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“It’s Whack, It’s Not Gonna Work”: Feasibility of Sociocentric Network Recruitment for Interventions Among Black, Latine, and Caribbean Priority Populations in New York City

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Abstract

Introduction: Black, Latine, and Caribbean (BLC) sexual and gender minorities (SGM) face structural HIV inequities. Sociocentric interventions may address these barriers, but it is unclear if respondent-driven sampling (RDS) can recruit existing BLC SGM friendship groups or if sociocentric HIV prevention interventions are feasible.

Methods: Using an exploratory mixed-methods design (August/2022–January/2024, New York, NY), we recruited participants into a sociocentric RDS group (sRDS) or an individual-level peer referral (PR) group, with qualitative interviews drawn from quantitative participants.

Results: We enrolled 29 participants in sRDS (seeds = 6) and 30 in PR; 18 completed qualitative interviews. Most were Black or Caribbean; half were US-born; over half were living with HIV. PR was viewed as feasible, while sRDS and sociocentric interventions were seen as inappropriate. Participants suggested social media and influencers for recruitment.

Discussion: Sociocentric approaches may be less acceptable to BLC SGM; recruitment should account for intersectional identities and offer fair compensation.

Keywords

social networking; sexual and gender minorities; mixed methods; African American; Hispanic or Latino

INTRODUCTION

Racial and ethnic sexually minoritized men (SMM) and gender-expansive communities (sexual and gender minorities; SGM), including such groups as Black and Latine SGM, face a health disparity–driven HIV epidemic in New York City (NYC), as approximately 80% of new diagnoses in NYC among people assigned male at birth are among Black and Latine SMM (Centers for Disease Control and Prevention [CDC], 2021b; HIV Epidemiology Program & New York City Department of Health and Mental Hygiene, 2019). More broadly in the U.S., it is estimated that one in five Latine SMM and one in three Black SMM are diagnosed with HIV by age 49 (Hess et al., 2017; Matthews et al., 2016; Singh et al., 2024), and 62% of Black transgender women are estimated to be living with HIV (CDC, 2021a). A milieu of under-addressed structural and intersecting discrimination, fueled by historical oppression, has made Black and Latine SGM subject to these HIV inequities (Bauer, 2014; Bowleg, 2008, 2012, 2013; Callander et al., 2019; Crenshaw, 2017; Duncan et al., 2019, 2020, 2021; English et al., 2020; Feelemyer et al., 2021; Quinn et al., 2019).

Social network characteristics may have utility in linking Black and Latine SGM to HIV prevention services: a previous study found that Black SGM were more likely to discuss preventing HIV/STIs with network members who were family members and older than them (Shrader, Duncan, Driver, et al., 2024). However, social networks may also worsen the HIV-related disparity among Black SGM: social network norms endorsing HIV-related risk behavioral profiles were associated with individual-level HIV-related behaviors, such as sex-drug use (Shrader et al., 2023). Further, sexual networks may predispose Black and Latine SMM to increased vulnerability to HIV as well: Tieu et al. (2016) found that Black and Latine SMM differed in terms of their sexual networks; although there were no differences in sexual network size, Black SMM preferred sexual partners of the same race relative to White and Latine SMM; however, Black and Latine SMM were more likely than White SMM to report having sexual partners living with HIV or of an unknown HIV serostatus (Tieu et al., 2016). As a 2024 study found that 61% of Black SMM and transgender women reported sex-drug use (Shrader, Duncan, Knox, et al., 2024), and SMM

who use stimulants are at a three- to six-fold greater risk of HIV infection (Koblin et al., 2006; Oldenburg et al., 2015; Ostrow et al., 2009; Plankey et al., 2007), further investigation into the social networks of Black and Latine SGM in NYC is warranted to address these health disparities. As individuals do not exist in a vacuum, social network studies facilitate the examination and advancement of HIV equity among Black and Latine SGM (Maulsby et al., 2014; Millett et al., 2007, 2012).

To understand how networks can influence the dissemination of information, behaviors, and attitudes within a network, various social network methodologies have been proposed by Latkin and colleagues (2013), including social network recruitment and interventions approaches. One of these recruitment approaches is respondent-driven sampling (RDS), which has increased in popularity as a sampling technique to recruit individuals from underreached communities. Unlike snowball sampling, which is subject to recruitment biases, RDS provides an opportunity to incorporate a statistical weighting to adjust for these biases and produce more representative samples. RDS offers significant improvements over other network recruitment methods such as peer referral (PR) and multiplicity sampling. Additionally, RDS enhances multiplicity sampling by utilizing dual incentives (for both the referrer and referent) and a coupon recruitment system, thereby improving data integrity and diversity (Heckathorn & Cameron, 2017).

RDS addresses the limitations of traditional sampling techniques in reaching marginalized and minoritized populations (Heckathorn & Cameron, 2017). More specifically in the U.S., RDS has successfully recruited Black or African Americans (Kogan et al., 2011; MacQueen et al., 2015), Latines (Garcini et al., 2022; Kanamori et al., 2019; Montealegre et al., 2013; Shrader et al., 2021), and Asian Americans (Merli et al., 2022). RDS was designed and has since consistently been utilized for HIV surveillance research, particularly recruitment and outreach among populations considered most at risk that lack sampling frames, including people who inject drugs (Heckathorn, 2002; Heckathorn & Cameron, 2017; Latkin et al., 2010, 2013; Rudolph et al., 2011). Additionally, RDS methodology has been widely used as an effective methodology to capture representative data from vulnerable populations that are considered hidden or hard to reach due to stigma and marginalization (Johnston et al., 2013). RDS has also been shown to effectively recruit sexually minoritized (Maulsby et al., 2013; Middleton et al., 2022) and gender-expansive communities (Arayasirikul et al., 2015, 2016). Further, multiple U.S.-based studies have shown success utilizing RDS to recruit socially networked immigrant populations, largely participants from Latin American countries (Garcini et al., 2022; Kanamori et al., 2019, 2021; Shrader et al., 2021).

