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Recruiting hard-to-reach drug-using men who have sex with men into an intervention study: Lessons learned and implications for applied research

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Abstract

Drug (ab)use researchers and service providers across the globe have been challenged with locating target populations and subsequently enrolling participants into their programs. This study presents data from nearly three years (2004–2006) of recruiting “high risk” drug-using gay and bisexual men into a New York City-based clinical research trial. During the enrollment period, two recruitment/marketing strategies were utilized: (1) marketing of the intervention research study itself to men who were in the early stages of identifying problems with their drug use and risky sexual behavior and (2) two-stage recruitment via a lower-threshold/commitment (i.e., brief survey) and subsequent offering/enrollment into the full trial upon completion of the initial visit (i.e., a foot-in-the-door). The second approach was substantially more effective in enrolling participants into the full trial (6.3 participants/month versus 2.5 participants/month). Furthermore, recruitment costs for the foot-in-the-door approach were substantially reduced (\$356.57/participant versus \$497.03/participant). Compared to the marketing of interventions themselves to target populations, a two-stage recruitment strategy incorporating lower-threshold interactions may be a more effective approach to recruit for interventions.

Keywords

recruitment; club drugs; target based sampling; gay and bisexual men; men who have sex with men (MSM)

1. INTRODUCTION

As HIV/AIDS is now in its third decade, the role of risky sexual behavior in HIV transmission among men who have sex with men (MSM) is well understood. Nevertheless, MSM make up 60% of all men living with HIV and accounted for 53% of all *new* HIV/AIDS cases in 2005

in the United States (CDC, 2007). Although a variety of social and psychological variables are intertwined with this process, the role of club drugs such as ketamine, GHB, MDMA/ecstasy, cocaine and methamphetamine have been noted for their relationship to HIV transmission risks among MSM (Gorman & Carroll, 2000; Halkitis, Parsons, & Stirratt, 2001; McNall & Remafedi, 1999; Nanin & Parsons, 2006; Shoptaw, Reback, & Freese, 2002). To complicate matters further, researchers have indicated that many gay and bisexual men who may have problems related to drug or alcohol use are disinclined to seek formal treatment (Stall, Paul, Barrett, Crosby, & Bein, 1999). Thus, although effective educational and prevention programs that address substance use and sexual behavior have been (or currently are being) developed, researchers and community/health service providers have been faced with the added challenge of locating and subsequently enrolling target populations into their educational or intervention programs.

Researchers and community/health service providers have undertaken a variety of marketing and recruitment strategies to reach this population. In efforts to increase the generalizability of their samples, researchers have adopted methodologically rigorous recruitment strategies such as random digit dialing (Stall, Paul, Barrett, Crosby, & Bein, 1999) and time-space sampling (Diaz, Ayala, & Bein, 2004; MacKellar et al., 2007). Although these strategies can better preserve the generalizability of samples and gain access to populations that might not have otherwise been captured via convenience-based sampling (e.g., MSM who do not attend gay bars), employment of these recruitment methods has been noted for dramatically increased project costs and decreased access to highly specified/hidden populations, such as gay and bisexual men who may be using drugs and/or engaging in unsafe sex (Robinson, Risser, McGoy, Becker, Rehman, Jefferson, Griffin, Wolvertson, & Tortu, 2006). In lieu of this, other researchers have adopted recruitment strategies that meld methodological rigor of time-space sampling with convenience-based sampling approaches, including targeted sampling (Robinson et al., 2006; Watters & Biernacki, 1989).

Generally speaking, targeted sampling is designed to “Obtain systematic information when true random sampling is not feasible and when convenience sampling is not rigorous enough to meet the assumptions of the research design” (Watters & Biernacki, 1989, p 420). Specifically,

Although it incorporates some aspects of other well-established sampling strategies, it is sufficiently different to be treated as a separate research method. Further, targeted sampling provides a cohesive set of research methods that can help researchers study health or social problems that exist among populations that are difficult to reach because of their attributed social stigma, legal status, and consequent lack of visibility. (Watters & Biernacki, 1989, p. 416).

