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RELATIVE EFFICIENCY OF FIELD AND ONLINE STRATEGIES IN THE RECRUITMENT OF HIV-POSITIVE MEN WHO HAVE SEX WITH MEN

Andrea C. Vial, MS,

Hunter College Center for HIV/AIDS Educational Studies and Training (CHEST) at the time of data collection, and is now affiliated with the Department of Psychology, Yale University

Tyrel J. Starks, PhD, and

Center for HIV/AIDS Educational Studies and Training (CHEST), the Department of Psychology, Hunter College of the City University of New York (CUNY), and the Health Psychology and Clinical Science Doctoral Subprogram, The Graduate Center of CUNY

Jeffrey T. Parsons, PhD

Center for HIV/AIDS Educational Studies and Training (CHEST), the Department of Psychology, Hunter College of the City University of New York (CUNY), the Health Psychology and Clinical Science Doctoral Subprogram, The Graduate Center of CUNY, and the CUNY School of Public Health at Hunter College

Abstract

Efforts to reach HIV-positive men who have sex with men (MSM) and link them to care must be expanded; however, finding and recruiting them remains a challenge. We compared the efficiency of three recruitment sources in reaching self-identified HIV-positive MSM with various characteristics. Relative to recruitment online and at clubs and bars, AIDS Service Organizations (ASOs) were significantly more efficient in reaching HIV-positive MSM in general. This was also true for those with specific characteristics of interest such as substance/stimulant use, and HIV-positive MSM who were racial/ethnic minorities. Both ASOs and online recruitment were more efficient than clubs and bars in reaching HIV-positive MSM not taking HIV medication. This was also the case for White HIV-positive MSM in general, and White HIV-positive MSM who used substances and stimulants. Online recruitment was also more efficient than clubs and bars in reaching HIV-positive MSM who were young across the board.

About 1.1 million persons in the United States are living with HIV, and over half of those are men who have sex with men (MSM; Centers for Disease Control and Prevention [CDC], 2011). Although diagnoses generally decreased between 2008 and 2011, they increased among MSM (CDC, 2012a). In 2011 in New York City (NYC), for the first time in a reporting period, over half of new HIV/AIDS diagnoses were among MSM (New York City Department of Health and Mental Hygiene [DOH], 2012).

Ideally, HIV-positive MSM receive treatment and services which increase their survival rates, improve their quality of life, and reduce HIV transmission (CDC, 2011). However, finding and recruiting MSM remains a challenge, particularly when focusing on substance-using MSM (Jenkins, 2012) or racial/ethnic minority MSM (Sullivan et al., 2011). To minimize the impact of HIV/AIDS, efforts to reach HIV-positive MSM and link them to care must be expanded (CDC, 2012b). Here, we re-analyzed previously published data (Parsons, Vial, Starks, & Golub, 2013) to compare different recruitment venues in their likelihood of reaching self-identified HIV-positive MSM with specific characteristics.

Epidemiological reports suggest that racial/ethnic minority MSM are disproportionately affected by HIV/AIDS (CDC, 2011, 2012b; Prejean et al., 2011). According to 2010 estimates (CDC, 2012b), Black MSM comprise 54.5% of all HIV-positive Blacks, and Hispanic/Latino MSM represent 65.7% of all HIV-positive Hispanics/Latinos. Among Whites, MSM comprise the majority of HIV and AIDS cases (80.5% and 78%, respectively; CDC, 2012a). White MSM also comprise the single group with the majority of HIV and AIDS diagnoses among all MSM (46.6% and 46.9% of all cases, respectively; CDC, 2012a). Surveillance reports also indicate an increase in the proportion of MSM living with HIV/AIDS who are younger than 30 (Prejean et al., 2011). Between 2006 and 2009, HIV diagnoses among MSM aged 13–29 increased by 34% (Prejean et al., 2011). Finally, substance use has been linked to worsened health outcomes in HIV-infected populations including MSM (Cohn et al., 2011; Rajasingham et al., 2011), and has been found to be negatively associated with HIV medication adherence (Gonzalez, Barinas, & O’Cleirigh, 2011; Rosen et al., 2013). Stimulants (e.g., methamphetamine, cocaine) in particular have been a major focus for primary prevention efforts (CDC, 2007; Garofalo, Mustanski, McKirnan, Herrick, & Donenberg, 2006).