Thus, RDS also has the potential to identify pre-existing sociocentric networks and is one of few recruitment methods that can be used to recruit community-based networks of groups of friends, or sociocentric friendship networks, for an intervention. Sociocentric networks have utility in identifying potential change agents to disseminate HIV prevention information among SMM communities and to examine structural patterns of network interactions (Chung et al., 2005; Schneider, McFadden, et al., 2012; Schneider et al., 2015). Studies using mixed-method network sampling to recruit community-based samples of SGM have demonstrated the effective use of sociocentric approaches for people living in urban areas (Hequembourg & Panagakis, 2019). For example, Kanamori and colleagues were able to

recruit 11 sociocentric groups of 13 Latine SMM in Miami, Florida in 2018 using RDS (Kanamori, Shrader, Johnson, et al., 2022). However, it is uncertain if this strategy would work in the “post-pandemic” world due to the disruption of social networks as posited by the Big Events theory (Friedman et al., 2021), or in a major city like New York, New York (NYC).

As different sampling strategies can influence sample compositions, it is important to select the most appropriate strategy for the population being studied and the research aims (Meyer & Wilson, 2009). As sampling can play the most pivotal role in conducting research, each method must carefully be considered before selecting the most appropriate method for the population under investigation. For example, while direct recruitment can more efficiently identify SGM living with HIV with unsuppressed viral load, RDS may be more efficient in reaching SGM who have low income and are not open to their sexuality. Thus, there may be utility in supplementing RDS with direct recruitment to enlist a more diverse sample experiencing intersectional stigma.

Although there is ample research using RDS to recruit SGM to expand the scientific knowledge base of HIV prevention among SGM (Duncan et al., 2019; Fuqua et al., 2012; Kanamori et al., 2021; Murrill et al., 2016; Schneider, Michaels, et al., 2012; Wei et al., 2012), there is scant information on the feasibility of RDS to enroll groups of Black, Latine, and Caribbean SGM who (a) live in an urban area and (b) are positioned in an existing sociocentric friendship network (Shelton et al., 2019). In addition, there is much heterogeneity within the Black and Latine communities in NYC, with over 20% of NYC’s population attributing their country of birth to the Caribbean or Latin America (New York City Comptroller & Bureau of Budget, 2017). Thus, we aimed to conduct a pilot study to assess the feasibility of RDS, relative to PR, to recruit Black and Latine SGM in NYC, a major U.S. city, and to assess the feasibility of using sociocentric network interventions for HIV prevention implementation research among this sample.

MATERIALS AND METHODS

STUDY DESIGN AND RECRUITMENT

We used an exploratory concurrent mixed-methods approach to collect quantitative information and conduct in-depth interviews. Data were collected from August 2022 to January 2024. For the quantitative assessments, we recruited participants using either sociocentric respondent-driven sampling (sRDS) or peer referral (PR). For both groups, we reached out to SGM serving community-based organizations (CBOs) in NYC who then posted study flyers in community spaces, sent out flyers to CBOs through emails, and shared information about flyers on their social media pages. We also recruited participants on the NYC Craigslist webpage, through paid Instagram ads, and through handing out or posting flyers in public spaces in the Harlem neighborhood and Brooklyn borough.

For participants in the sRDS group, we aimed to enroll 20 seeds and 12 of their network members, who could either be their friends or friends of their friends, for a total of 13 friends in one network. This approach mirrors the design by Kanamori et al. (2021), which demonstrated the value of capturing social network characteristics for HIV prevention and

intervention development among Latine SMM in Miami, Florida. In order to understand if individuals in a sociocentric network know each other, the entire network must first be enrolled prior to data collection. Thus, we could name other individuals within the sociocentric group in the surveys to ask specific network questions. For the PR group, we asked participants to share information about the study with their friends until we enrolled 30 participants, the minimum sample size to establish feasibility (Browne, 1995; Teresi et al., 2022). This arm provided more flexibility in recruitment as it did not require a preset number of participants to be enrolled before starting data collection.

We operationalized feasibility using Proctor's Outcomes for Implementation Research (Proctor et al., 2011) definitions of feasibility, acceptability, and appropriateness to assess: (1) the use of sRDS to recruit the priority population into a sociocentric network (i.e., group of pre-existing friends), and (2) the receipt of a group-based HIV prevention interventions within a sociocentric group.

ELIGIBILITY

Participant inclusion criteria for the sRDS seeds included (1) age 18 years, or older (2) Black, Latine/x, or Caribbean identity, (3) sex assigned at birth was male or currently identified as a man, (4) illicit drug use or prescription drug misuse (excluding cannabis) or having someone in their network use an illicit drug or misuse prescription drugs, and (5) residing in the NYC metropolitan statistical area (MSA). Thus, friends of friends could be people who identified as cisgender women; however, we excluded data from cisgender women for the present analysis. Participant eligibility criteria for the PR group were the same as for the sRDS group; however, cisgender women were excluded from recruitment.

QUANTITATIVE DATA COLLECTION

Written informed consent was obtained using electronic consent. If participants were recruited from an sRDS group, the entire group was first enrolled before the study team commenced data collection with participants. Quantitative assessments were 1.5~2 hours in duration. Once participants completed the quantitative assessment, a member of the study team provided them with a \$75 gift card to a retailer of their choice. Participants in both the sRDS and PR groups were also provided with a \$10 Amazon gift card for each of their referrals who successfully enrolled in the study. Once participants completed the quantitative assessment, they were invited to participate in a follow-up one-hour in-depth interview.

QUANTITATIVE SURVEY MEASURES

Quantitative measures included sociodemographic and background information, HIV care cascade, the number of people they considered to be close to them, the number of people they used drugs with in the past 6 months, and the number of sexual partners in the past 6 months. Sociodemographic and background information included age (years), gender (cisgender man, transgender woman, nonbinary or another gender), race (non-Latine Black, Black Latine, White Latine, Asian/Indigenous, or multiracial), region of birth (North America/U.S., Caribbean, Central/South America, Europe), parental ancestry, sexual identity (gay/same-gender loving, bisexual/pansexual, straight), preference for concurrent number of sexual relationships (monogamous, polyamorous, monogam-ish), education (some college

or more, high school degree, no high school degree), housing stability (in past 6 months), employment (in past 2 weeks), drug use (ever and past-6-month use of marijuana, cocaine, poppers, MDMA/ecstasy, methamphetamine, club drugs, hallucinogens, and injection drug use), arrest and incarceration history (never arrested or detained, arrested, arrested and detained, arrested, detained, and spent time in jail). Participants indicated whether they were living with HIV, and those who were HIV negative indicated their use of post-exposure prophylaxis (PEP) and/or pre-exposure prophylaxis (PrEP).