Target sampling involves multiple levels of recruitment and sampling methods, and while the samples obtained from target sampling are not random samples, they are not convenience samples either. The steps laid out by Watters and Biernacki (1989) include initial mapping of communities, ethnographic mapping, developing an initial target plan for each district/community, revising the target plans, and using preliminary data to shape research questions and instruments.

In addition to choosing the most appropriate sampling strategy, researchers and health/community service providers are faced with the challenge of identifying the most effective *marketing* strategy to ensure their program has appeal to its target community. One such strategy has included the social marketing of campaigns (Fisher, Ryan, Esacove, Bishofsky, Wallis, & Roffman, 1996) which can include (1) advertising in local gay publications, (2) building a referral network of professional health care providers in HIV and sexually transmitted disease (STD) sites as well as AIDS service agencies, (3) displaying posters in gay

bars and other gay-oriented venues, and (4) generating feature stories in local daily newspapers. These marketing methods can all be adopted using Watters and Biernacki's (1989) target sampling approach.

Kanouse and colleagues (2005) have indicated that those seeking to market an intervention must approach their populations with caution, as interventions typically seek to modify and address socially taboo behaviors (e.g., drug use, unsafe sex). In their study, Kanouse and colleagues tested the effectiveness of two different recruitment approaches. The first strategy was advertising of the intervention itself in community-based publications, while the second consisted of community outreach intended to recruit men into focus-groups that discussed party drugs, party burnout, and sexual behavior; in the second strategy the intervention was described and enrollment offered after completion of the focus group (i.e., a two-stage, foot-in-the-door approach; Cialdini, & Schroeder, 1976). Kanouse and colleagues (2005) noted the effectiveness of this two-stage approach to reach racially and ethnically diverse men who reported high levels of drug use and sexual activity. Unfortunately, similar evaluations of different recruitment/marketing strategies effectiveness to engage hard-to-reach populations have not been widely disseminated throughout academic literature.

Building from Fisher and colleagues' (1996) research around social marketing, the present study sought to evaluate the effectiveness of two different recruitment strategies seeking to enroll drug-using high-risk MSM into an intervention – both strategies based in targeted sampling frameworks (Watters & Biernacki, 1989). Similar to Kanouse and colleagues (2005), during the first phase of recruitment we attempted to recruit gay and bisexual men directly into a longitudinal intervention around substance use and sexual behavior. However, in adhering to the broader approach of targeted sampling, this recruitment was not limited to print advertising. Meanwhile, during the second phase of recruitment, and again similarly to Kanouse and colleagues' study, a lower-threshold brief survey was marketed to our target population, and participants were subsequently offered an opportunity to participate in the longitudinal intervention (i.e., a foot-in-the-door technique; Cialdini, & Schroeder, 1976). For this analysis, we have evaluated the fiscal costs and the return-rate of participants per month enrolled in the actual longitudinal intervention. We also describe the process of evaluating any necessary changes to be made from the first phase of recruitment to the second (Fisher et al., 1996).

2. METHODS

2.1 Overview of study design

Broadly, the "Club Drugs and Unsafe Sex Project" (NIDA #R01 DA015971) sought to develop and test a brief, motivationally-based intervention to reduce drug use and unsafe sexual behavior among men who have sex with men, comparing four 1-hour sessions of motivation enhancement therapy (MET; Miller et al., 1994) to four 1-hour sessions of educational videos. The primary criteria for inclusion were self-report of at least five days of use of one or more club drugs (ketamine, MDMA/ecstasy, GHB, cocaine, and/or methamphetamine) within the last 90 days, and current risk for transmission of or exposure to HIV – initially defined as any unprotected same-sex sexual activity with a non-primary partner within the past 90 days. Additional study inclusion criteria included: geographic stability (i.e., not having moved more than once in the last 6 months), not meeting dependence criteria for alcohol (AUDIT; World Health Organization, 1992), and being at least 18 years of age. Exclusion criteria included: evidence of severe dependence on alcohol or significant risk for physical withdrawal (*DSM-IV*; American Psychiatric Association, 1994); severe psychiatric symptoms (e.g., suicidal or homicidal ideation, psychosis; Brief Symptom Inventory; Derogatis, 1975; Derogatis & Melisaratos, 1983); gross cognitive impairment (Mini-Mental Status Exam; Folstein, Folstein, & McHugh, 1975); or recent diagnosis with HIV (i.e., < 6 months).

