties across Southeast Michigan. UHHB staff members helped to plan the study, implemented recruitment efforts, and facilitated focus groups along with UM researchers. This study compares the yield of a number of online and offline MSM recruitment strategies in Metropolitan Detroit, at each stage of eliciting participation in nine focus groups. We also compare the demographics of participants recruited from each of our recruitment venues in order to understand the methods that best reach these groups.

Methods

The goal of the larger study was to conduct a series of focus groups with MSM in southeastern Michigan. The focus groups were intended to inform the development of a technology-based stigma reduction intervention focused on increasing the uptake of HIV testing and pre-exposure prophylaxis (PrEP) in this population. In order to recruit MSM in this region, activities were conducted in Wayne, Washtenaw, Oakland and Macomb Counties, which included the MSM-populous cities of Detroit, Ferndale, Royal Oak, Ypsilanti, and Ann Arbor. Recruitment efforts linked respondents to either: 1) the phone number and email address of a study team member; or 2) an online survey which screened for eligibility and gathered contact information. Each electronic recruitment method had a separate but identical online survey link to allow for accurate determination of the recruitment method that attracted each interested volunteer. Each person who telephoned the study team was also asked how they learned about the study, and their responses were recorded in a table. Eligibility criteria for our study included being 18 years of age or older, being a self-identified male, having “hooked up” with men, and living in Wayne, Macomb, Oakland, or Washtenaw Counties. The study was approved by the Health Sciences and Behavioral Sciences Institutional Review Board at the University of Michigan.

Recruitment Venues

Each of the recruitment venues are summarized below in Table 1.

<table>
<thead>
<tr>
<th>Venue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributing Flyers and Palm Cards</td>
<td>Coffee shops, bars, restaurants, university student centers, gyms, and clinics</td>
</tr>
<tr>
<td>Bar Outreach</td>
<td>Local bar, club on Pride night</td>
</tr>
<tr>
<td>Recruitment at UHHB</td>
<td>Direct communication with clients via face-to-face, phone, SMS, email, or social media</td>
</tr>
<tr>
<td>Posts on Social Media</td>
<td>Facebook posts on study team profiles, on student Facebook groups, and on organizations’ Facebook groups</td>
</tr>
<tr>
<td>Email Groups</td>
<td>University student email groups and Spectrum Center newsletter</td>
</tr>
<tr>
<td>Advertisements on Grindr, Scruff, Facebook, and Instagram</td>
<td>Advertisements placed on Grindr, Scruff, Facebook, and Instagram</td>
</tr>
</tbody>
</table>

Follow Up with Recruits

Participants who phoned the research team or completed the online survey-based screening instrument were called by members of the research team. If the respondent answered, the study team member would discuss participation in the study and administer screening questions. Respondents were offered transportation to a focus group if needed. If interested in participating in a focus group, participants were added to a secure database.

When speaking with an interested recruit, the study team member recorded the following information: name, phone number, email address, desired focus group date, where the respondent heard about the study, and transportation details (when needed to be provided by the research staff). Surveys conducted at the beginning of each focus group gathered demographic data on each participant.

Non-identifying voice messages were left to respondents who did not answer calls from the study team. Those who did not answer the first phone call were phoned one additional time.
Reminders were sent via SMS message to participants 1-2 days before the scheduled focus group discussion. Reminder messages included a question asking participants to confirm their intention to attend the focus group.

Data Analysis
Demographics were tabulated from each subjects’ survey responses. We calculate conversion rates per venue as the number of participants from a specific venue who attended a focus group divided by those who completed the online screening instrument or contacted the research team directly by phone. Pearson chi square tests of association were conducted to explore associations between recruitment venue and each of the demographic variables collected. All tests were conducted with an alpha level of 0.05.

Results
Relative yield of recruitment venues
The yield of each recruitment venue is reported in Table 2. UHHB and Grindr contributed the greatest volume of participants. Grindr had a very low conversion rate while UHHB had a high proportion of attendance by respondents. Email groups generated a small number of participants with a 100% conversion rate. Flyers, Scruff, organizational Facebook posts, personal networking, and bar outreach each yielded a small number of participants. Posts in Facebook groups and newsletter articles yielded no focus group participants.

