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Barriers and Facilitators for Antiretroviral Treatment Adherence Among HIV-Positive African American and Latino Men Who Have Sex With Men

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Abstract

Address correspondence to James W. Carey, PhD, MPH, Division of HIV/AIDS, Centers for Disease Control and Prevention, 1600 Clifton Rd., N.E., Mailstop US8-5, Atlanta, GA 30333. jfc9@cdc.gov.

Some Black/African American and Hispanic/Latino men who have sex with men (MSM) living with HIV do not take antiretroviral therapy (ART). We conducted semi structured interviews with 84 adult, Black/African American and Hispanic/Latino MSM with HIV to understand ART barriers and facilitators. We used chi-square statistics to identify factors associated with ART use ($p < .05$), and selected illustrative quotes. Over half (51.2%) said they followed their doctor's instructions; however, only 27.4% reported consistently taking ART. Some men delayed ART until overcoming diagnosis denial or becoming very sick. ART use was facilitated by encouragement from others, treatment plans, side effect management, lab test improvements, pill-taking reminders, and convenient care facilities that provide “one-stop shop” services. Men were more likely to take ART when having providers who communicated effectively and were perceived to treat them with respect. Healthcare personnel can use our findings to strengthen services for MSM of color.

Keywords

antiretroviral adherence; Black/African American men who have sex with men; Hispanic/Latino men who have sex with men; content analysis; HIV/AIDS

INTRODUCTION

HIV clinical care should begin immediately upon diagnosis, and be sustained throughout the lives of persons with HIV (PWH; Cohen, 2011; Giordano, 2015; Rodger et al., 2019). Antiretroviral treatment (ART) promotes viral suppression. This helps patients' immune systems remain intact, and PWH with suppressed viral load have effectively no risk of transmitting HIV to others (Cohen, 2011; Giordano, 2015; Giordano, Suarez-Almazor, & Grimes, 2005; Insight Start Study Group et al., 2015; Rodger et al., 2016, 2019). Taking ART as prescribed and achieving viral suppression thereby lowers new infection rates, particularly when infections are diagnosed and treated as early as possible (Cheever, Lubinski, Horberg, & Steinberg, 2007; Das et al., 2010; Fauci, Redfield, Sigounas, Weahkee, & Giroir, 2019; Millett et al., 2012; Shah et al., 2016; The White House, 2013; The White House Office of National AIDS Policy, 2015). In a study of HIV serodiscordant gay couples who had condomless sex, where the HIV-negative partner was not using pre- or post-exposure prophylaxis (PrEP or PEP), and the HIV-positive partner was taking ART and had viral suppression, the researchers reported an HIV transmission rate of zero per 100 couple-years of follow-up (Rodger et al., 2019).

To receive ART, patients must first be linked to and stay in clinical care. Some PWH do not become care-engaged after diagnosis, and others move in and out of care over time (Hallett & Eaton, 2013; Powers & Miller, 2015). The Centers for Disease Control and Prevention (CDC)'s Medical Monitoring Project (MMP) collected data from PWH residing in 23 areas throughout the United States between 2015 and 2016 (CDC, 2018). MMP data show 96.6% of adult PWH 18 years old attended at least one HIV medical care appointment; 80.0% were retained in care as defined by the patient receiving two HIV outpatient care elements at least 90 days apart; and 85.3% were prescribed ART according to medical chart records during this same 12-month period. In another report, 71.2% of HIV care physicians initiated

ART with their patients (Weiser et al., 2017). In addition to clinical contraindications, providers deferring ART cited patient refusal, adherence concerns due to mental health, substance abuse, or other illnesses, and life circumstances, such as when patients were homeless, incarcerated, or migrants (Weiser et al., 2017).

