

**Examining Racial and Ethnic Minority Differences among YMSM during
Recruitment for an Online HIV Prevention Intervention Study**

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ABSTRACT

HIV disproportionately affects racial and ethnic minority young men who have sex with men (YMSM). HIV prevention research does not include these YMSM commensurate to their HIV burden. We examined racial and ethnic differences during a unique three-step recruitment process for an online, YMSM HIV prevention intervention study ($N=660$). Step one was completed in-person; steps two and three online. Fewer Black and Latino YMSM completed step two – initiating online participation – than White YMSM. Internet use frequency accounted for the Latino vs. White difference in initiating online participation, but not the Black vs. White difference. Future online HIV prevention interventions recruiting diverse YMSM should focus on initiating online engagement among Black participants.

KEY WORDS: YMSM, HIV prevention, online intervention, research engagement, Keep it Up!

RESUMEN

El VIH afecta desproporcionado a los hombres jóvenes de la minoría racial y étnica que tienen sexo con los hombres (YMSM). La investigación de la prevención del VIH no incluye estos YMSM comensurados a su carga del VIH. Examinamos diferencias raciales y étnicas durante un proceso tres-pasos único para un en línea, estudio de la intervención de la prevención del VIH de YMSM (N=660) del reclutamiento. El paso uno era en persona terminada; pasos dos y tres en línea. Poco negro y Latino YMSM terminaron el paso dos - iniciando la participación en línea - que YMSM blanco. La frecuencia del uso del Internet explicó el Latino contra la diferencia blanca en la iniciación de la participación en línea, pero no el negro contra la diferencia blanca. Las intervenciones en línea futuras de la prevención del VIH que reclutan YMSM diverso deben centrarse en la iniciación del contrato en línea entre participantes negros.

PALABRAS CLAVES: YMSM, prevención del VIH, intervención en línea, contrato de la investigación

INTRODUCTION

HIV continues to affect men who have sex with men (MSM) disproportionately in the U.S. The Centers for Disease Control and Prevention (CDC) estimate that although MSM account for only 4% of the population, they represent 53% of new HIV infections annually, and 53% of total HIV infections in 2006 [1]. Several MSM subgroups are particularly vulnerable to HIV, including Black MSM and younger MSM (YMSM) [1, 2]. Further, of all HIV positive MSM subgroups, Black MSM and YMSM are most likely to be unaware of their HIV infection [1, 2]. The intersection of these at-risk groups, Black YMSM, is arguably most vulnerable to contracting and spreading HIV. In a 2008 CDC survey of MSM in 21 cities, Black YMSM (16.6%) were more than twice as likely to be HIV positive than Hispanic (6.9%) and White (5.8 – 6.6%). YMSM. Further, approximately 70% of these HIV positive Black YMSM were unaware of their HIV infection [2]. In sum, Black YMSM are a critical HIV prevention group.

Yet, Black men are underrepresented in HIV health research. For example, in a survey of 6,892 HIV positive individuals across the U.S., Black men were less likely than White men to participate in an HIV clinical research trial [3]. Eligible Black men who had not participated in any trials commonly reported not wanting to be a “guinea pig” for researchers. Other reported factors that have decreased potential Black participants’ engagement in medical research include believing minorities are most at-risk during this research, and knowledge of the Tuskegee Study [4]. The National Institutes of Health attempted to rectify the underrepresentation of racial and ethnic minorities in health research by mandating a plan for their inclusion in clinical research trials. Despite these efforts, racial and ethnic minority individuals continue to be included in HIV research

incommensurate to their HIV prevalence and national demographic breakdown [3]. This leads to an unfortunate paradox: Research that could benefit these at-risk communities often does not include these community members.

The Internet is a potential means to increase participation of racial and ethnic minority MSM in HIV research. Increasingly, the Internet is being harnessed as an efficient delivery system for HIV prevention interventions [5]. Further, the Internet is an effective tool to access and recruit MSM for research purposes [6]. However, online HIV prevention research may suffer from the same minority underrepresentation as other health research. A review of web-based HIV prevention studies reported that Black male participants are underrepresented (relative to population prevalence) in the majority of the study samples [7]. Currently, it is unclear whether this difference reflects beliefs about adverse effects of participation in health research, or differences in online computer access patterns. A 2010 survey indicated fewer Black individuals (71%) use the Internet than White (80%) and Hispanic (82%) individuals [8]. And, other research suggests racial and ethnic minority youth tend to use mobile phones instead of computers for obtaining health information [9].