2.2 Overall recruitment approach

Throughout both phases of recruitment a multi-method target based sampling approach (Watters & Biernacki, 1989) was utilized to recruit participants into the study. These recruitment strategies were implemented in order to locate a diverse range of MSM who were both active club drug users and at increased risk for HIV transmission. Both “active” and “passive” means of recruitment were utilized.

2.2.1 Active recruitment—During active recruitment in a variety of gay and bisexual men’s venues (e.g., community events, bookstores, bars/clubs, bathhouses, and throughout MSM-concentrated neighborhoods throughout New York City), project staff approached potential participants to provide them with a brief verbal description of the study. Recruitment staff handed men a card that contained more information about the study and encouraged them to call for more information. These recruitment venues were identified via ongoing ethnographic community-based fieldwork, informal interviews with key informants, study participants, and community-based publications.

If circumstances permitted, men were also offered the opportunity to screen in the field. Field screening occurred primarily in indoor settings such as at community events and nightclubs/bars, and was accomplished by using laptop computers that were equipped with Automated Computer Assisted Survey Instrument (ACASI) software. ACASI uses a computer and voice recordings so that the participant hears (through headphones) and sees (on the screen) each question and response list. Participants enter their responses directly into the computer using a keyboard or mouse. ACASI has been found to be an effective interview method for people of diverse educational backgrounds and eliminates the effects that reading ability has on internal validity (Gribble, Miller, Rogers, & Turner, 1999; Turner, Ku, Rogers, Lindberg, & Pleck, 1998). Studies have shown that ACASI increases the proportion of individuals admitting sexual behaviors and illicit drug use (Tourangeau & Smith, 1996; Turner, Ku, Rogers, Lindberg, & Pleck, 1998). The field screening ACASI program calculated eligibility criteria for the study instantaneously, eliminating the need for participants to call and screen via the research center.

2.2.2 Passive recruitment—Through passive recruitment, trained recruitment staff placed study materials (i.e., business sized “palm cards” and tear-off flyers) in key locales throughout New York City, such as bookstores, bars/clubs, Laundromats, and within densely populated gay neighborhoods that had been previously identified via initial and ethnographic mapping (Watters & Biernacki, 1989). In addition, the research team also capitalized upon our previously developed referral network of professional health care providers catering to the MSM community, AIDS service agencies, and MSM-focused community groups. Passive recruitment also included advertising in community-based publications, friend referrals, and postings within MSM Internet chat-rooms. Potential participants recruited through either strategy were provided with a telephone number to call to be screened for eligibility.

2.3 Recruitment procedures and modifications

Recruitment and enrollment for the project spanned approximately 33 months, from March 23rd, 2004 to December 10th, 2006. Throughout this time, both the venues/locations targeted for recruitment and the recruitment/project staff working on the study remained consistent. However, recruitment materials and enrollment procedures were modified substantially approximately midway through the enrollment period. The Institutional Review Boards of the authors approved all procedures and recruitment materials.

2.3.1 Phase I—From March 23rd, 2004 until June 5th, 2005 (approximately 13.5 months), project recruitment materials were worded to appeal to men who may have “recognized” they may be developing (or currently have) a problem related to their drug use or unsafe sex. After

conducting focus groups with men in our target group, the research team developed four “tag lines” to be used on recruitment materials (see Figure 1). These read, “So, I fell out last weekend,” “I crossed my own line,” “I know my drugs, just not my options,” and “I am not always safe when I party.” The photographic images that accompanied these taglines depicted men in situations that were suggestive of either sex or drug use, or both, and were found acceptable by our community advisory board. The back of these palm business-sized cards provided more information about the project. During this first phase, the name of the study was Project PnP (Project Party-n-Play) which, at the time, was a colloquial term used by some MSM to globally describe club drug-enhanced sexual behavior (Nanin & Parsons, 2006).