Disparities among PWH subgroups exist (Beer, Mattson, Bradley, Skarbinski, & Medical Monitoring Project, 2016). For example, men who have sex with men (MSM) living with HIV and in care had an overall estimated rate of ART use of 87.5% in 2014 (Hoots, Finlayson, Wejnert, Paz-Bailey, & National HIV Behavioral Surveillance Study Group, 2017). But while ART use among White MSM was 92.1%, ART use among Black/African American MSM was 83.3%, and 88.7% among Hispanic/Latino MSM. Young MSM between 18 and 29 years old had particularly lower ART use rates (78.0%), as did MSM with no health insurance (70.5% in 2014) (Hoots et al., 2017). Among PWH aged 13 years or older, 40.1% of Black/African Americans and 48.1% of Hispanic/Latinos were estimated to have durable viral suppression, compared with 56.4% of whites in 2014; current trends may lead increased future disparities (Crepaz, Tang, Marks, & Hall, 2017; Hood et al., 2017). Increasing ART use and viral suppression, coupled with decreasing inter-group disparities, would substantially reduce HIV incidence in the United States (Uzun Jacobson, Hicks, Tucker, Farnham, & Sansom, 2018).

Many factors explain why some PWH do not receive HIV care or take ART. HIV is unevenly distributed in different counties and states in the U.S., and services are not always available in areas where PWH live (Fauci et al., 2019; Sheehan et al., 2017). African American and Hispanic/Latino MSM living with HIV are less likely to be engaged in care when medical facilities are inconveniently located (Carey et al., 2018; Hightow-Weidman et al., 2017). PWH with inaccessible care facilities have challenges obtaining ART. When PWH can physically access HIV care and obtain prescriptions, financial costs may lead to ART lapses (Wohl et al., 2017). HIV-related stigma, homophobia, or racial/ethnic discrimination are societal factors that discourage PWH from seeking care or taking ART. These factors may adversely affect patient-provider interactions (Blake Helms et al., 2017; Kalichman et al., 2016; Rice et al., 2017; Seghatol-Eslami et al., 2017). Among young PWH in Chicago, 46% reported experiencing HIV-related stigma, which along with other factors, lowered ART adherence (Kuhns et al., 2016). Such factors may exacerbate medical mistrust and lower ART adherence among Black/African American PWH (Bogart et al., 2016; Pellowski, Price, Allen, Eaton, & Kalichman, 2017). PWH of color too often face significant challenges related to pervasive stigma and racism which adversely affects availability and quality of their healthcare and adherence (Gaston & Alleyne-Green, 2013). Feelings of internalized HIV-related stigma may be present among nearly 80% of all PWH adults in the United States, not just among MSM of color (Baugher et al., 2017). Approximately 80% of Black/African American, 86% of Hispanic/Latino, and 74% of white PWH adults report internalized HIV-related stigma (Baugher et al., 2017). Moreover, a multitude of individual-level living circumstances, psychological attributes, and personal health behaviors have been shown to affect ART adherence. A partial list includes stress, depression, food insecurity, and other factors related to poverty, as well as alcohol and drug abuse (Blitz et al., 2017; Gross, Hosek, Richards, & Fernandez, 2016; Nolan et al., 2017; Pellowski et al., 2016; Quinn, Voisin, Bouris, & Schneider, 2016; Tucker et al., 2017). Some PWH do

not believe they need ART: in 2014, 21.2% of PWH surveyed said they never started ART because they felt healthy or they thought their HIV lab results were good (CDC, 2016a).

In our present analysis, we identify factors that may affect ART-taking among HIV-positive Black/African American and Hispanic/Latino MSM (hereafter referred to as MSM of color). In a separate analysis using other data from the same sample, we identified factors that influenced sustained HIV care engagement (Carey et al., 2018). Being care-engaged does not guarantee that PWH are prescribed ART, or that they adhere to taking ART medications when prescribed. Here, we examine men's personal descriptions of their successes and difficulties in taking ART. Understanding experiences that MSM of color living with HIV have with ART can provide insights useful for improving care and treatment (CDC, 2016d; Fauci et al., 2019; Gelaude et al., 2017; Millett et al., 2012; Powers & Miller, 2015; Rajabiun et al., 2007; The White House Office of National AIDS Policy, 2015).