Addressing the needs of HIV-positive MSM and knowing how best to reach and recruit them into behavioral research and intervention studies is imperative. This is particularly true with regards to specific subgroups of HIV-positive MSM who tend to be underrepresented relative to their HIV prevalence, such as racial/ethnic minorities (Du Bois, Johnson, & Mustanski, 2012). Because different recruitment strategies vary in the characteristics of the samples they yield (Fisher, Purcell, Hoff, Parsons, & O’Leary, 2006; Grov, 2012; Parsons et al., 2013; Vial, Starks, & Parsons, 2014), knowing where to concentrate efforts can maximize the likelihood of reaching specific subgroups of HIV-positive MSM. However, despite the potential utility of this information, few studies report associations among recruitment venue and risk behaviors or HIV prevalence (Barresi et al., 2010).

Here, we compare three types of recruitment venues (clubs and bars, AIDS Services Organizations [ASOs], and online venues) in their likelihood of reaching different subgroups of HIV-positive MSM with specific characteristics. We thus expand on Parsons et al. (2013) by focusing on HIV-positive MSM exclusively, and by performing a more detailed analysis on specific subgroups of HIV-positive MSM. A similar approach was taken by Vial et al. (2014) focusing on HIV-negative MSM. Recruitment of HIV-positive MSM presents unique challenges, but also the possibility of recruiting in venues that are typically not included in strategies aimed at reaching HIV-negative MSM (e.g., ASOs). The present analyses will provide a more nuanced understanding of the efficiency of different

recruitment venues in reaching self-identified HIV-positive MSM, thus expanding on Parsons et al. (2013) and complementing the findings by Vial et al. (2014).

METHOD

We compared different recruitment venues in their likelihood of reaching self-identified HIV-positive MSM with specific characteristics, including how efficient they were in reaching White as well as racial/ethnic minority (i.e., Black and Hispanic/Latino) MSM. This is particularly important, as racial/ethnic minority MSM continue to be underrepresented in HIV research relative to their HIV prevalence (Du Bois et al., 2012). We also examined venues' efficiency in reaching young (18–29) self-identified HIV-positive MSM in general, as well as within the racial/ethnic subgroups of interest. Finally, we evaluated which recruitment strategies reached higher proportions of substance users (including stimulant users)—both among self-reported HIV-positive MSM as a whole, as well as within the racial/ethnic subgroups of interest.

Data were collected between July 2009 and January 2010 simultaneously in all venues to recruit men into one of two behavioral intervention trials of drug-using MSM in the NYC area, looking to enroll MSM aged 18 or older, of all racial and ethnic backgrounds (see Parsons et al., 2013, for additional details). Participants completed an 11-item survey (described below) to determine preliminary eligibility for one of the two studies. The analyses presented here correspond to this preliminary eligibility survey data. All recruitment materials (e.g., flyers, cards, online banners, etc.) utilized the same images and text, which minimized media-related variability across recruitment strategies. Likewise, the images and text used to post online were the same regardless of the specific type of website.

PARTICIPANTS AND PROCEDURES

We surveyed men in the field using mobile devices which allowed respondents to answer questions privately. Field recruiters approached men at clubs and bars (e.g., Barracuda, Boiler Room, G Lounge, Phoenix Bar, Therapy, XES, etc.) as well as ASOs (e.g., Gay Men's Health Crisis; The LGBT Center, etc.) and Community venues (e.g., coffee shops and street fairs in gay-identified neighborhoods.) Online, we screened men using an electronic version of the survey made available through different websites, including sites catering to MSM (e.g., Gay.com, Adam4adam.com); Craigslist.com, a site hosting classified ads; and Facebook.com, a social networking site. Sample demographics by recruitment venue are provided in the Results section.