2.3.2 Evaluation of Phase I recruitment and enrollment procedures—In order to better understand slower-than-anticipated enrollment rates into the clinical trial, the investigators conducted an informal qualitative evaluation of the recruitment materials and enrollment procedures during the spring of 2005. This included brief, informal, qualitative surveys of MSM in a variety of community venues soliciting their reactions to the recruitment materials being used, as well as their general perceptions of the study based on these materials. In hopes of improving enrollment rates, this procedure was used to inform modifications to both materials and enrollment procedures.

This informal evaluation indicated that many MSM in our target population found: (1) the recruitment materials unappealing because of their apparent depiction of excessive drug use; (2) the study name, Project PnP, itself unappealing because of its association with the practice of using drugs (primarily crystal methamphetamine) in conjunction with sexual activity. This was a practice that, partially as a result of emerging anti-methamphetamine public health campaigns throughout New York City (Nanin et al., 2006), had become increasingly stigmatized within MSM communities during the initial phase of the study (Grov, Parsons, & Bimbi, 2008; Parsons, Kelly, & Weiser, 2007); (3) the materials and study procedures to be targeted at MSM who were experiencing *serious* problems with drug use, a perception many in our target population were disinclined to acknowledge. In addition to these conclusions, the investigators further suspected that the explicit reference to unsafe sexual practices was also unappealing because of the continued stigma attached to this activity in the MSM community (Grov, 2006; Nanin & Parsons, 2006).

2.3.3 Phase II—From June 6th, 2005 through December 10th, 2006 (approximately 18.5 months), recruitment materials were modified as a result of our qualitative evaluation. Rather than relying upon men’s emerging identity/contemplation around potential substance-related problem development, these Phase II materials read, “Ever used ecstasy? And are you a gay/bi man? Tell us about it. 1 hour research study – no judgments – \$30” (see Figure 2). References to “PnP”, unsafe sex, or problems/concerns related to drug use were eliminated. Photographs were likewise modified to eliminate the depiction of drug use or sexual situations, instead relying on images having a generally neutral or positive valence. Moreover, participants were not enrolled directly into the clinical trial, but into a one-time survey study of club drug use and associated factors and, at the close of this initial brief interview, offered the opportunity to enroll in the clinical trial (i.e., a foot-in-the-door technique; Cialdini, & Schroeder, 1976). This theory-driven approach had demonstrated effective in enrolling similar types of populations into behavioral interventions (Kanouse et al., 2005). The research team expected that the de-emphasis of substance-related concerns/problems and of unsafe sex, the offer of a lower-threshold study as the first point of contact with the project, the omission of references to “PnP”, and the explicit focus on relatively less stigmatized substances (i.e., MDMA/ecstasy), would reduce some of the apparent obstacles to enrollment that our initial materials posed. Ecstasy was chosen because our previous research (Grov, Parsons, & Bimbi, 2006; Nanin & Parsons, 2006; Parsons, Halkitis, & Bimbi, 2006) and qualitative evaluations indicated that this substance was the most commonly used club drug among MSM in New York City, that its use

was not perceived as dangerous/risky, and thus ecstasy use would not be indicative of problematic drug use.

During the initial phone inquiry, potential participants were screened to ensure they more closely met study criteria for the full intervention trial (i.e., ≥ 5 days of recent club drug use, and sexual contact with at least one man who was not a main partner). In order to participate in this brief 1-hour assessment, men were *not* screened for unsafe sexual behavior, as that would be assessed using *ACASI* during this initial visit. As mentioned, men were compensated \$30 for their participation in this survey. Only after they completed this survey, and a research assistant reconfirmed a participant was eligible for the full clinical trial, were participants invited to enroll in the full trial. During this second phase, the only way a participant could have enrolled in the full clinical trial, or even learned of the full clinical trial, was if he had first completed the brief 1-hour survey.