It is also unclear how recruitment strategies for online HIV prevention programs relate to YMSM racial and ethnic minority participation. In reviewing considerations for design and evaluation of online HIV prevention research, Pequegnat and colleagues suggested face-to-face recruitment for an online study may help establish study credibility and therefore increase likelihood of participation [9]. The same article provided multiple examples of online HIV prevention studies successfully recruiting hard-to-reach populations, e.g. African American women and youth. However, no HIV

prevention studies were mentioned that successfully recruited a racially and ethnically diverse sample of YMSM. Such research is imperative given the concurrent spread of HIV among Black YMSM, boom of online HIV prevention research, and possible decreased likelihood of reaching Black YMSM using online interventions. In sum, researchers and interventionists need to know if this medium of communicating HIV prevention messages is suitable for one of the primary populations affected by HIV.

In this report, we examine the recruitment of a White, Black, and Latino YMSM sample into a pilot Randomized Controlled Trial (RCT) of Keep It Up!, an online HIV prevention intervention program designed specifically for racially and ethnically diverse YMSM. One unique aspect of this intervention is that participants were recruited in-person by clinic staff upon receiving an HIV negative test result, after which the intervention took place completely online, outside of the clinic. We examine the impact of race and ethnicity on willingness to participate at each of the three stages of recruitment – (1) primary screening administered in-person; (2) secondary screening administered online, when the study becomes Internet-based; and finally (3) enrollment in the online RCT.

We hypothesize that, during stage one, in-person recruitment by HIV test counselors who have built rapport with clients will decrease or remove barriers that related to racial and ethnic differences in recruitment success in past online research. Consequently we anticipate no racial and ethnic differences in research engagement at this stage. Conversely, we hypothesize Black YMSM in our sample will exhibit lower rates of research engagement than other YMSM at recruitment stage two, when the RCT becomes web-based. This is due to less computer-based Internet access among Black

individuals, on average [8]. We hypothesize no racial and ethnic differences in research engagement at stage three, after participants make the online transition, and after those with less Internet access already have dropped from the recruitment process.

METHODS

Participants

Participants were individuals receiving an HIV test in Chicago. Inclusion criteria for participation in the final intervention included: biological male, aged 18-24, just tested HIV negative, had unprotected anal intercourse (UAI) with a male in the last three months, and identified as gay or bisexual.

Brief Description of Intervention

Keep It Up! was a pilot RCT examining the efficacy of a web-based HIV prevention program in reducing HIV risk behavior, relative to an HIV/AIDS information-only control group. The RCT entailed a baseline assessment and two follow-up assessments administered six and 12 weeks post-intervention. The intervention program consisted of seven modules, spread across three sessions completed within approximately one month, plus one booster session six weeks later. Intervention modules were designed to be engaging and interactive. Their purpose was to integrate principles of health behavior change into context-based lessons focusing on bars/clubs, Internet-dating, and other topics relevant to YMSM sexual behavior. This study was approved by all involved Institutional Review Boards.

Overview of Recruitment Procedure

In an effort to increase our success with accessing and recruiting a racially and ethnically diverse sample, initial recruitment—and thus the first point of contact with

potential participants—was done in-person rather than online. Data suggest most urban, high risk YMSM have received HIV testing (78% ever-tested; 29% in prior three months) [10]. Our study sample was recruited by HIV testing and counseling staff from three LGBT community centers. Recruitment comprised three stages.

Each clinic's staff was trained to follow our recruitment protocol, and from May 2009 to May 2010 they administered a brief paper and pencil screener to individuals receiving HIV testing (Stage 1). Specifically, at the end of an HIV negative testing and counseling session, testing counselors were instructed to inform the individual that researchers were currently recruiting participants for a research study, and to ask the youth to complete a brief screening form related to the study. Individuals were asked to complete the form regardless of interest in study participation, because another goal of the screener was to test if demographic factors (age, sex, and MSM) were related to willingness to participate in the trial. Comparisons with clinic records indicated nearly universal compliance with the clinic screening protocol.