MEASURES

The 11-item survey assessed age, sex with other men (yes/no), residence in or near NYC (yes/no), and HIV status (positive, negative, or unknown). Those who self-identified as HIV-positive were also asked whether they were taking HIV medication (yes/no). All respondents were also asked which drugs (if any) they used in the previous 90 days (cocaine, ecstasy, methamphetamine, ketamine, GHB, and poppers). Those who used at least one drug were categorized as substance users, and those who used cocaine and/or methamphetamine specifically were categorized as stimulant users. Respondents also

selected their race/ethnicity (White, Black, Hispanic/Latino, Asian, Native American, Multiracial, or Other). Those who were either Black or Hispanic/Latino were categorized as racial/ethnic minority MSM (no differences were found between Black and Hispanic/Latino HIV-positive MSM that would contraindicate combining them; see Results section).

ANALYTIC STRATEGY

All variables of interest were assessed categorically, so we used Chi-Square tests of independence to evaluate associations between recruitment strategy and sample characteristics. Because we were interested in three different categories or groups (i.e., three recruitment venues), we further evaluated any significant differences with follow-up analyses using Fischer's Exact Tests with a Bonferroni-corrected $\alpha = .017$, to adjust for multiple comparisons.

RESULTS

Of the 3,640 men who completed the survey, 797 (21.9%) were excluded from analyses: 420 for not meeting basic eligibility criteria (e.g., not MSM; not from the NYC area; younger than 18) and 377 for missing data on key variables. Additionally, for these analyses we excluded 93 MSM recruited from Community venues (79 self-identified HIV-negative/unknown and 14 HIV-positive). We did this because of the low numbers of HIV-positive MSM recruited in this way, which would have prevented us from drawing any meaningful conclusions about the efficiency of this recruitment strategy. In summary, this yielded a sample of 2,750 MSM. Approximately 18% self-identified as HIV-positive ($n = 497$). See Table 1 for descriptive information.

As shown in Table 2, online recruitment resulted in the highest total number of HIV-positive MSM (48.29% of all HIV-positive MSM recruited). Clubs and bars followed, as they were the source of 33% of all HIV-positive MSM recruited. ASOs were responsible for the smallest percentage of HIV-positive MSM (18.7%). However, in terms of efficiency, ASOs yielded significantly higher proportions of HIV-positive MSM compared to clubs and bars, while online recruitment fell in-between. This was also the case for substance-using and stimulant-using HIV-positive MSM. Online recruitment and ASOs both resulted in higher proportions of HIV-positive MSM who were not taking HIV medication compared to clubs and bars. Also, online recruitment reached significantly higher proportions of young HIV-positive MSM aged 18–29 compared to clubs and bars (ASOs did not differ from either online recruitment or clubs and bars).

Similarly, online recruitment and ASOs both resulted in higher proportions of White HIV-positive MSM compared to clubs and bars (see Table 2). Online recruitment and ASOs both resulted in higher proportions of substance-using White HIV-positive MSM compared to clubs and bars. The same pattern emerged for those who used stimulants. Online recruitment yielded significantly higher proportions of White HIV-positive MSM who were also young (18–29) compared to clubs and bars (ASOs did not differ from either online recruitment or clubs and bars). This was also the case for White HIV-positive MSM who were not taking HIV medication.

Before examining the efficiency of each venue in reaching racial/ethnic minority MSM, we compared Black ($n = 103$) and Hispanic/Latino ($n = 103$) HIV-positive MSM to see if any differences were present that would contraindicate combining them, similar to Vial et al. (2014). Both were equally likely to be found at any recruitment venue, $\chi^2(2) = 2.41, p = .300$; to be 18–29 years old, $\chi^2(1) = 1.12, p = .291$; to take HIV medication, $\chi^2(1) = .50, p = .481$; to use substances in general, $\chi^2(1) = 1.87, p = .171$; and stimulants in particular, $\chi^2(1) = .124, p = .725$. Thus, we combined HIV-positive Black and Hispanic/Latino MSM for the rest of our analyses.