The 1-hour survey that men completed during Phase II served multiple purposes. Primarily, it was used as a less invasive screening tool for eligibility criteria for the full intervention trial. At the close of the brief 1-hour survey, those men who were eligible for the full clinical trial were offered the opportunity to participate in an *additional* study. This brief assessment also served to expose men to our research center, such that they may have been more likely accept the offer for the additional longitudinal research trial after having briefly interacted with project staff and familiarized themselves with the research setting (Kanouse et al., 2005). Moreover, it gave us an opportunity to gather more data on the types of men who responded to this recruitment technique, and further explore the relationship between drug use and sexual behavior within this population, as well as psychological factors relating to problem recognition, readiness to change, and treatment seeking.

2.4 Cost benefit analysis

Phases I and II were evaluated, compared, and contrasted on three criteria: In terms of (1) participant enrollment into the full trial, both in gross magnitude and standardized (i.e., participants/month), (2) standardized recruitment costs (i.e., total recruitment costs expended per participant enrolled), and (3) the “types” of participant enrolled in each phase (i.e., compared by racial/ethnic distribution, age, reported risky sexual behavior, and recent substance use). Detailed methods of evaluating each criterion level are further described in the next section.

3. RESULTS

3.1 Enrollment

During Phase I of recruitment and enrollment, the research team screened 782 men for the clinical trial – both on the phone ($n = 350$) and in person ($n = 426$) – using a notebook computer equipped with an *ACASI* programmed screener. The data on screening location were missing for six participants. Of these 782 men, 7.2% ($n = 56$) met the project’s criteria *and* were willing to participate in the study ($n = 25$, 5.9% from live screening and $n = 31$, 8.9% from phone screening). Among those screened in the field, most of those deemed ineligible had reported insufficient (or no) recent drug use ($n = 281$, 66.0%) and/or reported no recent unsafe sex ($n = 198$, 46.5%). These men were not subsequently offered the opportunity to participate in the full study. Among those having telephoned our research center to screen for the study, the majority ($n = 209$, 59.7%) indicated they were not interested in participating in the study even after having otherwise met eligibility criteria. Of the 56 men having met criteria, 60.7% ($n = 34$) were ultimately enrolled in the clinical trial; these men represented 4.3% of all those initially screened for the trial. This amounted to an overall enrollment rate of 2.5 enrolled participants per month (see Table 1).

During Phase II, the research team initially screened, via telephone ($n = 936$) or in the field ($n = 534$), a total of 1,567 MSM to subsequently participate in the 1-hour survey. The data on screening location were missing for thirteen men. Of those completing the brief screening interview, 39.5% ($n = 619$) were eligible to participate in the 1-hour study conducted at our research center. Similar to the first phase, among those screened in the field, the majority of those deemed ineligible had reported insufficient (or no) recent drug use ($n = 400$, 74.9%). This was also the case among 39.9% ($n = 373$) of those phoning into our research center for screening. Unprotected sexual behavior was not an admission criterion to participate in the 1-hour study and thus was not assessed during this early-initial screening. Of these 619 eligible men, 73.4% ($n = 454$) successfully completed the 1-hour survey at our research center. Among the 454 participants from this survey, 56.6% ($n = 257$) were eligible for the clinical trial and subsequently invited to participate. Of these 257 men, 45.1% ($n = 116$) enrolled; this represented 7.6% of all those initially screened for the survey study and was a significant improvement from Phase I (Fisher's Exact $p < .001$). Further, this translated to an enrollment rate of 24.5 participants into the survey study per month, and 6.3 into the clinical trial per month.

3.2 Cost comparisons

3.2.1 Phase I—During the first phase of recruitment, the research team purchased and distributed 50,000 recruitment cards at a cost of \$1,431.00 for printing. During these 13.5 months, approximately 1,289 recruitment hours at \$12/hour were expended – totaling \$15,468 for recruitment personnel. Totaling these costs, this equated to approximately \$497.03 of recruitment monies per enrolled participant ($n = 34$) in the full clinical trial.

3.2.2 Phase II—During the second phase of recruitment, the research team purchased and distributed 50,000 recruitment cards at a cost of \$1,372 for printing (costs were reduced by \$59 during Phase II due to bulk-ordering). Over the course of 18.5 months, approximately 1,630 recruitment hours were expended for a total recruitment staff cost of \$19,560.