Included on this screener was a brief assessment of Internet usage. Participants were asked how frequently they had accessed the Internet in the past six months using a 6-point scale with 1=Never to 6=At least once a day. A brief consent statement was also included on the screener. Individuals who indicated they were willing to participate in a research study on this screener were asked to provide their name, phone number, and email address to learn more about research participation.

The recruitment coordinator reviewed all completed forms. Within 3-5 business days, individuals that were both willing to participate in research and qualified to participate in this study (based on responses to demographic items) were sent an email

invitation to access the study website and complete a brief (10-15 minute) online eligibility screener (Stage 2). This screener contained a consent statement, demographic items, and behavioral questions, e.g. any UAI in the past six months, used to determine final eligibility criteria. Individuals who met inclusion criteria were sent an email containing a link to the study website, a request to log on, and instructions to enroll. After logging on, individuals completed an online informed consent and then the baseline assessment (Stage 3).

We did not invite participation from individuals who simultaneously reported same-sex sexual behavior and heterosexual sexual orientation ($N=3$, .005% of all individuals that tested HIV negative during recruitment), because the content of the intervention program was tailored specifically for young men who identified as gay or bisexual.

Analyses

We used descriptive statistics to report frequencies, means (M), and standard deviations (SD) for Internet use rates, and completion rates at each stage, by race and ethnicity. Then we used Analysis of Variance (ANOVA) to investigate differences in age and frequency of Internet use by race and ethnicity. For each ANOVA, we used follow-up *t*-tests to make pairwise comparisons across racial and ethnic groups. Next, we used a chi square test to determine if equal proportions of White, Black, and Latino youth were willing to participate in research on the initial clinic screener. Finally, we used logistic regressions to test racial and ethnic differences in completion rates at each recruitment stage. For significant logistic regression results, we report odds ratios (OR) and confidence intervals (CI) for stage completion, using White YMSM as the referent group.

We interpret p values $\leq .05$ as statistically significant and those ranging from .051—.10 as marginally significant. SPSS 16.0 was used to conduct statistical analyses.

RESULTS

Participants

A total of 735 YMSM completed the clinic screener. Seventy-five participants who did not report White, Black, or Latino race or ethnicity (10.2% total; 35 Asian American; 3 Native American; 37 Other-race) were excluded from these analyses because of inadequate cell sizes at later stages of analyses. The remaining 660 YMSM served as our analytic sample. Of these, 340 (52%) identified as White, 166 (25%) as Black, and 154 (23%) as Latino. On average, participants' age (overall $M = 21.48$, $SD = 1.74$) differed significantly by race and ethnicity, $F(2, 655) = 7.08$, $p = .001$. Follow-up t -tests revealed that on average White participants were significantly older ($M = 21.72$, $SD = 1.65$) than both Black ($M = 21.19$, $SD = 1.83$) and Latino ($M = 21.26$, $SD = 1.76$) participants.

Internet use

Frequency of Internet use differed significantly across racial and ethnic groups, $F(2, 655) = 25.84$, $p < .001$. White participants reported more frequent Internet use (M response on the 6-point scale = 5.69, $SD = .88$) than participants who were Black ($M = 4.98$, $SD = 1.44$; $t(655) = 6.51$, $p < .001$) and Latino ($M = 5.13$, $SD = 1.36$; $t(655) = 4.97$, $p < .001$).

Recruitment

Table 1 reports participation frequencies and comparisons by race from each recruitment stage.

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For Stage 1, we compared the proportion of potential participants interested in learning more about study participation, across racial and ethnic groups. On average, more than half of the individuals who completed the clinic screener (56%; $N=372$) were willing to participate in research, and this rate was not significantly different across racial and ethnic groups – 56% ($N=190$) for White participants; 58% ($N=97$) for Black participants; and 55% ($N=85$) for Latino participants, $\chi^2(2, N = 660) = 0.41, ns$.