<table>
<thead>
<tr>
<th>Venue</th>
<th># reached</th>
<th># of clicks (internet ads only)</th>
<th># who started online screening instrument</th>
<th># who completed online screening instrument or phoned research team</th>
<th># who were reached by phone (number, percent)</th>
<th># who said they would attend (number, percent)</th>
<th># who actually attended (number, percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UHHB Staff Recruitment</td>
<td>217</td>
<td>NA</td>
<td>4</td>
<td>25</td>
<td>25, 100%</td>
<td>25, 100%</td>
<td>24, 96%</td>
</tr>
<tr>
<td>Grindr*</td>
<td>28000</td>
<td>1407</td>
<td>367</td>
<td>173</td>
<td>91, 52.6%</td>
<td>50, 28.9%</td>
<td>20, 11.6%</td>
</tr>
<tr>
<td>Email Groups†</td>
<td>1156</td>
<td>NA</td>
<td>20</td>
<td>7</td>
<td>7, 100%</td>
<td>7, 100%</td>
<td>7, 100%</td>
</tr>
<tr>
<td>Flyer/Palm Card</td>
<td>NA</td>
<td>NA</td>
<td>0</td>
<td>6</td>
<td>6, 100%</td>
<td>6, 100%</td>
<td>4, 66.7%</td>
</tr>
<tr>
<td>Scruff*</td>
<td>2042191</td>
<td>2376</td>
<td>13</td>
<td>8</td>
<td>5, 62.5%</td>
<td>3, 37.5%</td>
<td>3, 37.5%</td>
</tr>
<tr>
<td>Organization Facebook Post†</td>
<td>27566</td>
<td>NA</td>
<td>0</td>
<td>2</td>
<td>2, 100%</td>
<td>2, 100%</td>
<td>2, 100%</td>
</tr>
<tr>
<td>Personal Networking</td>
<td>4859</td>
<td>NA</td>
<td>0</td>
<td>3</td>
<td>3, 100%</td>
<td>2, 66.7%</td>
<td>2, 66.7%</td>
</tr>
<tr>
<td>Facebook Ad*</td>
<td>11552</td>
<td>90</td>
<td>2</td>
<td>1</td>
<td>1, 100%</td>
<td>1, 100%</td>
<td>1, 100%</td>
</tr>
<tr>
<td>Bar Outreach</td>
<td>139</td>
<td>NA</td>
<td>0</td>
<td>2</td>
<td>2, 100%</td>
<td>1, 50%</td>
<td>1, 50%</td>
</tr>
<tr>
<td>Facebook Groups†</td>
<td>289</td>
<td>NA</td>
<td>1</td>
<td>1</td>
<td>0, 0%</td>
<td>0, 0%</td>
<td>0, 0%</td>
</tr>
<tr>
<td>Publishing Article in Newsletter†</td>
<td>2200</td>
<td>NA</td>
<td>0</td>
<td>0</td>
<td>0, 0%</td>
<td>0, 0%</td>
<td>0, 0%</td>
</tr>
<tr>
<td>Total</td>
<td>2118169</td>
<td>1407</td>
<td>407</td>
<td>228</td>
<td>142, 69%</td>
<td>97, 44%</td>
<td>64, 30%</td>
</tr>
</tbody>
</table>

* number of ad impressions, not the number of users
† number of users, not necessarily the number of individuals who saw the ad

Demographics of participants yielded from each venue
Focus group participants represented a range of social identities, though each recruitment venue yielded a different distribution of individuals. Recruitment from UHHB staff members yielded the largest number of African American MSM, unemployed respondents, and individuals with a monthly income between $0 and $1000. Additionally, 70.83% (17/24) of participants recruited by UHHB had an educational attainment of “some college” or less. Moreover, UHHB represented the largest source of HIV positive individuals in our study sample (21/24, 87.5%).