As shown in Table 2, ASOs yielded significantly higher proportions of racial/ethnic minority HIV-positive MSM compared to clubs and bars, while online recruitment fell in-between. The same pattern emerged for racial/ethnic minority HIV-positive MSM who used substances in general and stimulants in particular. ASOs were more efficient than both clubs and bars and online recruitment in reaching racial/ethnic minority HIV-positive MSM who were not taking HIV medication. Finally, online recruitment yielded significantly higher proportions of racial/ethnic minority HIV-positive MSM who were young (18–29) compared to clubs and bars (ASOs did not differ from either online recruitment or clubs and bars).

DISCUSSION

In order to minimize the impact of HIV/AIDS (e.g., improve quality of life; reduce transmission rates, etc.), it is imperative to expand efforts to reach HIV-positive MSM and link them to care (CDC, 2012b); however, reaching them remains a challenge (Jenkins, 2012; Sullivan et al., 2011). Here, we re-analyzed previously published data (Parsons et al., 2013) to compare different recruitment venues in their likelihood of reaching self-identified HIV-positive MSM with specific characteristics. These re-analyses revealed that, while some strategies seem more effective in reaching higher numbers of HIV-positive MSM (i.e., recruiting online and at clubs and bars), other strategies (recruiting at ASOs) were significantly more efficient in reaching HIV-positive MSM in general, as well as those with specific characteristics of interest such as racial/ethnic minority background and substance/stimulant use.

Together with ASOs, online recruitment was more efficient than clubs and bars in reaching self-identified HIV-positive MSM in general who were not taking HIV medication; White HIV-positive MSM in general; and White HIV-positive MSM who used substances and stimulants. Across the board, online recruitment was more efficient than clubs and bars in reaching HIV-positive MSM who were young (ASOs did not differ from either online recruitment or clubs and bars). A cohort effect might have been expected whereby young HIV-positive MSM would be more easily found online compared to ASOs, for two reasons: One, young MSM might spend more time online compared to older MSM. And two, on average, young HIV-positive MSM might have spent less time living with an HIV diagnosis compared to their older peers—and thus might be less likely to be connected to an ASO. However, this was not the case in our sample of MSM. However, while the concentration of young HIV-positive MSM tended to be higher among those recruited online compared to those recruited at ASOs, these differences did not reach statistical significance.

While Parsons et al. (2013) found that internet-based recruitment was generally more efficient than field-based recruitment in reaching MSM who used substances in general as well as stimulants in particular, the re-analyses presented here suggest that this may not be so when considering HIV-positive MSM specifically. Although online recruitment was just as efficient as ASOs in reaching substance and stimulant users among White HIV-positive MSM, ASOs were the single most efficient venue in reaching substance/stimulant-using HIV-positive MSM. This was so both in general as well as in the racial/ethnic minority subgroup. This highlights the importance of establishing lasting collaborative ties with ASOs, as they continue to represent an important source for researchers and practitioners to find HIV-positive MSM of various characteristics that are often the focus of prevention work.

Nevertheless, online recruitment emerged as the strategy yielding the highest percentage of HIV-positive MSM in general (about half of all HIV-positive MSM recruited), with relatively high levels of efficiency. Considering the convenience and lower cost of internet-based relative to field-based recruitment (Parsons et al., 2013), this suggests online recruitment is both an effective *and* efficient strategy to recruit HIV-positive MSM, either alone or in combination with recruitment at ASOs. In contrast, recruitment at clubs and bars emerged as a relatively inefficient strategy, reaching comparably high numbers of HIV-positive MSM in general, but much lower-than-expected concentrations of HIV-positive MSM with the characteristics of interest examined here (i.e., racial/ethnic background, age, substance/stimulant use, HIV medication status).

The goal of this study was to examine the efficiency of different recruitment venues in reaching self-identified HIV-positive MSM with various characteristics. We did not seek to examine the underlying reasons why MSM found at different venues exhibit different demographics and behaviors. For example, why did ASOs and online venues yield higher proportions of HIV-positive MSM who were not taking medication? Our data are ill suited to address these types of questions. However, it is worthwhile for future investigations to inquire further and design studies that are better suited to examine the reasons why some MSM may be found in certain places rather than others.