At Stage 2, more than half (62%; $N=220$) of individuals who were both eligible and willing to participate completed the online screener. The response rate was highest among White participants (71%; $N=127$) and lowest among Black participants (45%; $N=43$), with Latino participants falling in-between (60%; $N=50$). As this pattern suggests, successful completion of this stage significantly differed by racial and ethnic group, $\chi^2(2, N = 357) = 16.89, p < .001$. Compared to White participants, Black participants were 66% less likely to complete the online screener, $p < .001$, OR = .34, 95% CI = .20, .57, and Latino participants were 38% less likely to complete the online screener, although this effect was only marginally significant, $p = .09$, OR = .62, 95% CI = .36, 1.07. Comparing minority participants, Black participants were 45% less likely to complete the online screener than Latino participants, $p < .05$, OR = .55, 95% CI = .30, .99.

To explore the possibility that frequency of Internet use may account for the effect of race and ethnicity on online screener completion, we repeated the Stage 2 analysis including our measure of Internet use frequency as a covariate in the model. The effect for Latino participants became non-significant, $p = .22$, OR = .70, 95% CI = .40, 1.23, whereas the effect for Black participants remained virtually unchanged, $p < .001$,

OR = .39, 95% CI = .23, .67. That is, Internet use frequency explained the Latino vs. White difference in online screener completion rates, but not the Black vs. White difference.

At Stage 3, on average, just under half (48%; $N=106$) of those who completed the online screener met the final eligibility criteria for the study and were invited to enroll. Among those invited, the rate of enrollment was very high (87%; $N=92$). The rate was highest among White participants (90%; $N=52$), lowest among Black participants (79%; $N=15$), and in-between for Latino participants (86%; $N=25$). However, these differences across race and ethnicity were not significant, $\chi^2(2, N = 106) = 1.39, ns$. In other words, in the final stage of recruitment, race and ethnicity did not influence who eventually enrolled in the study.

DISCUSSION

The goal of this paper was to examine the impact of race and ethnicity on the recruitment of YMSM into a web-based RCT of an online HIV prevention intervention. We asked specifically if and when racial and ethnic group differences emerged during a three-stage recruitment process. Analyses revealed no racial and ethnic group differences in willingness to participate during a face-to-face screener (Stage 1) or online RCT enrollment (Stage 3). However, racial and ethnic group differences did emerge in completion of the online screener (Stage 2), the point at which the study became web-based. These results suggest racial and ethnic enrollment differences into online YMSM studies may be explained by differences in Internet access instead of traditionally suggested causes (e.g., the belief that racial minorities are most at-risk in health research).

Indeed, consistent with extant data [8], in this study racial and ethnic minority participants reported less frequent Internet use than White participants. However, at least for Black participants, self-reported Internet use frequency did *not* account for the impact of race on completion of the online screener. One possible explanation for this may be that meaningful differences reside in *quality* of Internet access, not just quantity. For instance, although recent reports have noted a closing of the digital divide—wherein racial and ethnic minorities are accessing the Internet at higher rates—data also indicate this may be due, in part, to African American and Latino individuals being significantly more likely to use their mobile phones to access the Internet [9].

Mobile phone-based Internet has not yet been well studied in terms of its capacity for delivering complex, interactive interventions. Unfortunately we did not assess whether participants accessed the Internet using a computer, mobile device, or both. Future studies using similar recruitment and intervention methods with racially and ethnically diverse populations should assess this. Further, intervention designers should explore tailoring modules to be accessible on mobile devices, e.g. by creating a downloadable *app* for their intervention. This may increase participation by racial and ethnic minorities, who report using their mobile devices for complex tasks like recording and watching videos, more than White individuals [11].

Nonetheless, many individuals continue to use a computer to access the Internet. For them, the context of computer use, particularly the privacy and efficiency of the computer, influences quality of Internet access. Individuals lacking privacy may feel uncomfortable using the Internet for sensitive topics, such as seeking HIV related information. Indeed, LGBT youth interviewed about their Internet use cited concerns

about lack of privacy as a barrier preventing them from searching for sexual health information online [12]. Thus, it seems likely that having private access to a personal computer would facilitate individuals accessing the Internet and participate in a web-based research study. Thus, the racial and ethnic differences found at Stage 2, when the study moved online, may relate to differences in *quality* of computer Internet access, not solely having Internet access.