QUANTITATIVE ANALYSES

First, we conducted descriptive analyses, then stratified participants based on their recruitment group (i.e., sRDS vs. PR), and conducted χ^2 tests to explore differences between recruitment groups.

QUALITATIVE DATA COLLECTION

The principal investigator (PI; CS) conducted all in-depth interviews with participants using Zoom (1 hour in duration). At the start of each session, the interviewer obtained electronic written informed consent from participants, which included consent to record their audio. The interviewer shared both audio and video while participants shared audio only. Participants were also asked to provide consent to have their interviews audiorecorded. Participants were provided a \$40 gift card to a retailer of their choice by email or mail for their participation in the in-depth interview.

The interview guide queried participants' experiences with HIV prevention and treatment services, how their social network could support their HIV prevention and treatment care, and the feasibility, acceptability, and appropriateness of sRDS, RDS, and the inclusion of sociocentric friendship groups to receive HIV prevention and care interventions together. We used Proctor's Outcomes for Implementation Research (Proctor et al., 2011) to guide the feasibility portion of our in-depth interviews (IDIs). The present analyses focus exclusively on the feasibility component, and the feasibility questions used to guide the IDI can be found in the Appendix.

QUALITATIVE DATA ANALYSIS

In-depth interviews were audiorecorded using Zoom, and transcripts were generated using Microsoft Stream. A member of the study team (research assistants; $n = 4$) then reviewed the artificial intelligence (AI)-generated transcripts by listening to the corresponding audio files and editing the transcripts to ensure verbatim accuracy. The study team used the general inductive approach to analyze transcripts, which included condensing raw qualitative data into a summary while identifying linkages between summaries and the study aims (i.e., feasibility, acceptability, and appropriateness of sRDS and RDS) (Thomas, 2006). Then we identified broader themes from our data.

The principal investigator read each transcript five times and summarized data with each read-through to generate inductive in addition to deductive codes. Then, the research coordinator (CR) and an analyst (MH) read the transcripts three times. The principal investigator met with the research coordinator and the analyst to discuss the codebook.

The research coordinator and the analyst then conducted selective coding and refined the codebook. Finally, the principal investigator, research coordinator, and the analyst collaboratively reviewed and compared these codes to develop categories and overarching themes, focusing on the most salient themes across transcripts.

ETHICAL REVIEW

The Columbia University Institutional Review Board provided ethical approval of our study, in accordance with the 1964 Declaration of Helsinki (#AAAU0691).

RESULTS

We recruited a total of 20 participants to serve as seeds for the sRDS network; however, of these, only 6 seeds and 45 network members enrolled in the study ($n = 51$). Of 51 sRDS participants, 29 met inclusion criteria, provided consent, and completed the quantitative assessments. Those participants who were unable to recruit their networks were provided the opportunity to participate in the PR network. For the PR networks, a total of 70 individuals completed the screener and of these, 15 participants were enrolled as seeds and 15 were referred into the study and enrolled as PR network members. One of these participants did not provide complete data and their information was excluded from analyses. These enrollment networks are visualized in Figure 1. While the sociocentric networks were composed of six unique networks, the peer referral networks were composed of 15 unique networks, the majority of which were isolated nodes. Our sample size of 30 for each group suffices to establish feasibility as determined by previous research (Browne, 1995; Teresi et al., 2022).

QUANTITATIVE FINDINGS

The largest proportion of participants were aged 26–40 years (44.0%), born in the U.S. (66.1%), and reported ancestry from the U.S. (49.2%) or Caribbean (44.1%). In addition, over half of participants identified as cisgender men (61.0%), non-Latine Black (59.3%), and gay or same-gender loving (66.1%). Approximately half of participants identified as monogamous (49.2%). Most participants also reported being single (69.5%), living in stable housing (78%), not being employed (59.3%), being insured (88.1%), having a high school degree or more education (88.2%), never having been arrested (64.4%), an HIV-negative serostatus (47.5%), and among those who are HIV negative, having used PrEP or PEP (89.1%). In addition, most participants reported having worked for a CBO at some point.

We identified sociodemographic differences between participants recruited using sRDS and PR. For example, the sRDS group had more participants born in the Caribbean (sRDS = 46.7% vs. PR = 3.4%; $p < .008$), more participants with Caribbean ancestry (sRDS = 63.3% vs. PR = 24.1%, $p = .01$), fewer participants born in the U.S. (sRDS = 53.5% vs. PR = 79.3%), fewer participants with Latin American ancestry (sRDS = 6.7% vs. PR = 17.2%), fewer participants with U.S. ancestry (sRDS = 33.3% vs. PR = 65.5%), and a larger portion of participants living with HIV (sRDS = 63.3% vs. PR = 24.1%). Additional sociodemographic information can be found in Table 1.

There were no differences in the social network composition of participants based on their recruitment group ($p > .05$). Generally, participants reported 2–5 social network members (57.6%) and 2–5 sexual partners in the past 6 months (40.7%). Among participants who consumed alcohol, one third of the drinking networks were composed of 2–19 people (38.9%), and among participants who used drugs, most drug-use networks were composed of 2–5 people (40.5%). Additional social network information can be found in Table 2.

Most participants reported lifetime marijuana use (74.6%) and 42.4% reported past-6-month marijuana use. Participants also reported lifetime use and past-6-month use of cocaine (32.3%; 11.9%), poppers (30.5%; 20.3%), MDMA/ecstasy (28.8%; 8.5%), methamphetamine (18.6%; 10.2%), and club drugs (15.3%; 8.5%). Participants reported lifetime use of hallucinogens (10.2%) and injection drugs (1.7%). Drug use did not differ by recruitment group ($p > .05$); additional information about drug use can be found in Table 3.

QUALITATIVE FINDINGS

For the qualitative component, 18 participants provided verbal consent and participated in a semistructured in-depth interview: of these, 14 identified as cisgender men, three as nonbinary/fluid or another gender, and one as a transgender woman. Most participants identified as Black ($n = 8$), four identified as Black Caribbean, and five as Latine. The majority were U.S. born ($n = 11$). Most participants were living with HIV ($n = 11$) and adherent to antiretroviral therapy (ART) or PrEP ($n = 15$). A majority were from the sRDS group ($n = 14$). Interviews ranged from 37 to 69 minutes and were a mean of 53 minutes in duration. Thematic saturation may have been reached, as Guest et al. (2006), reported that 97% of high-prevalence codes may be identified within 12 interviews and 78% of all codes can be identified within 18 interviews.

