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Characterizing the HIV Care Continuum among a community sample of Black men who have sex with men in the United States

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Abstract

Black men who have sex with men (BMSM) have the highest HIV incidence rates among all men who have sex with men (MSM) and have been less likely than other MSM to be diagnosed, linked or retained in care for HIV. The Promoting Our Worth, Equality, and Resilience (POWER) study administered a behavioral health survey and HIV test to BMSM to estimate the HIV continuum of care among a community-derived sample. Of the N=1,680 BMSM living with HIV, n=956 (56.9%) were aware of their HIV-positive status. BMSM who had been previously diagnosed reported progression through the care continuum at greater than 80% for linkage to medical care (97.6%), retention in medical care (97.3%), prescription of antiretroviral therapy (93.6%) and viral suppression (86.4%). Results of this analysis reveal the urgent need to ensure BMSM are being screened and diagnosed. Additionally, community-driven samples are a promising method offering the opportunity to build on the resilience of BMSM progressing through the continuum as well as engage BMSM not yet in care. Lastly, such methods can assist in communicating with those lost to retention.

Keywords

HIV; BMSM; continuum of care; community sampling; observational epidemiology

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Introduction

Current estimates of HIV incidence in the United States are alarming, with Black men who have sex with men (BMSM) accounting for the largest percent of HIV diagnoses among any population group (Centers for Disease Control and Prevention, 2015). If estimates of HIV incidence remain higher for BMSM than other MSM, one statistical model predicts that 60% of BMSM will be HIV-positive by age 40 (Matthews et al., 2016). Factors that have been associated with this epidemic among BMSM include late diagnoses, unknown HIV status, and HIV-positive BMSM not being in care (Maulsby et al., 2014). Compared to HIV-positive White MSM, HIV-positive BMSM are less likely to be diagnosed, linked to care, or to ever use or currently use anti-retroviral (ARV) treatment (Hoots, Finlayson, Wejnert, Paz-Bailey, & Group, 2017; Okeke, McFarland, & Raymond, 2016; Vermund, 2017). Given the importance of the HIV care continuum for preventing and treating people living with HIV/AIDS (PLWHA), this brief report uses a large community-based sample of BMSM to characterize the care continuum through self-reported experiences in clinical care.

Methods

From 2014–2017, POWER utilized time-location sampling (TLS) to recruit a large sample of BMSM at Black Pride events in six U.S. cities: Atlanta, GA; Detroit, MI; Houston, TX; Memphis, TN; Philadelphia, PA; and Washington, DC (Friedman et al., 2018). In each city, recruitment events were randomly selected in two-hour time blocks from all official Black Pride events. At each recruitment site, an intercept zone was established, and individuals entering the intercept zone were counted, approached, and invited to participate in the study (Karon & Wejnert, 2012; Kendall et al., 2008). More information regarding POWER's sampling methods can be found elsewhere (Bukowski et al., 2018; Eaton et al., 2017).

Individuals were eligible to participate in the current analysis if they were: (1) were assigned male sex at birth; (2) reported having a male sexual partner in their lifetime; (3) were 18 years of age or older; (4) identified as “Black” or “African American”; (5) identified as male; and (6) provided self-reported serostatus and/or consented to HIV screening. Participants completed an anonymous self-administered behavioral health questionnaire. A unique subject ID was created in order to identify duplicate participants (Hammer et al., 2003). For duplicate participants, the first response was kept and subsequent responses were removed. Participants were offered confidential HIV testing by local community-based organizations. If confidential HIV testing was declined, participants were offered anonymous HIV testing by POWER. Participants received \$10 for completion of the survey and \$10 for completion of HIV testing. HIV test results were anonymously linked to survey files via a unique subject ID (Friedman et al., 2018). All study procedures were approved by the Institutional Review Board at the University of Pittsburgh.

Measures

HIV status

As previous research has highlighted that BMSM are more likely than other MSM to have an undiagnosed HIV infection, a combination of biological and self-report data were utilized

to assess HIV status (Bukowski et al., 2018). HIV-positive status was determined if participants had a HIV-positive test result, or responded “HIV-positive” to the following question: “What was the result of your most recent HIV test?” HIV-negative status was determined via a HIV-negative test result, yielding the ability to assess previously undiagnosed HIV. Individuals who self-identified as HIV-negative and did not complete an HIV test were not included in analysis.