In this report we have focused on the impact of race and ethnicity throughout a recruitment process that moved from in-person to online. However, we also encourage consideration of the outcome of this process – the proportion of racial and ethnic minorities enrolled. Our sample was diverse, and relative to comparable web-based studies for MSM [7], we had greater success recruiting Black MSM. Thus, although our study lost Black participants at higher rates when it went online, it was still successful in terms of final sample composition. As such, our recruitment approach may be a viable model to overcome past recruitment difficulties in online, HIV research studies involving racial and ethnic minorities.

Our in-person approach to recruitment during Stage 1 may explain our diverse final sample. We hoped the personal connection formed between a test counselor and his/her testing client during a session would break down previously perceived barriers to research engagement, especially for racial and ethnic minorities. Although we did not collect data to test this specific hypothesis, we speculate that this counselor-client rapport made a significant contribution to our recruitment success. Given that safe-sex interventions are increasingly being delivered online [5], it is important to consider that

offline recruitment approaches may be valuable and can be used in conjunction with cost-effective, online-intervention delivery.

This study has noteworthy strengths and limitations. Its primary strength is being the first to evaluate the dynamic offline-then-online recruitment approach for a YMSM-tailored online HIV prevention intervention. It is important to evaluate the efficacy of such approaches, promptly, given that YMSM remain particularly vulnerable to acquiring HIV [1]. Further, our success indicates at least some hard-to-reach populations are in fact accessible, given specific recruitment approaches. One study limitation relates to generalizability of our findings. Because our in-person recruitment approach occurred at LGBT community centers, YMSM who did not patronize these centers were not offered study participation. Therefore, our results generalize only to a subset of YMSM who are already “connected” to the LGBT community insofar as they utilize programs or services at such centers. Also, we recognize offline recruitment of participants for HIV prevention studies can be significantly slower than online recruitment [9]. Therefore our recommended recruitment approach may take longer to yield a full sample than approaches using online recruitment solely. Arguably, however, initial face-to-face recruitment approaches may preempt high attrition rates characteristic of HIV prevention studies using only online recruitment approaches [9].

In conclusion, research suggests that racial and ethnic minority individuals participate in HIV and other health research less than White individuals [3, 7]. We explored whether this finding was replicated in a pilot RCT of an online HIV prevention intervention to decrease HIV risk behaviors among diverse YMSM. Racial and ethnic differences emerged in only one of three recruitment steps – fewer Black and Latino

participants transitioned to Internet use than White participants. For Latino YMSM this difference was explained by frequency of Internet use, but this was not the case for Black YMSM. We suggest that for racially and ethnically diverse YMSM, quality, not quantity, of Internet access may be a barrier to using the Internet to seek HIV information and engage in HIV research. Further, quality of interactions during recruitment may remove perceived barriers to engagement in online HIV research in this population. More research is needed to replicate and extend these findings within communities that are simultaneously at high risk for HIV and unlikely to participate in online HIV research.

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obtaining sexual health information among LGBT youth. Health Educ Behav. In Press.

Table 1. Participation frequencies and comparisons by race,
across recruitment stages

	White	Latino	Black
Stage 1: In-Person Screener			
% Completed	55.88	55.19	58.43
<i>N</i>	190	85	97
OR (95% CI) ^a	REF	.97 (.66, 1.4)	1.11 (.76, 1.6)
Stage 2: Online Screener			
% Completed	70.95	60.24	45.26
<i>N</i>	127	50	43
OR (95% CI)	REF	.62 (.36, 1.1)*	.34 (.20, .57)**
Stage 3: Enrolled			
% Completed	89.66	86.11	78.95
<i>N</i>	52	25	15
OR (95% CI)	REF	.72 (.18, 2.79)	.43 (.11, 1.74)

^aOR = odds ratio; CI = confidence interval

* $p < .10$; ** $p < .001$