Overall, our qualitative findings suggest that participants perceived sRDS positively; however, when probed to provide additional reflections, participants discussed realizing that although they perceived RDS favorably intellectually, they generally did not like the idea of their friendship networks being enrolled into a sociocentric group with them to receive a group-based HIV-prevention intervention together. In addition, 14 individuals recruited for the sRDS group who were eligible for the study but did not ultimately enroll voiced that they did not want to or thought they would not be able to enroll their network members into their sociocentric network.

There were five themes that emerged from our interviews assessing feasibility of sRDS: intersectional or invisible considerations, perceived facilitators and barriers to participation, perceived characteristics of the referred individual, the message being shared, and logistical strategies and dissemination.

Theme 1: Intersectional or Invisible Considerations. Participants from the Caribbean discussed how they had experienced discrimination and hate crimes in their home countries and how once they migrated to the U.S., their identities, trauma, and experiences were often invisible. These traumatic experiences may prevent participants from wanting to engage with other individuals in the U.S., as they are actively in “flight-or-flight” mode despite having moved to the U.S. As one participant expressed:

It's a lot of stigma in the islands. . . . [Caribbean migrants] don't trust you, they don't know if it's safe to tell their story or tell what's happening because they're so accustomed to be fighting and have so many barriers up when they were living there. Those barriers sometimes are still up, even when they are in a safe place like here. I mean, they're safe here [New York City], but they still have those defenses.—Black cisgender man from the Caribbean

In addition, participants from the Caribbean also shared experiences of discrimination due to their sexual identity (i.e., “Well, you know, Guyana is a homophobic country, and I am a gay man. You have to do everything under the table.”—Black transgender woman from the Caribbean) and their HIV serostatus (i.e., “And then another thing they do, when you die from HIV, they bury you last part of cemetery.”—Black transgender woman from the Caribbean).

Theme 2: Perceived Facilitators and Barriers to Participation. However enthusiastic participants were about recruitment using RDS, participants were generally unenthused about sociocentric group interventions or using sRDS for HIV prevention interventions. One participant expressed their strong endorsement of sRDS, stating how

One network can have the same messaging, and most times when you say “Bring a friend” you're bringing another LGBT friend, another friend who, you know, that really needs this information or need this particular resource. You find that you were able to reach your target, your goal, which is to disseminate information within the LGBT community or to get persons access to care or services.—Black cisgender man from the Caribbean

However, one participant strongly disliked sRDS and exclaimed, “It's whack, it's not gonna work” (Black cisgender man from the U.S.).

Motivators included altruism, as participants wanted to benefit and be helpful to the researchers (i.e., “I know it also helps you guys in the sense of collecting data and information because I know it has a purpose . . . everyone does gain a benefit from it.”—Black cisgender man from the Caribbean), their networks, and their larger community (i.e., “I've known all about just helping friends and friends helping me. I mean that's what my friends just like, to help each other out.”—Black cisgender man from the Caribbean).

Some participants discussed that the incentive highly influenced their decision to participate. While some participants viewed the incentive as a “perk,” others found it to be a stream of income, stating, “It was for the money, for the compensation. I'm not gonna lie, I'm not working right now. So, any source of income is a good thing” (Black cisgender man from the U.S.).

Having a larger and established network was also seen as a facilitator to participation; conversely, having a small network was seen as a barrier to recruiting their networks for sRDS studies. A participant who was already established in a friendship group shared,

I don't have a problem with that, if I have to recruit people. Like I said I have a network of friends—we share information every day, so we don't have that

problem. We have a WhatsApp group, and everybody have, at least my friends who me and them are friends, we have each other number—we share [information] with each other.—Black transgender woman from the Caribbean

Theme 3: The Ideal Referrer and Referent for Participation. Participants discussed the ideal referrer, or person who refers others into the study, and referent, or someone who is referred into the study. The ideal referrer would have a well-established network and be outgoing. For example, one participant said, “I don’t have that many consistent and comfortable conversations with people that often, so I don’t know who I would ask. But to me, if I were a more outgoing person, I might know people who are isolated and still talk to them” (Black cisgender man from the U.S.). Referrers also had to be trustworthy:

Because it’s coming from somebody who I trust. I don’t think they would actually refer me to something that’s like not working or not beneficial to myself. So, when it comes to that person that hasn’t ever trust relation to, it’s like more likely to or for me—I’d more likely look into it.—Black cisgender man from the Caribbean

The ideal referents were those who enjoyed socializing, as participants viewed sRDS to be challenging because “Not everyone is social. So yeah, not everyone like has that type of energy, so that not everyone has a type of like forward attitude” (Black cisgender man from the Caribbean). Additionally, participants discussed how referents needed to have some understanding or experience with studies as there is uncertainty and mistrust surrounding research in general. One participant exchanged several text messages with a friend before the friend ultimately chose not to participate in the sRDS group. The participant shared,

I guess that’s just something she was concerned about. You know, no matter what the study is, be it the information or, you know, if you’re giving blood or some type of DNA, you know, whatever these types of studies is that your stuff is now floating out there somewhere. So that was something that’s that she jokingly brought up too, in the text message.—Black cisgender man from the U.S.

In addition, participants believed that referrers and referents needed to have the capacity and interest to participate in a study such as this. Participants discussed how they and their networks had competing priorities, including drug use (i.e., “some of them were drug addicts”—Black cisgender man from the U.S.) and being “caught up in like other stuff” (Black cisgender man from the U.S.) or that “they didn’t have the time” (Black cisgender man from the Caribbean). In addition, two participants in one network discussed how they were not an appropriate referent as their referrer identified as a transgender woman and the participants (cisgender men) did not want to be associated with her, because they did not want to be mistaken as transgender:

I know the kind of character [FRIEND] is because [FRIEND] mostly would consider herself a girl . . . and I’m like “okay,” really, I don’t really want to participate in things that requires me to be confused about myself. So, I was like, you know, because I think maybe it’s because, let’s just say because you remember she is, as I said, she should be transitioning, let’s just say trans. Now the fact of it, she’s transitioning. Now I’m thinking I’m not transitioning. So why would I participate in something that you’re participating in which you’re transitioning

something like, all right. But when you did message me back and then after you did end up explaining to me, it's not really concerning about what you are, is basically upon the informations you can share and the type of person you are, what you see things as. That is when I said "okay," because that's when I started to feel more comfortable in the fact, "okay," it's just me being me.—Black cisgender man from the Caribbean

This also demonstrates the internalized and potentially demonstrated transphobia within social networks. Also, this quote showed how participants required clarity about the study and some level of research capacity or experience before engaging in a study.