Previously Undiagnosed HIV-Positive Status

Previously undiagnosed HIV-positive status was determined if participants received a HIV-positive test result in the study and had never received a prior HIV test or responded “HIV-negative,” “Indeterminate,” “I did not get my results,” or “I don’t know,” when asked about the result of their most recent HIV test.

HIV Care Continuum Outcomes

HIV care continuum outcomes were only assessed among participants who identified as HIV-positive. Assessment of *linkage to HIV medical care* used the following yes/no item: “Have you ever been seen by a doctor, nurse, or other health care provider for a medical evaluation or care related to your HIV infection?” *Retention in HIV medical care* was measured with the following item: “Are you currently being seen by a doctor, nurse, or other health care provider for a medical evaluation or care related to your HIV infection?” Assessment of *prescription of anti-retroviral medications* (ARVs) was assessed with the question: “Are you currently taking antiretroviral medicines to treat your HIV infection? To determine *viral load* one item was used: “What were the results of your most recent HIV lab tests? (Viral load)” with four responses (1) undetectable; (2) detectable, but under 10,000; (3) 10,000 – 100,000; and (4) Higher than 100,000.” This variable was recoded as a dichotomous outcome: undetectable (response 1) or detectable (response 2, 3, or 4).

Data Analysis

From the study, 1,680 individuals provided complete data for this analysis. To characterize progress along the care continuum among BMSM, we used frequency analyses. We conducted analyses in SAS version 9.4 (SAS Institute, Inc., Cary, NC).

Results

Figure 1 depicts the HIV care continuum among the HIV-positive BMSM in our sample. Of the 1,680 HIV-positive BMSM, 56.9% (n = 956) had prior knowledge of their HIV-positive status. Of those with prior knowledge of their HIV-positive status, 95.6% (n = 914) were linked to HIV medical care, and 97.3% (n = 889) of HIV-positive BMSM linked to HIV care were retained in HIV medical care. Of those retained in HIV care 93.6% (n = 832) had been prescribed ARVs. Finally, 86.4% of those prescribed ARVs, (n = 719) had an undetectable viral load.

Discussion

The results of our care continuum are different than other continua of BMSM in that once BMSM are linked to care, they progress through the continuum with greater than 80% retention at each step. In developing this continuum, diagnosis was the primary determinant of reaching viral suppression. Further, 42.8% of the BMSM in this community-driven sample report being virally suppressed, much more than previous studies for which estimates range from 16 to 37% (Rosenberg, Millett, Sullivan, del Rio, & Curran, 2014; Singh et al., 2014). This study confirms the need to increase diagnoses among this population and suggests that community-derived samples may be an important verification of clinical-only sampling. If BMSM are correct in their reporting, this highlights the possibility of an issue in the method by which current HIV care continuum estimates are derived, ultimately impacting successful monitoring of HIV outcomes.

Limitations

Our findings must be considered within the limitations of the study design. Most notably our use of self-report HIV care data. Studies have shown an inconsistency between self-report and clinical evaluation of unknown HIV-positivity (Sanchez et al., 2014). Therefore, due to social desirability bias related to self-report data, our data may over estimate the number of HIV-positive BMSM at each stage of the Care Continuum. Future studies may benefit from simultaneous biological data collection while in community settings to improve the congruency of findings, such as using dried blood spot or other analyses in order to determine ARV adherence or evidence of viral suppression to confirm self-reported data.

Additionally, because we utilized TLS, a convenience sampling method to recruit BMSM at Black Pride events, these findings are not generalizable to all BMSM. However, our TLS sampling methods are also strength of this study. They allowed for national data collection from a large sample of BMSM, which increases our confidence in study findings.

Conclusions

Community-engaged health surveillance samples like POWER have several advantages. Such studies offer the opportunity to reengage BMSM not currently in care and access BMSM who are successfully navigating the care continuum to aid in the design of novel resilience-based interventions. Further, such projects build collaboration among researchers and community-based organizations in developing best practices to find and retain BMSM in the care continuum. Lastly, this continuum encourages the exploration of additional non-clinical venues to engage BMSM, strengthening future surveillance estimates and opportunities for intervention.