One caveat to this study is the use of convenience sampling which impacts the potential generalizability of our results. This sampling methodology is very common in HIV surveillance work (Magnani, Sabin, Saidel, & Heckathorn, 2005), and in some cases it can be considered more or less inevitable. For example, not all ASOs will be willing to collaborate by allowing recruitment in their premises, and some researchers/practitioners will be more successful than others at establishing lasting partnerships with ASOs. This will likely result in sampling that is somewhat biased. Although any sampling frame is limited by definition, it is important to keep in mind that our venue selection can, by itself, limit the sample characteristics reported here.

Another caveat refers to the extreme brevity of our survey: We did not collect data on income level, connection to HIV/AIDS care and related services, medication adherence, or high-risk sexual behavior (e.g., engaging in unprotected anal intercourse). HIV-positive MSM who engage in high-risk sexual behaviors are of particular interest to HIV prevention

work, and future studies should examine ways in which they can be reached most efficiently. Similarly, our substance use data were limited to use of any of a variety of drugs in the previous 90 days, regardless of frequency of use, mode of administration, clinical dependence, etc. HIV-positive MSM who routinely engage in drug use, who become dependent, and/or who inject drugs might be at higher risk for worsened health outcomes, and more research is needed to arrive at a more complete understanding of where they might be found most efficiently.

More generally, because our data came from recruitment efforts aimed at enrolling MSM into interventions focused on substance use, the recruitment materials used both at ASOs and online had imagery and text meant to target substance users. This could have impacted the likelihood for these venues to reach higher proportions of substance-using MSM. Recruitment campaigns not focused on substance use might not result in comparably high proportions of substance-using HIV-positive MSM. Conversely, it is also possible that this focus on substance use might have turned away other types of HIV-positive MSM, who might then be under-represented in our final sample. Similar to Vial et al. (2014), the results presented here indicate that recruitment strategies that include targeted advertisement materials (e.g., flyers and business cards posted and distributed at ASOs; online banners and ads) work better to attract HIV-positive MSM of certain characteristics than other strategies, like recruiting at clubs and bars, which make this targeting impossible (as recruiters in clubs and bars approached any available men without being able to estimate whether they would meet behavioral criteria or not). Based on these findings, we recommend recruitment plans incorporate strategies that allow for strategic targeting.

Finally, a potential limitation is the combination of Black and Hispanic/Latino MSM into a single group of racial/ethnic minority MSM. The decision to group them was not entered lightly: While we recognize that meaningful cultural differences exist between these groups, they are similar in terms of their epidemiological risk for HIV transmission. In our sample in particular, Black and Hispanic/Latino HIV-positive MSM were no different in terms of age, substance/stimulant use, and HIV medication status, and we believe the results presented here could be useful for researchers and programs who seek to recruit racial/ethnic minority HIV-positive MSM without regard to the specifics of their background. Nevertheless, future work needs to focus on conducting more detailed examinations of ways in which Black and Hispanic/Latino HIV-positive MSM might differ, and whether certain recruitment strategies might be more efficient in reaching one group or the other.

Despite these limitations, our findings suggest that recruitment strategies can be tailored to improve their efficiency in reaching HIV-positive MSM from the subgroups most impacted by the epidemic. Above and beyond Parsons et al.'s (2013) findings, we have shown that, when it comes to HIV-positive MSM, ASOs rather than online recruitment result in higher proportions of substance and stimulant users, although online recruitment was overall a quite effective and efficient strategy. We believe these findings can prove beneficial to those interested in linking HIV-positive MSM to treatment and care, or to recruit them for research purposes. While some strategies will yield higher overall numbers of HIV-positive MSM, the findings reported here strongly indicate that the specific characteristics of HIV-positive MSM vary systematically based on recruitment venue, and certain recruitment

strategies will result in HIV-positive samples in which MSM from racial/ethnic minority backgrounds, MSM who are young, or MSM who use substances/stimulants are better represented.