Theme 4: The Message Matters. Participants discussed the importance of the message when considering sRDS, in addition to the context of that friendship group. For example, participants believed that, beyond the referrer and the referent, their social networks, and larger community, the message being delivered was important. As one participant stated,

I feel like the only [sRDS] is sort of challenging because it depends on it, depends on the community, it depends on that that social circle . . . and also the personality type. Because as I said, even though sharing a positive message to a good messenger to someone who isn't receptive is going to result in a big kickback. So it could be like, it could be like it could be taken the wrong way. So even remember, as I said with my partner, it could be a trigger to them because even though I'm giving you a positive message to do something good, it may be perceived as if you're saying, you're insinuating something negative.—Black cisgender man from the U.S.

In addition, participants discussed feeling discomfort sharing sensitive or personal information in a group setting. For example, one participant said, "For them [i.e., BLC SGM] to just like talk about this, like some of them, I think it'd definitely be out of their comfort zone" (White Latine cisgender man with ancestry in Central America). However, participants were split on whether they felt comfortable sharing personal information with their friends relative to strangers, which could influence their decision to participate in an sRDS intervention or study. Sharing sensitive information with their group of friends was viewed as favorable relative to sharing sensitive information with strangers, as indicated by the following quote: "If it's like a group of friends that know each other, likely. . . . But if it was like a group of friends or people who are comfortable with or like do it. So it's like you have to be more likely if somebody is like familiar than random, I guess" (Black cisgender man from the Caribbean). However, other participants did not believe sRDS to be feasible because they believed other Black, Latine, and Caribbean SGM did not want to discuss sensitive topics such as HIV with their close friends. For example, one participant expressed,

There's still a lot of person that are not ready to talk about [HIV]. There are some person who are still don't want to share it and they believe this, believe it's their right, which it is their right, to talk about this. Then you do some who just don't care, who willing to share and you do have some that don't.—Black transgender woman from the Caribbean

Theme 5: Logistical Strategies and Dissemination. There were many logistical strategies to consider for study dissemination. We provided a flyer that participants could share with their friends in order to refer them into the study; however, there were still misunderstandings about the study. While some participants reported that “It was really easy” to enroll participants using sRDS, some participants were confused about what RDS and sRDS are, and how they are different. Participants discussed having mistrust of the study, with one person during enrollment referring to our sRDS approach as a “Ponzi scheme” (i.e., “One of my friends was like, ‘Is this a scam?’”—multiracial Latine cisgender man with ancestry in the Caribbean); being uncertain if they needed to refer a minimum number of friends who enrolled to participate in the study; and believing the IDI or quantitative assessment to be a focus group and not wanting to refer their friends because they did not want to share sensitive information with their friends during a focus group (i.e., “Another was just like unsure of like what they would be getting themselves into like in terms of like the conversations that we would be having.”—Latine cisgender man with ancestry in Central America).

There was a strong emphasis by participants that researchers should “meet participants where they are at,” meaning that multiple types of dissemination strategies outside of RDS and PR should be considered when recruiting participants. As one participant summarized:

Well, sometimes you have to meet people where they’re at, and sometimes we can’t just use one approach, you have to find multiple approaches in disseminating information so, so whenever you’re going to do something, or you’re going to invite, or you going to do something you’re always have to use different, different modes of communicating to people because some people understand verbal, some people understand seeing, some people you know they prefer pictures, some prefer video, some prefer direct call, you know, so there are different methods you have to use, you can’t just use one and stick to it to disseminate information. You have to find different methods and also check for feedbacks, because sometimes people don’t understand the messaging.—Black cisgender man from the Caribbean

Additionally, participants generally believed that RDS and PR were necessary to recruit Black, Latine, and Caribbean SGM who were isolated because researchers are unable to successfully do so using direct recruitment. For example, as one participant explained,

If there’s someone isolated, people who they know are going to have a higher chance of reaching them than you are. . . . I might still be able to reach directly out to them with an opportunity like this, and I’d have a better chance of reaching them than like a system or a researcher.—Black cisgender man from the U.S.

Further, participants endorsed the importance of social media in recruitment. As one participant said,

That it’s using the fact that everyone has a friend circle. Everyone has individuals that they that they speak to on a daily basis. . . . We live in an age where the dissemination of information is more so on social media before, so, well, more so than in person. Like you’ll see something on Instagram before you’ll see it in person before any. So even the fact that we’re using our friend groups, these friend

groups, you make these connections via social media first, sometimes and before anything else.—Black nonbinary person from the U.S.

DISCUSSION

In this pilot study among a focused sample of Black, Latine, and Caribbean SGM, we found that this group did not believe it would be feasible to use sRDS for recruiting their friends into sociocentric groups and receive an HIV prevention intervention in a group setting. We also found that there were differences between those participants recruited using PR and sRDS. Participants' perceptions surrounding sRDS varied, with some participants viewing sRDS and sociocentric interventions favorably in theory, but most believing it would not be feasible, acceptable, or appropriate in practice. Our qualitative findings suggest that when designing sampling methods such as sRDS or PR with this community, researchers should prioritize intersectional or invisible considerations, perceived facilitators and barriers to participation, characteristics of the individuals who are being referred, the message being disseminated, and logistical strategies and dissemination.