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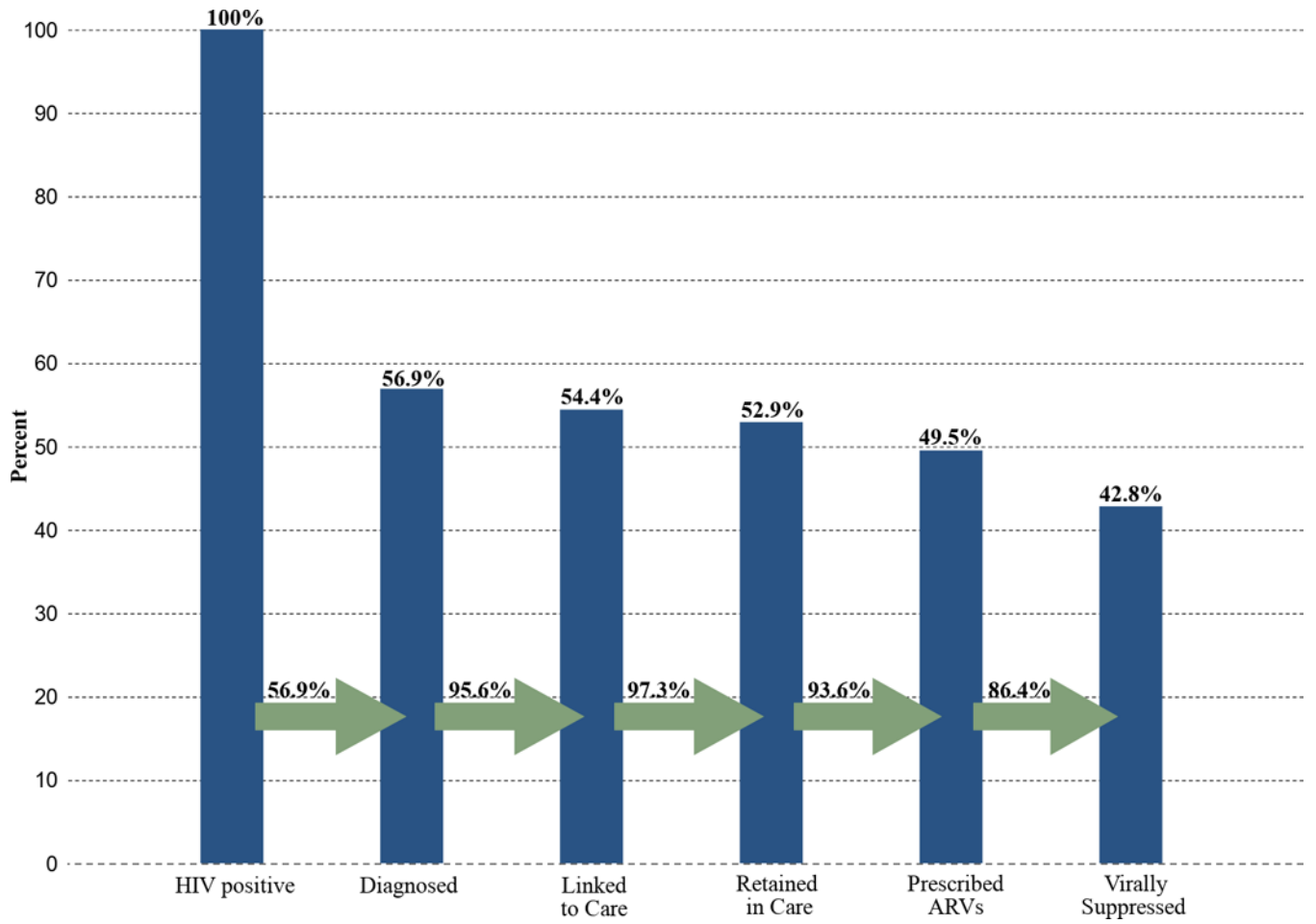


Figure 1. HIV care continuum among HIV-positive Black MSM in POWER: United States, 2014–2017.