In order to accurately assess actual costs per enrolled participant in the full clinical trial, additional costs must also be considered for Phase II. For example, 454 participants received \$30 for participating in the brief survey at an additional cost of \$13,620 for participant payment. Further, during Phase II extra research assistant (RA) staff time (over and above recruitment time expended) was required to screen, schedule, obtain informed consent, and interview participants for the brief study. Although participants completed the brief 1-hour survey using ACASI at our research center, we have estimated that about one additional hour of RA staff time per participant was expended for the various activities of the 1-hour study. We estimated these additional RA staff costs to be \$6,810 (\$15/hour at 454 hours). Totaling these costs (\$41,362) and dividing among the 454 participants who participated in the brief study, the research team spent approximately \$91.11 per participant for the *brief* survey. Dividing these total costs among the 116 participants who ultimately enrolled in the full trial during Phase II, this amounts to approximately \$356.57 of recruitment costs per participant in the clinical trial.

3.3 Phase I versus Phase II participants

In terms of demographic and behavioral variables, the participants who ultimately enrolled in the full clinical trial during Phase I ($n = 34$) were fairly similar to those enrolled in the clinical trial during Phase II ($n = 116$). For example, the proportion of men of color to Caucasians was statistically similar. Further, men were similar in age, whether they had engaged in unprotected sex (both insertive and receptive), and in whether they had recently used ketamine, MDMA/ecstasy, and/or methamphetamine. Nevertheless, Phase II recruits were more likely to have recently used cocaine (80.5% v. 54.4%, $\chi^2 [1] = 9.11$, $p < .01$), and men recruited during Phase I were more likely to report recent GHB use (39.4% v. 17.7%, $\chi^2 [1] = 6.87$, $p < .01$).

4. DISCUSSION

Drug use and HIV/AIDS educational and prevention programs, initiatives, and research are costly endeavors. In an era in which funding for such types of research and programs is finite, it has become increasingly essential to identify and intervene with those considered “most at risk.” These higher-risk populations are also harder to reach, thus adding an additional layer to an already complex process. Our data indicate that marketing of interventions may not be the most effective means to attract and enroll some populations. Instead, other methods such as marketing of lower-threshold interactions (i.e., foot-in-the-door) may be a more effective strategy to identify and engage a target population (Kanouse et al., 2005). This study provides a more precise evaluation of some of the many intricacies behind the development and marketing of recruitment materials that both researchers and/or community service providers, who are seeking to develop educational and prevention interventions around drug use and sexual behavior, should be aware.

More money was expended during the second phase of recruitment than during the first. Nevertheless, the research team was more successful in enrolling participants, thus lowering the cost-per-participant to a more cost beneficial rate. In addition, the research team had the added benefit of a second, large dataset on men who were willing to complete the lower threshold research study. Further, the recruitment enrollment rate for the full trial nearly tripled during the second phase (from 2.5 per month to 6.3 per month). Finally, although recruitment materials and enrollment procedures were modified substantially, the “types” of participants ultimately enrolled into the full clinical trial were fairly comparable during both phases. In essence, although Phase II was targeted toward MDMA/ecstasy users, we were still able to capture, in the full clinical trial, a racially diverse range of substance users who were similar in age.

It is unsurprising that, during Phase II, many men were initially (i.e., in the field or on the phone) screened ineligible for the brief 1-hour study due to insufficient drug use. Recruitment materials utilized during Phase II targeted men who had *ever* used MDMA/ecstasy. Many of the participants who screened (whether on the phone or in the field) to get into the brief 1-hour study had tried the MDMA/ecstasy in the past, but had not used recently. Our use of the word “ever” on recruitment materials was intentional in an effort to broadly appeal to individuals having ever tried a drug; the assumption being that those who had *ever* tried a drug also includes those who had more recently used, i.e., the target group of interest. Thus, by using this approach, we were able to more specifically screen for recent substance users, and avoid potentially stigmatizing recruitment materials/language that targeted recent/current users of more socially-marginalized drugs.