Our sRDS recruitment was unsuccessful in the sense that only six out of 20 seeds were able to recruit their networks and 58% (29/51) participants from the sRDS enrolled into the study despite being recruited. We originally planned to recruit and enroll 13 participants into each sRDS network; however, only one of six networks met this criterion. The PR networks were more successful, with participants who shared information about the study on their social media pages recruiting more participants. Participants born in the U.S., relative to the Caribbean, were generally more open about their sexual identity and felt comfortable sharing flyers about drug use and serving as a point of contact and resource about this study. A prior study with Latina women found that when sRDS was used to recruit sociocentric groups of Latina seasonal farmworkers vulnerable to HIV for an HIV prevention intervention, HIV prevention behaviors were sustained for at least one year (Kanamori et al., 2019). Unlike the present study, which recruited only through CBOs and street outreach, Kanamori's study actively partnered with a CBO to conduct all enrollment activities. Additionally, Kanamori et al. (2019) did not enroll groups of friends, but rather a mix of strangers and friends. Another study focusing on Latine SMM successfully used sRDS to recruit and enroll 11 groups of 13 Latine SMM each to identify how sociocentric network characteristics were associated with discussions about HIV prevention information. Kanamori et al. (2021) also partnered with a CBO, and the CBO staff conducted all recruitment activities. sRDS seems to be successful when enrolling individuals who have established networks; however, when networks are fragmented or sparse, sRDS is not a feasible study design or recruitment strategy. Although this suggests that sRDS may not work for group-based interventions, it may still be successful as a sampling method for epidemiological studies.

Alternatively, our findings suggest that the COVID-19 pandemic may have disrupted networks, and thus reduced the success of sRDS recruitment for the present study. Participants did not explicitly discuss the role of Big Events (Friedman et al., 2021); however, upon evaluation of themes such as the ideal referrer and referent and logistical strategies for dissemination, we posit that COVID-19 may partially have been responsible

for the fragmentation or reconfiguration of social networks and, instead, fostered an increased reliance on social media for news and social networking, as previously reported in other groups (Kovacs et al., 2021). The COVID-19 pandemic not only normalized virtual interaction over in-person, physical interaction, but it also disrupted the U.S.'s public health infrastructure, including social services. Thus, network-based interventions can consider how to account for this shift in social structures and the health infrastructure. Balancing big events and changes to networks and norms could also induce stress because of long-standing intersectional discrimination (Bauer, 2014; Bowleg, 2008, 2012, 2013; Callander et al., 2019; Crenshaw, 2017; Duncan et al., 2019, 2020, 2021; English et al., 2020; Feelemyer et al., 2021; Quinn et al., 2019).

Additionally, we found that relative to using PR, when using sRDS we were able to recruit a higher proportion of foreign-born participants, participants with ancestry from the Caribbean, and participants living with HIV. When considering inclusion criteria for a study, it is important to carefully consider the type of sampling strategy. These findings are consistent with previous research suggesting that RDS can recruit a different participant demographic (Beyrer et al., 2021; Meyer & Wilson, 2009). Across both sampling groups, most participants reported unemployment, low income, and an arrest history, and shared how the incentive was a way to earn additional income. However, participants in our sRDS group were more likely to be immigrants and living with HIV, suggesting that this group may experience more marginalization and vulnerability than the PR group. NYC has numerous immigrant enclaves, and there is substantial heterogeneity across these communities. As a result, the invisible and intersectional identities and experiences of people from different countries of origin must be considered when planning recruitment.

Participants generally held a belief that their friends had competing interests that hindered their enrollment and participation in sRDS, which included socioeconomic barriers. As our incentive for providing a referral was a \$10 gift card, future research can consider providing more money within ethical considerations and cash rather than gift cards. Studies conducted in 2018–2023 with similar participant demographics incentivized participants with amounts ranging from \$10 (Duncan et al., 2019) to \$20 (Kanamori, Shrader, Flores-Arroyo et al., 2022; Kanamori, Shrader, Johnson, et al., 2022) for referring members of their social networks. However, due to a lack of transparency about participant incentives in research (Brown et al., 2016), it is difficult to ascertain a fair rate for compensation despite global incentive databases having been proposed by Brown et al. (2018). A global incentive database would be helpful for benchmarking compensation amounts and ensuring that participants are fairly compensated, without having undue inducement.

Our study also supports various social network theories, including the structural holes theory (Burt, 1995). For example, participants discussed how the ideal participant for an sRDS recruitment method would be someone who has a large and diverse network, which can increase access to novel information (i.e., low constraint). However, participants also discussed the importance of individuals being embedded in tightly knit groups, which can promote trust and comfort in a study (i.e., high constraint). Our study findings suggest that while low constraint may be important to spread information about studies, high constraint could potentially be more effective in recruiting and enrolling individuals into a study. These

findings also support that of a previous study examining selection of peer change agents using a sociocentric approach. Schneider et al. (2015) expanded on the structural holes theory to emphasize that individuals with low constraint may also be innovators in HIV preventive behaviors, emphasizing the importance of these individuals in HIV prevention interventions beyond group-based interventions. Our findings also support the theory of homophily, which posits that individuals are more likely to be attracted to and connect to people who are similar to them (McPherson et al., 2001), as participants in this study referred other participants who were similar to them.

LIMITATIONS

A limitation to this study was our small sample size and inability to calculate sampling probabilities. Because of our small sample size, our quantitative findings may be interpreted with caution. In addition, we offered the study only in English, which impeded our ability to recruit people with no or limited English proficiency and may not capture the nuances that participants' first language could offer. Additionally, the resource and time intensity was higher for the sRDS group, in addition to being more logistically difficult to implement, supporting findings from previous studies. RDS and PR have the capacity to recruit similar participants, with RDS being an adaptation of PR, or chain referral sampling. PR and RDS are similar logistically, with PR being less logistically difficult to implement. However, there are differences between RDS and PR: (1) for RDS the number of seeds is preselected, unlike for PR, for which the number is not restricted, (2) for RDS a set number of coupons are given to each participant to then hand out to their network members, while PR does not necessarily include coupon distribution, and (3) RDS includes a statistical adjustment or estimator for the dependencies between participants due to their similarities, while PR studies often do not adjust for dependencies. Our findings contribute to previous research that found RDS and PR to be effective in reaching previously underreached communities (Johnston et al., 2016; Magnani et al., 2005; Shaghaghi et al., 2011), including Black and Latino SMM (Duncan et al., 2019; Fuqua et al., 2012; Kanamori et al., 2021; Murrill et al., 2016; Schneider, Michaels, et al., 2012; Wei et al., 2012).