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TABLE 1

Sample Characteristics

	Total Sample	HIV-Positive
	<i>n</i> (%)	<i>n</i> (%)
OVERALL	2750 (100)	497 (18.1)
Age		
18 to 24	578 (21.0)	36 (7.2)
25 to 29	674 (24.5)	59 (11.9)
30 to 34	478 (17.4)	59 (11.9)
35 to 39	339 (12.3)	71 (14.3)
40 and above	681 (24.8)	272 (54.7)
Race		
Black	343 (12.5)	103 (20.7)
Hispanic/Latino	462 (16.8)	103 (20.7)
White	1524 (55.4)	239 (48.1)
Other ^a	419 (15.2)	52 (10.5)
Currently taking HIV meds		
Yes	396 (14.4)	396 (79.7)
No	95 (3.5)	95 (19.1)
Missing	2259 (82.1)	6 (1.2)

^aIncludes Asian, Native American, multiracial, and other race/ethnicity.

TABLE 2

Characteristics of HIV-Positive MSM in New York City by Recruitment Strategy

	All Venues n (%)	ASOs n (%)	Online n (%)	Clubs/bars n (%)	χ^2 (2) —
Total Sample	2750 (100)	96 (3.5)	565 (20.5)	2089 (75.9)	—
HIV-Positive (any race/ethnicity)	497 (18.1)	93 (96.9) ^a	240 (42.5) ^b	164 (7.9) ^c	777.32 ^{**}
Young (18–29)	95 (3.5)	3 (3.1) ^{ab}	54 (9.6) ^a	38 (1.8) ^b	78.88 ^{**}
Substance user	270 (10.0)	53 (55.2) ^a	136 (26.3) ^b	81 (3.9) ^c	457.79 ^{**}
Stimulant user [†]	193 (7.1)	44 (45.8) ^a	92 (17.8) ^b	57 (2.7) ^c	366.29 ^{**}
Not on HIV-Meds	95 (3.5)	13 (13.5) ^a	44 (7.8) ^a	38 (1.8) ^b	77.84 ^{**}
HIV-Positive (White)	239 (8.7)	22 (22.9) ^a	157 (27.8) ^a	60 (2.9) ^b	373.26 ^{**}
Young (18–29)	44 (1.6)	1 (1.0) ^{ab}	34 (6.0) ^a	9 (0.4) ^b	88.36 ^{**}
Substance user	131 (4.9)	11 (11.5) ^a	91 (17.6) ^a	29 (1.4) ^b	254.45 ^{**}
Stimulant user [†]	91 (3.4)	9 (9.4) ^a	60 (11.6) ^a	22 (1.1) ^b	152.75 ^{**}
Not on HIV Meds	40 (1.5)	2 (2.1) ^{ab}	29 (5.1) ^a	9 (0.4) ^b	68.87 ^{**}
HIV Positive (Racial/Ethnic Minority)	206 (7.5)	60 (62.5) ^a	64 (11.3) ^b	82 (3.9) ^c	469.53 ^{**}
Young (18–29)	40 (1.5)	2 (2.1) ^{ab}	16 (2.8) ^a	22 (1.1) ^b	10.09 [*]
Substance user	114 (4.2)	37 (38.5) ^a	37 (7.2) ^b	40 (1.9) ^c	318.19 ^{**}
Stimulant user [†]	84 (3.1)	30 (31.3) ^a	27 (5.2) ^b	27 (1.3) ^c	282.81 ^{**}
Not on HIV Meds	40 (1.5)	10 (10.4) ^a	10 (1.8) ^b	20 (1.0) ^b	57.79 ^{**}

Notes: ASOs: AIDS Service Organizations. Online: online recruitment venues. Within rows, different superscripts differ at $p < .017$ per Fisher's Exact tests. Additionally, the proportions represented by the superscripts are always $a > b > c$.

[†] Stimulant use is defined as having used either cocaine or methamphetamine in the past 90 days.

* $p = .006$.

** $p = .001$.