The rate of positive screens was greater for those who screened via telephone, as compared to those who screened in person. This is to be expected given that those men, having received a card from a recruiter or picked one up from one of the many key locales cards were placed throughout the city, had enough interest in the study to take the initiative to telephone our research center and screen for the project; in essence, these men were self-selected for interest in the subject matter and hence for likely study eligible. In contrast, the “success rate” for finding eligible individuals was diminished when conducting field screening. This is also to be expected when casting a broad net by conducting “cold” screening interviews in the field, and should not be taken to suggest that field screening is somehow ineffective. In fact, field screening enhanced our ability to interact with a wide variety of individuals. Thus, it is possible that many of the eligible men who were captured in the field might not have otherwise learned of the research study, or had they seen study recruitment materials without the opportunity to screen immediately, taken the extra effort to telephone our research center for more information.

4.1 Considerations for future research

With the emerging portability of survey technology on laptop and handheld computer devices, researchers and health/community service providers have increased mobility in their data collection and participant/client assessment. Nevertheless, this increases the opportunity for inaccurate and/or underreported behaviors that are perceived as stigmatized (such as drug use and unsafe sex; Gribble, Miller, & Rogers, 1999) and breaches of confidentiality attributed from gathering data in public settings (Rasinski, Willis, & Baldwin, 1999). Researchers and health providers seeking to adopt such data collection methodologies should consider periodic evaluation of the effectiveness and ethics of such mobile technologies.

These data provide valuable evidence for researchers and health/community service providers of effective strategies for recruiting hard-to-reach populations into interventions. In so doing, these findings support previous researchers' work having indicated that a foot-in-the-door technique is both appropriate and effective for enrolling participants into longitudinal intervention clinical research trials (Kanouse et al., 2005). As these data cannot speak to all hard-to-reach populations, further evaluation of the effectiveness of recruitment strategies and marketing approaches is needed. For this analysis, we evaluated both recruitment approaches' effectiveness on three levels: (1) rate of participant enrollment in the full trial; (2) recruitment costs per participant in the full trial; and (3) assessing the "type" of participant enrolled during each phase. Those seeking to adapt recruitment approaches to fit their program's needs might consider such levels of evaluation; however, other levels not used in this analysis might also be appropriate. For example, researchers may also consider assessing if recruitment modifications impact the overall effectiveness of the intervention. Deciding which levels of analyses are necessary should ultimately be dictated by the unique needs of individual programs.

Although the present results argue in favor of the foot-in-the-door approach, this procedural modification was likely not responsible for *all* the observed improvements in recruitment. Other modifications to the recruitment materials (e.g., the elimination of references to "PnP" and unsafe sex) likely made substantial contributions to the overall success of the modified recruitment efforts, and the accumulation of these changes significantly improved the rate of successful enrollment in the randomized clinical trial. We consider it unlikely that all improvement was due entirely to changes in the content of passive recruitment materials, but more so to the use of the brief survey study as a means of lowering the threshold for engagement with the project. Nevertheless, it is worth noting other variables that could have improved enrollment. For example, as study enrollment expanded, word-of-mouth advertising and continued exposure to recruitment materials could have improved community-wide perceptions of the project's credibility. In addition, although the recruitment team already had considerable experience conducting direct outreach for a number of similar research trials prior to initiating recruitment for the present study, it is also possible that the recruitment team's abilities to recruit for this specific study improved with experience. However, the fairly sharp and dramatic increase in enrollment rates observed following the modification of procedures still argues for a strong role played by this factor.

For this project, a targeted sampling framework was adopted throughout both phases of recruitment (Watters & Biernacki, 1989). Much like other probability and non-probability sampling approaches, targeted sampling is not without bias. And, because we did not modify the *overarching* sampling framework used from one time to the other, this analysis cannot speak to the effectiveness of this overall approach to recruitment. Anecdotally, the flexible multi-method nature of targeted sampling is an ideal approach for recruiting hard-to-reach and hidden populations. Although other researchers have utilized other probability-based approaches such as time-space sampling (Diaz, Ayala, & Bein, 2004; MacKellar et al., 2007)

and random digit dialing (Stall et al., 1999), these approaches are equally not without limitation or criticism (Robinson et al., 2006).