CONCLUSION

Overall, we found that recruitment of participants from pre-existing sociocentric friendship groups for a group-based HIV prevention intervention was not feasible, acceptable, or appropriate for BLC SGM. Additionally, we found that relative to using PR, when using sRDS we were able to recruit a higher proportion of foreign-born participants, participants with ancestry from the Caribbean, and participants living with HIV, emphasizing the strength of RDS as a sampling method in recruiting hidden populations. Future investigation with this population should carefully consider an appropriate recruitment and sampling strategy based on the intersecting experiences their priority population may experience. Additional research should focus on the efficacy of non-sociocentric/group-based social network interventions such as popular opinion leader interventions (Pagkas-Bather et al., 2020). Our findings are relevant because social networks have become a critical means of addressing persistent health inequities among Black and Latine SGM in the U.S., particularly in the absence of structural change.

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APPENDIX: IN-DEPTH INTERVIEW GUIDE

So, thanks again for being open to talking to me about this! To start, can you tell me a little bit about yourself? Your hobbies? Your job? Where you're from?

What is your experience with HIV prevention services?

- PROBE: Can you tell me about any PrEP services you've heard of or participated in?
- PROBE: Can you tell me about any HIV services you've heard about or participated in?

Okay, so generally, what comes to mind when you think of PrEP?

- PROBE: What about your own PrEP use?
- PROBE: What about injectable PrEP?

What aspects about your sexual health is important to you?

- PROBE: How you do want to improve your sexual health, if you do?
- PROBE: What comes to mind when you think about making changes to improve sexual health?
- PROBE: What about injectable PrEP?

Do you think you need support to help you make these changes?

- IF NO THEN ASK: Okay, could you tell me why that is?
- IF YES THEN ASK: What could this support look like?

How do you think someone could help you make changes to improve your sexual health?

- PROBE: What type of information would be most helpful to receive?

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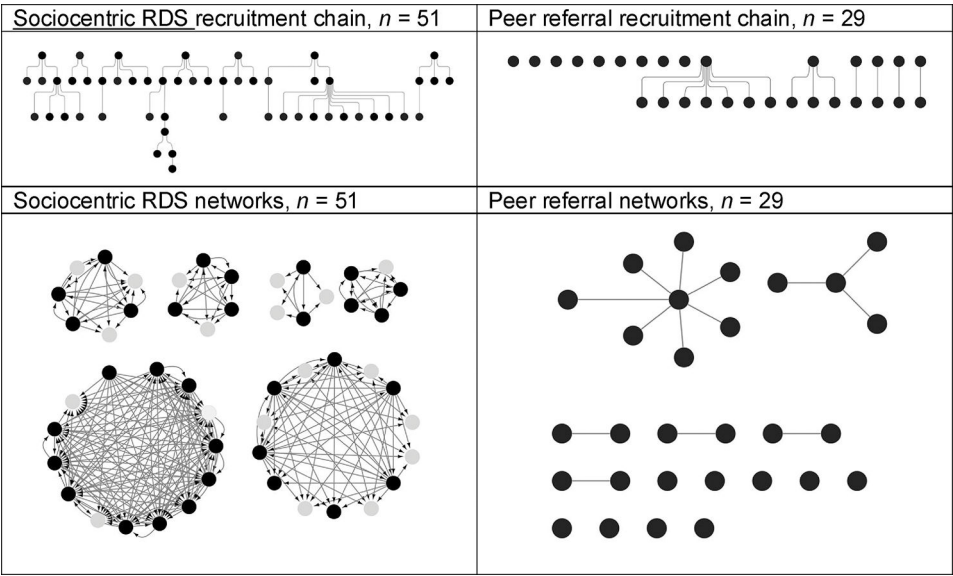


FIGURE 1. Recruitment chains of Black, Latine, and Caribbean sexual and gender minorities in New York City.

TABLE 1.
Sociodemographic Information for Black, Latine, and Caribbean Sexual and Gender Minority Participants in New York City, *N* = 59

	Peer referral (<i>n</i> = 29) <i>n</i> (%)	Sociocentric RDS (<i>n</i> = 30) <i>n</i> (%)	Overall (<i>N</i> = 59) <i>n</i> (%)	<i>p</i> value
Gender				
Cisgender man	18 (62.1)	18 (60.0)	36 (61.0)	.811
Transgender woman	6 (20.7)	6 (20.0)	12 (20.3)	
Nonbinary, fluid, or another gender	3 (10.3)	6 (20.0)	9 (15.3)	
Transgender man	2 (6.9)	0 (0)	2 (3.4)	
Age group				
25 years or younger	8 (27.6)	2 (6.7)	10 (16.9)	.508
26–30	6 (20.7)	7 (23.3)	13 (22.0)	
31–35	4 (13.8)	9 (30.0)	13 (22.0)	
36–40	2 (6.9)	4 (13.3)	6 (10.2)	
40–50	3 (10.3)	6 (20.0)	9 (15.3)	
51 years or older	6 (20.7)	2 (6.7)	8 (13.6)	
Race and ethnicity				
Black Latine	4 (13.8)	3 (10.0)	7 (11.9)	.813
Black, not Latine	14 (48.)	21 (70.0)	35 (59.3)	
Latine	7 (24.1)	2 (6.7)	9 (15.3)	
White Latine	1 (3.4)	1 (3.3)	2 (3.4)	
Indigenous Latine	1 (3.4)	0 (0)	1 (1.7)	
Multiracial	2 (6.9)	1 (3.3)	3 (5.1)	
Asian	0 (0)	2 (6.7)	2 (3.4)	
Country of birth				
Caribbean	1 (3.4)	14 (46.7)	15 (25.4)	.00758
Central/South America	4 (13.8)	0 (0)	4 (6.8)	
Europe	1 (3.4)	0 (0)	1 (1.7)	
U.S.	23 (79.3)	16 (53.3)	39 (66.1)	
Ancestry				
Caribbean	7 (24.1)	19 (63.3)	26 (44.1)	.0101
Latin America	5 (17.2)	2 (6.7)	7 (11.9)	.455
United States	19 (65.5)	10 (33.3)	29 (49.2)	.0471
Sexuality				
Bi- or pansexual	7 (24.1)	3 (10.0)	10 (16.9)	.691
Gay or same-gender loving	17 (58.6)	22 (73.3)	39 (66.1)	
Queer or another identity	2 (6.9)	4 (13.3)	6 (10.2)	
Straight	3 (10.3)	1 (3.3)	4 (6.8)	
Monogamous vs. nonmonogamous				
Monogamous	14 (48.3)	15 (50.0)	29 (49.2)	.923
Polyamorous	15 (51.7)	13 (43.3)	28 (47.5)	