METHODS

The Emory University Institutional Review Board approved our protocol. We conducted our study in five U.S. cities with elevated HIV prevalence and large populations of MSM of color (CDC, 2016b): Atlanta, GA; Baltimore, MD; Chicago, IL; Los Angeles, CA; and Washington, DC. We used a cross-sectional, qualitative research design. Respondents were recruited via medical provider and case manager referrals, listserv postings, and flyers distributed at events or locations frequented by MSM of color. We screened respondents by phone or in-person. Eligible respondents reported being HIV diagnosed; cisgender male; 18 years or older; Black/African American and/or Hispanic/Latino; had sex with another man at least once in the past 6 months; and, able to be interviewed in either English or Spanish. We used written consent forms, and respondents received \$40 cash or as a gift card. We completed the face-to-face interviews in 2014.

Each interview lasted approximately one hour. Interviews were conducted in various private locations. During each interview, we asked the men to provide sociodemographic characteristics using structured response questions. These characteristics included age, race/ethnicity, sexual identity, education, and health insurance coverage; we analyzed these data using SPSS. Interviewers also asked semistructured open-ended questions regarding HIV medical treatment, including ART; understanding of HIV lab and diagnostic tests; experiences with medical and social service providers, and healthcare facilities; perceived barriers and facilitators to care engagement, ART prescriptions, and treatment adherence. When needed for clarity, interviewers asked follow-up probes. Interviews were recorded and transcribed verbatim; personal identifying information was redacted. Fourteen of the 84 interviews were conducted in Spanish and were translated into English. Senior project staff reviewed transcripts for quality.

We used content analysis to analyze the open-ended question responses, including combinations of both qualitative and quantitative methods (LeCompte & Schensul, 1999; Leech & Onwuegbuzie, 2007; Namey, Guest, Thairu, & Johnson, 2008; Onwuegbuzie & Teddlie, 2003). Content analysis studies typically report frequencies and descriptive statistics to help identify common themes in a sample (Krippendorff, 2013; Scheier, 2012;

Schlesselman, 1982; Weber, 1990). Bivariate or multivariate statistics have been used to examine co-occurrences between themes (Krippendorff, 2013; Namey et al., 2008; Neuendorf, 2017; Weber, 1990).

Our initial content analysis involved identifying each man's adherence. Our sample included men who reported consistently taking ART, inconsistently taking ART, or others not taking ART at the time of the interview. Some men who reported not taking ART said that they were following their doctor's HIV treatment instructions, i.e., their doctor had told them they did not yet need to take ART. At the time of data collection, U.S. HIV treatment guidelines recommended ART should begin at a CD4 count of 500 or less, or when the patient had at least one opportunistic infection. Shortly after data collection finished, the guidelines were updated to recommend ART for all PWH regardless of CD4 level (CDC, 2014a). This change may partially explain why some men said they followed their doctor's treatment advice, but were not taking ART.

To capture adherence variation among respondents, we created two dichotomous variables. The first classified each man as HIV medical-care adherent or not at the time of the interview, regardless of whether he was taking ART or not. HIV medical-care adherent men indicated they consistently followed their doctor's HIV treatment recommendations. Men classified as HIV medical-care non-adherent included respondents who either were seeing a doctor but said they did not follow their doctor's recommendations, or men who were not seeing a provider for HIV treatment. Our second adherence variable classified respondents based on self-reported ART use. For this variable, we classified men as consistently taking ART or not consistently or not taking ART at the time of the interview. Consistently taking ART men included those who said they were prescribed ART and took it as pre-scribed at the time of the interview. Men classified as not consistently or not taking ART included men who were prescribed ART but said they often missed doses (e.g., at least once a week or several times a month), or they said they were not taking ART for any reason.