Grindr yielded a different demographic of participants relative to UHHB recruitment efforts. Subjects from Grindr had higher proportions of white MSM (17/20, 85%), college completion (13/20, 65%) had a bachelor’s or graduate
degree), full time employment (14/20, 70%), and high income (10/20, 50% reported monthly income of $3001 or greater). Participants from university email groups were also overwhelmingly white (6/6, 100%), college educated (6/6, 100% had a bachelor’s or graduate degree), and full time students (5/6, 83.3%).

**Chi-square test of association**

**Race.** A chi square test of independence for recruitment venue and race determined that the variables are independent (83.133, p=0.0, df=32). The proportion of African Americans coming from UHHB staff recruitment was greater than expected, while the proportion of white participants was much lower than expected. For Grindr recruitment, the proportion of African American recruits was smaller than expected, while white subjects were a greater proportion than expected. Four multiracial participants were recruited via Grindr, which was greater than the expected value.

**Education.** A chi square test of independence for recruitment venue and educational attainment determined that the variables are independent at the α=0.05 confidence level (69.071, p=0.003, df=40). The proportion of UHHB participants who attended some college or received an associate degree were higher than expected, while proportions of those who held bachelor’s or graduate degrees were lower than expected. The proportion of Grindr and email group recruits who held a bachelor’s degree or a graduate degree was greater than expected.

**Income.** A chi square test of independence for recruitment venue and income determined that the variables are not independent at the α=0.05 confidence level (48.003, p=0.473, df=48). The proportion of subjects recruited from UHHB whose monthly income was between $0 and $1000 was greater than expected and no UHHB participants had an income over $4001 per month. The proportion of Grindr recruits whose monthly income was between $0 and $2000 were less than expected, while the proportion of Grindr subjects whose monthly income was $3001+ was greater than expected.

**HIV Status.** A chi square test of independence for recruitment venue and ethnicity determined that the variables are independent at the α=0.05 confidence level (31.222, p=0.0, df=8). The proportion of UHHB recruits who were HIV positive was greater than statistically expected and the proportion of HIV negative subjects was lower than expected. The proportion of Grindr subjects who were HIV positive was lower than expected, while the proportion of HIV negative individuals was higher than expected.

**Discussion**

We believe that this is the first work to compare the yield and diversity of a variety of recruitment venues for identifying MSM to participate in face-to-face focus groups with participatory design exercise, a common data collection method in HCI research. We found that Grindr and UHHB staff recruitment yielded the greatest number of participants for our study. UHHB recruitment had a high conversion rate, as did other recruitment venues with lower overall yield such as email groups, organization Facebook posts, personal networking, and bar outreach. There was a low rate of participant turn out (11.6%) among Grindr recruits, despite the large number of prospects generated. UHHB staff recruitment reached the greatest number of socio-economically marginalized individuals, while Grindr and email groups yielded a greater proportion of white, highly educated and high income MSM. Overall yield of UHHB, email lists and personal networking meant that they were not alone sufficient.

Previous work has shown that field and online recruitment strategies yield differences in sample size, demographic characteristics, and risk behaviors. We found that UHHB staff recruitment efforts were most successful at identifying socio-economically marginalized individuals, including people who were African American, HIV positive, unemployed, had incomes below the federal poverty level, and had low educational attainment. Because MSM recruited from UHHB were mainly existing clients, we intuitively expect UHHB’s recruitment sample to have a higher proportion of HIV positive individuals. Grindr allowed recruitment of individuals who were predominantly white, full time employees, highly educated, and HIV negative, which parallels previous work characterizing Grindr recruits. Participants identified by email lists were predominantly white, HIV negative, full time students with at least a bachelors or graduate degree; this is likely due to the fact that the emails were for LGBT University of Michigan students in different programs. Previous work has shown that online recruitment venues yield fewer African-American and Latino than white MSM, which has been attributed to differences in the quality of internet usage, such as a greater likelihood of accessing the internet using a smartphone. Because the demographics of recruits differed greatly between each recruitment venue, findings suggest that it is necessary to consider the use of multiple recruitment methods when planning a research or outreach effort with MSM. Moreover, online recruitment methods alone were insufficient for identifying prospects from marginalized populations, indicating the need to work with community organizations such as UHHB, which has established relationships and trust with disadvantaged groups. Additionally, by beginning our partnership with UHHB before recruitment started, we were able to coordinate with UHHB and
leverage the organization’s expertise to identify the best recruitment strategies for our purpose and ensure that recruitment materials were acceptable to the intended audience. However, despite the success of UHHB’s recruiting efforts in drawing underrepresented groups to our sample, it is likely that participants identified by UHHB represented only those connected to the organization’s services. Individuals not connected to UHHB or other HIV service providers might face greater need for, and barriers to, resources for sexual health18.