	Peer referral (n = 29) n (%)	Sociocentric RDS (n = 30) n (%)	Overall (N = 59) n (%)	p value
Missing	0 (0)	2 (6.7)	2 (3.4)	
Relationship				
In a closed relationship	2 (6.9)	6 (20.0)	8 (13.6)	.606
In an open relationship	4 (13.8)	5 (16.7)	9 (15.3)	
Single	23 (79.3)	18 (60.0)	41 (69.5)	
Missing	0 (0)	1 (3.3)	1 (1.7)	
Stable housing	26 (89.7)	20 (66.7)	46 (78.0)	.131
Not employed	17 (58.6)	18 (60.0)	35 (59.3)	.901
Insured	24 (82.8)	28 (93.3)	52 (88.1)	.839
Education				
Some college or more	16 (55.2)	8 (26.7)	24 (40.7)	.147
High school degree	12 (41.4)	16 (53.3)	28 (47.5)	
No high school degree	1 (3.4)	6 (20.0)	7 (11.9)	
Detainment history				
No	20 (69.0)	18 (60.0)	38 (64.4)	.853
Arrested	4 (13.8)	7 (23.3)	11 (18.6)	
Arrested and detained	2 (6.9%)	0 (0%)	2 (3.4%)	
Arrested, detained, spent time in jail	3 (10.3)	4 (13.3)	7 (11.9)	
HIV serostatus				
HIV negative	17 (58.6)	11 (36.7)	28 (47.5)	.0459
Living with HIV	7 (24.1)	19 (63.3)	26 (44.1)	
Decline to answer	5 (17.2)	0 (0)	5 (8.5)	
PrEP/PEP use among HIV-negative people				
PEP use only	3 (10.3)	2 (6.7)	5 (8.5)	< .001
PrEP use only	10 (34.5)	5 (16.7)	15 (25.4)	
PrEP and PEP use	2 (6.9)	3 (10.0)	5 (8.5)	
Never used either	12 (41.4)	0 (0)	12 (20.3)	
Missing	2 (6.9)	0 (0)	2 (3.4)	
Ever worked for a CBO	15 (51.7)	20 (66.7)	35 (59.3)	.506

RDS: respondent-driven sampling; CBO: community-based organization.

TABLE 2.

Social Network Information for Black, Latine, and Caribbean Sexual and Gender Minority Participants in New York City, *N* = 59

	Peer referral (<i>n</i> = 29) <i>n</i> (%)	Sociocentric RDS (<i>n</i> = 30) <i>n</i> (%)	Overall (<i>N</i> = 59) <i>n</i> (%)	<i>p</i> value
Number of people in social network				
0	1 (3.4)	2 (6.7)	3 (5.1)	.997
1	5 (17.2)	4 (13.3)	9 (15.3)	
2–5	17 (58.6)	17 (56.7)	34 (57.6)	
6–19	4 (13.8)	6 (20.0)	10 (16.9)	
20 or more	2 (6.9)	1 (3.3)	3 (5.1)	
Number of sexual partners in past 6 months				
0	4 (13.8)	3 (10.0)	7 (11.9)	.967
1	3 (10.3)	5 (16.7)	8 (13.6)	
2–5	14 (48.3)	10 (33.3)	24 (40.7)	
6–19	5 (17.2)	6 (20.0)	11 (18.6)	
20 or more	3 (10.3)	6 (20.0)	9 (15.3)	
Number of drinking partners in past 6 months				
0	7 (24.1)	7 (23.3)	14 (23.7)	.998
1	3 (10.3)	5 (16.7)	8 (13.6)	
2–5	7 (24.1)	6 (20.0)	13 (22.0)	
6–19	6 (20.7)	4 (13.3)	10 (16.9)	
20 or more	6 (20.7)	6 (20.0)	12 (20.3)	
Missing	0 (0)	2 (6.7)	2 (3.4)	
Number of drug-use partners in past 6 months				
0	10 (34.5)	12 (40.0)	22 (37.3)	.999
1	3 (10.3)	3 (10.0)	6 (10.2)	
2–5	8 (27.6)	7 (23.3)	15 (25.4)	
6–19	3 (10.3)	4 (13.3)	7 (11.9)	
>20	5 (17.2)	3 (10.0)	8 (13.6)	
Missing	0 (0)	1 (3.3)	1 (1.7)	

RDS: respondent-driven sampling.

TABLE 3.

Substance Use Among Black, Latine, and Caribbean Sexual and Gender Minority Participants in New York City, *N* = 59

	Peer referral (<i>n</i> = 29) <i>n</i> (%)	Sociocentric RDS (<i>n</i> = 30) <i>n</i> (%)	Overall (<i>N</i> = 59) <i>n</i> (%)	<i>p</i> value
Marijuana				
Ever use	23 (79.3)	21 (70.0)	44 (74.6)	.714
Past-6-month use	13 (44.8)	12 (40.0)	25 (42.4)	.932
Cocaine				
Ever use	11 (37.9)	8 (26.7)	19 (32.2)	.651
Past-6-month use	5 (17.2)	2 (6.7)	7 (11.9)	.455
Poppers				
Ever use	8 (27.6)	10 (33.3)	18 (30.5)	.891
Past-6-month use	5 (17.2)	7 (23.3)	12 (20.3)	.845
MDMA/Ecstasy				
Ever use	9 (31.0)	8 (26.7)	17 (28.8)	.934
Past-6-month use	4 (13.8)	1 (3.3)	5 (8.5)	.353
Methamphetamine				
Ever use	5 (17.2)	6 (20.0)	11 (18.6)	.964
Past-6-month use	3 (10.3)	3 (10.0)	6 (10.2)	.999
Club drugs				
Ever use	6 (20.7)	3 (10.0)	9 (15.3)	.521
Past-6-month use	2 (6.9)	3 (10.0)	5 (8.5)	.913
Hallucinogens				
Ever use	5 (17.2)	1 (3.3)	6 (10.2)	.21
Past-6-month use	0 (0)	0 (0)	0 (0)	
Injection drugs				
Ever use	1 (3.4)	0 (0)	1 (1.7)	.591
Past-6-month use	0 (0)	0 (0)	0 (0)	