We also identified potential barriers and facilitators to consistently taking ART. For our purposes, barriers and facilitators included personal beliefs, behaviors, experiences, circumstances, or other factors that hindered or helped the men take ART. We classified each transcript as either containing or not containing statements that corresponded to each barrier or facilitator mentioned. We created a codebook that defined each barrier or facilitator (Hruschka et al., 2004; MacQueen, McLellan, Kay, & Milstein, 1998). We used the final codebook to code each transcript using NVivo. We assessed inter-coder agreement using Cohen's kappa (Hruschka et al., 2004). Seventy percent of the codes had a kappa of 0.8 or higher, indicating substantial inter-coder agreement. Coding disagreements were resolved via consensus. We used crosstab tables and chi-square statistics to assess co-occurrences between taking ART and each barrier and facilitator ($p < .05$) (Krippendorff, 2013; LeCompte & Schensul, 1999; Namey et al., 2008; Neuendorf, 2017). Finally, we selected illustrative quotes showing these barriers or facilitators. The quotes help explain why and how the barriers and facilitators affect the men's ART-taking.

RESULTS

Table 1 describes the 84 MSM of color with HIV in our sample. Over a quarter were from Atlanta (28.6%, $n = 24$) and Chicago (27.4%, $n = 23$). Fewer were Los Angeles (23.8%, $n = 20$) or Baltimore/Washington, DC (20.2%, $n = 17$) residents. Mean age was 42.4 (SD = 10.3; range: 20–59) years old. The majority identified as Black/African American (59.5%, $n = 50$); Hispanic/Latinos comprised 36.9% ($n = 31$). Most identified as gay or homosexual (69.0%, $n = 58$), and 20.2% ($n = 17$) identified as bisexual. Over half (58.3%, $n = 49$) had some college or were college graduates. Regarding health insurance, 58.3% ($n = 49$) had coverage via Medicaid, Medicare, or private insurance, while 17.9% ($n = 15$) indicated partial coverage (e.g., Ryan White). Approximately two-thirds (66.7%, $n = 56$) said their HIV diagnosis occurred after 1996, thus, after ART became commonly available for PWH. Seven men (8.3%) were diagnosed within 18 months prior to their interview.

Regarding our two adherence variables, roughly half (51.2%; $n = 43$) said they were HIV care-adherent to their doctor's instructions at the time of the interview (Table 1). We previously reported that 61.9% ($n = 52$) of this same sample were consistently engaged in clinical care at the time of the interview (Carey et al., 2018). Thus by subtraction, 10.7% ($n = 9$) of the 84 respondents were seeing HIV clinicians but did not consistently follow their doctor's care advice. Table 1 also shows only 27.4% ($n = 23$) of the men were consistently taking ART at the time of the interview (i.e., they had been prescribed ART and were taking it as prescribed). Thus, nearly three-quarters (72.6%) were not consistently taking ART as prescribed, or were not taking any ART. Not surprisingly, the two ART adherence variables are associated with each other (chi-square value = 25.06, $p = .001$, $df = 1$). Because ART is critical for HIV viral suppression, we limit our subsequent results to the consistently taking ART at the time of the interview variable. For brevity, we refer to this as "taking ART." Taking ART was not associated with respondent's city, race/ethnicity, sexuality, health coverage, or HIV diagnosis pre- or post-ART availability ($p > .05$).

Likewise, interviewer ID was not associated with taking ART ($p > .05$); this suggests that interviewers did not bias how men reported their ART-taking responses. However, taking ART was associated with a dichotomized version of the respondent's age, with men 45 years old more likely than men < 45 years old to take ART (chi-square = 5.45, $p = .0196$, $df = 1$). We dichotomized the sample this way because the median age of the men was 45 years. Similarly, men having more than a high school education were more likely to consistently take ART (chi-square = 5.18, $p = .0229$, $df = 1$).