In order to fully evaluate the effectiveness of different recruitment approaches, data collection over an extended period of time is necessary. In the case of this analysis, more than 33 months elapsed across the two phases. As identified, the timing of the first phase's launch closely coincided with a city-wide anti-crystal methamphetamine campaign (Nanin et al., 2006). The effects of this campaign were immediate and observed via the community feedback we obtained about our Phase I recruitment materials. It became evident that Party-n-Play (or PnP) was slowly being (re)defined from "drug-enhanced sex" to specifically "methamphetamine-enhanced sex." As a result of this information, the chosen study name (in addition to other study protocols) was modified. It is assumed that changing the study's name improved enrollment, but it is difficult to quantify the magnitude from that individual change. Although the longitudinal nature of our evaluation allowed us to monitor such changes in community perception and study material acceptability, it equally presented the added threat that historical events can often pose to internal validity (Babbie, 2007).

4.2 Conclusions

Future researchers and community/health providers seeking to market research studies and behavioral interventions to hard-to-reach populations should consider periodic evaluation of their recruitment materials. These analyses indicate that lower threshold commitments on behalf of potential participants/clients will require more recruitment hours expended and staff time spent working with initial participants/clients. Nevertheless, this lower-threshold approach might also dramatically increase a target population's acceptance of a study's/program's commitments while also subsequently increasing enrollment rates into programs. Although more fiscal capital was utilized for the second phase of recruitment in this analysis, there was a significant payoff in terms of participant enrollment rate and financial costs expended per participant.

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GLOSSARY

MSM	Men who have sex with men
Club Drugs	A group of substances that have been connected to club/dance scenes; ketamine, ecstasy/MDMA; GHB, cocaine, & methamphetamine
Foot-in-the-door	A recruitment approach by which participants are asked for a low level of time commitment, and then later offered additional opportunities to participate
Passive recruitment	The act of leaving recruitment materials in places where potential participants will find them (e.g., bars, clubs, newspaper advertisements, tear-off flyers)

Active recruitment	Actively approaching potential participants in street-based or community settings
PnP/Party-n-Play	A colloquial term used by some MSM to describe club drug-enhanced sexual behavior

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Do you have questions about
your club drug use or unsafe sex?
If you are a gay/bi man, you might
be eligible to participate in a
confidential research study.

You will be reimbursed
for your time.

I crossed my own line

for more info:
call 212.206.7919 x301

PPn
project party n play

GCO#02-0376 IRB approved from 11-05-03 through 6-30-04

Figure 1.
Phase I recruitment material

Figure 2.
Phase II recruitment material

Table 1

Comparing and contrasting Phase I and Phase II

	Phase I	Phase II
Dates	March 23, 2004 – June 5, 2005	June 6, 2005 – December 10, 2006
Length of recruitment phase	13.5 months	18.5 months
Study name	Project PhP, Project Party-n-Play	Project X-factor
Recruitment strategy	Targeted sampling, active and passive	Targeted sampling, active and passive
Project “tag” lines	(1) So I fell out last weekend, (2) I crossed my own line, (3) I am not always safe when I party, (4) I know my drugs just not my options	(1) Ever used ecstasy? And are you a gay/bi man? Tell us about it.
Project commitment	Four 1-hour sessions (weekly), & follow-up every 3 months for 1 year	60 minutes (then offered additional full trial, if eligible)
Time commitment at first appointment	2–3 Hours	1 Hour
Compensation at first appointment	\$40	\$30
Men screened eligible via phone or in the field	56	619
Completed brief survey	N/A	454
Eligible for full trial	56	257
Men enrolled in the full trial	34	116
Enrollment rate, for the full trial (men/month)	2.5	6.3
Enrollment proportion for the full trial (enrolled/screened)	4.34%	7.40%
Recruitment cards purchased & distributed	50,000	50,000
Printing costs ¹	\$1,431	\$1,372
Recruitment hours expended	1,289	1,630
Printing and recruitment costs	\$15,468	\$19,560
Extra costs for Phase II e.g., personale & incentives	N/A	\$20,430
Cost/participant enrolled in full trial	\$497.03	\$356.57

¹ Costs were reduced by \$59 during Phase II due to bulk-ordering discounts