Findings revealed low rates of conversion of Grindr and Scruff-recruited prospects into actual focus group participants. Non-participants provided several reasons for their failure to attend the focus group after committing to do so, including an inability to travel to a focus group due to inclement weather and a personal emergency. Other non-participants simply did not attend without contacting the study team. We believe that some recruits may not have felt comfortable participating in an in-person focus group due to not knowing other participants and due to the inherently public nature of a focus group, especially due to the possibly of HIV status disclosure. Future studies might consider recruitment yield specifically with the use of online surveys or online focus groups, to determine if results differ for in-person methods. Moreover, many calls made by the study team to prospects were not answered or were to non-working phone numbers. It is likely that prospects who completed the screening instrument did not want, remember or expect a call from the study team, leading them to ignore the ringing phone or to input an invalid phone number. Previous work has shown that subject loss in focus groups can range from 25-40%19,20,1 though our observed attrition rate for Grindr recruits was much greater than 40%. However, attrition rates for UHHB and email lists were much lower than 25%.

Additionally, it is likely due to the trusted position UHHB holds in the community that its case workers were able to identify so many socio-economically marginalized individuals for participation in our study. Thus, we posit that UHHB’s recruitment efforts hold an enormous trust-related value that is difficult to empirically measure. There is a need to determine the value of trust in organizations21, especially in those that provide healthcare and resources22. This suggests that HCI researchers may benefit from collaborating with community-based organizations so as to develop interactive systems that are useful and usable for diverse populations.

This study has several limitations that should be kept in mind. First, in-person focus groups demand that participants be present, and thus, identifiable to everyone else who is there. This may have created a barrier for participation for some members of the marginalized MSM community and specifically communities of color who may feel more comfortable engaging in online venues. Additionally, aside from reported age and county of residence, we have no additional demographic data for respondents who completed the screening instrument but did not attend a focus group. Moreover, because we have limited information about reasons for not attending a focus group after a positive RSVP was returned, we cannot explain how many non-participating respondents actually intended to participate in the study, but were otherwise prevented from doing so. We recognize that scheduling conflicts contributed to non-participation, as 9 focus groups were conducted across 4 cities, creating only limited opportunities for each respondent to participate. Moreover, focus groups were held at specific times that conflicted with some participants’ work schedules. Furthermore, many phone numbers provided in the screening instrument were invalid or not available; it is possible that there is a need to make it clearer that a valid phone number is necessary to be contacted by a researcher for study scheduling. Finally, regional characteristics may have influenced the performance of each of the recruitment venues. Grindr was chosen as a popular location-based social networking application in Michigan, though other states may feature a different distribution of usage of these applications. Regional characteristics should be considered when selecting venues in other markets.

**Conclusion**

We found that a mix of online and offline recruitment venues is necessary to generate representative samples of MSM for HCI research in HIV prevention. Our study reinforces the need for partnerships with community organizations to reach marginalized groups. We find that online recruitment venues increased the size of our sample, though with limited contribution to the diversity of the sample. Consideration of the ability of different recruitment venues to yield diverse samples is of utmost importance in current research, especially in studies from the HIV Prevention Trials Network recruiting large samples of African American MSM23. It is also important for HCI researchers who wish to ensure that their interactive systems reflect the needs, priorities and constraints faced by diverse populations. Critical analysis of recruitment venue performance for research in the MSM community is necessary to ensure that diverse samples are generated and that the most marginalized individuals are reached.

**References**