Table 2 lists 15 factors associated with taking ART ($p = .05$). As noted above, respondent age and education were the only variables from Table 1 related to taking ART. However, education was not associated with any the 15 factors listed in Table 2 ($p > .05$). Therefore, difference in education did not create any of the associations shown in Table 2 (Rothman & Greenland, 2005; Schlesselman, 1982). However, respondent age was associated with one factor, i.e., whether the respondent reported having a "one-stop shop" HIV clinical care facility (chi-square = 5.92, $p = .0170$, $df = 1$). Because age was associated with both taking ART variable and one-stop shop, we stratified the sample by respondent age. Having a one-stop shop remained associated with increased ART-taking among men < 45 years old

(chi-square = 4.56, $p = .033$, $df = 1$). However, having a one-stop shop was not associated with taking ART among men 45 years old (chi-square = 1.08, $p = .299$, $df = 1$). In sum, having a one-stop shop care facility appeared to help younger men take ART, but it did not help the older men.

We discuss the 15 factors listed in Table 2 in further detail below. Twenty-three of the 84 men said they were told by their doctor that they did not yet need to be taking ART, and presumably did not receive ART prescriptions. We therefore computed results shown in Table 2 for the full sample ($N = 84$), and again using a reduced sample that excluded these 23 men. The reduced sample thus contains $n = 61$. With a couple of exceptions discussed below, the substantive results were similar regardless if we used the full or reduced samples. We present illustrative quotes that help explain how and why these factors affected taking ART.

PRECURSORS TO TAKING ART

The first three factors in Table 2 are ART-taking precursors. Many men report ed denial after learning their HIV diagnosis (Table 2). However, we were surprised to see that the men taking ART were more likely than the men not taking ART to report earlier denial periods (47.8% versus 16.4%; $OR = 4.68$; $p = .003$ in the full sample). This pattern was slightly stronger when using the reduced sample (50.0% versus 12.8%; $OR = 6.80$; $p = .002$). Many of these men later overcame initial HIV denial.

Someone had called me to tell me that some partners I had before were already—
And, I would say “No, not me, that doesn’t happen to me.” It’s the denial; after the
diagnosis you don’t accept it, you deny it.

(Adherent, 48, Hispanic/Latino)

A large portion of men not taking ART (36.0%) said they were not doing so because their clinical providers had told them they did not yet need to take ART (Table 2). As previously explained, data were collected just prior to a change in HIV treatment recommendations; it is possible that these men’s doctors were following ART prescription recommendations that were in place at the time. Not surprisingly, this variable was associated with whether or not men in the sample were taking ART at the time of the interview ($p = .0037$; Table 2). A third precursor led 30.4% of the respondents to start taking ART after they got very sick (Table 2; $OR = 12.91$ in the full sample; $p = .0003$, $df = 1$). This factor also was statistically significant in the reduced sample ($p = .005$). I went to jail one time and caught staph.

I went to jail again a few months later and caught staph again, and that scared me.
I felt like, “Okay, my immune system must be dropping behind my drug usage.”
So the doctor talked to me about, she said we know that one cocktail, and she
convinced me to: “Will you just try?” I said, “As long as I don’t have no side
effects.” ... I’ve been taking Atripla since 2008; I haven’t had any side effects.

(Adherent, 49, African American)

PATIENT-LEVEL FACTORS

After men overcame denial, sought care, and obtained prescriptions, several “patient-level” factors influenced consistently taking ART. The first of these involved encouragement from people outside of medical settings to take their ART. Table 2 shows that 17.4% of ART users reported receiving such encouragement, while only 3.3% of men not taking ART mentioned this (OR = 6.21; $p = .0251$). This association remained in the reduced sample ($p = .006$).

Taking ART was linked with whether the men had a specific HIV treatment plan (Table 2). Over half of the respondents (60.9%) taking ART in the full sample had an explicit treatment plan, while only 19.7% of those not taking ART had a plan for managing their HIV (OR = 6.35; $p = .0003$). Some men developed plans on their own, while others did so in consultation with physicians. This association also was statistically significant in the reduced sample ($p = .010$).

Taking your meds, then seeing your doctor regularly. Keeping up with your counts, your CD4 and your viral load. Just seeing a doctor regularly to make sure you're okay. That's what my treatment consists of. As a matter of fact I've to go see him [his provider] in two weeks.

(Adherent, 52, African American)

Beyond having concrete treatment plans, 21.7% of the respondents taking ART were motivated by improvements in their HIV lab test results over time. Only 3.3% of the group of men in the full sample not taking ART mentioned this ($p = .0063$; Table 2). This relationship remained statistically significant in the reduced sample as well ($p = .038$).

The most drastic change was as far as HIV meds was, looking at my labs and seeing how good my labs was and seeing that I'm undetectable.

(Adherent, 55, African American)

Men taking ART reported other actions that helped them adhere to their regimen. For example, 43.5% of the men in the full sample consistently taking ART said they kept their medications out in visible locations to remind them to take the pills; only 16.4% of the men not consistently taking ART mentioned this behavior ($p = .0094$; Table 2).

I have it [his medication] right there on my counter, my kitchen counter. It's just there, and so every time I come home, I'll see it, and I'll remember. And then I have a reminder in my phone, and that goes off every day at 8:45 p.m.

(Adherent, 37, Hispanic/Latino)

Many men taking ART (43.5% of the full sample) developed ways to overcome, reduce, or cope with medication side effects (Table 2).

The only issue I have, I just have to be sure that I take it with food and with enough food solid because it's, you know, if not it will cause diarrhea. You know, so, I don't want that so I just have to be sure you know that I, you know—not take—take it on an empty stomach, you know. Make sure it's some solid food.

(Adherent, 56, African American)

PROVIDER-PATIENT INTERACTION FACTORS

Men taking ART more often said their providers treated them with respect ($p = .0020$; full sample; Table 2). Similarly, in the full sample, ART-taking men preferred providers who were “straightforward” and did not “play games” ($p = .0286$), but the association was no longer statistically significant when we used the reduced sample ($p = .093$).

Table 2 highlights the important role of effective providers giving clear descriptions about what patients should expect (full sample $OR = 12.63$; $p < .0065$), and when respondents were able to take in and understand their doctor’s information (full sample $OR = 5.03$; $p = .0137$). ART-taking men more often reported providers who clearly explained information to them. However, less than 3% of the men who did not take ART thought they had providers who clearly explained what to expect regarding their HIV treatment. Language did not appear to be an issue; the Hispanic/Latino men said they rarely had communication difficulties with their HIV clinical care providers because they were bilingual, their medical providers spoke Spanish, or they had translators during their appointments. Men who successfully took ART also asked their providers questions (43.5% versus 13.1% in the full sample; $OR = 5.10$; $p = .0025$).

My doctor is very thorough. She explains everything so I can understand it. If I don’t understand it, I’ll ask her to try and clarify it, you know, she’s a really good doctor. I’m really thankful to have her.

(Adherent, 37, Hispanic/Latino)

I love my doctor. I like him because um, you notice sometimes with my English, he notice what’s going on with me, so, um, he tries to be sure that I understand what he’s saying ... He talks me in Spanish, I talk to him in English (laughs). “Como esta, [respondent name].” “Good, doctor, how are you?” And then he’s like, he keeps talking in Spanish.

(Adherent, 43, Hispanic/Latino)

CARE FACILITY FACTORS

Clinical care facility characteristics promoted or hindered taking ART. Nearly a third (30.4%) of the men taking ART said they had convenient HIV care facilities, while only 8.2% of the men not taking or inconsistently taking ART reported this advantage ($OR = 4.90$; $p = .0094$; Table 2). The association remained when using the reduced sample ($OR = 4.08$; $p = .035$).

What I like about [Name of clinic] is the fact that all services are here. Doctors, nurses, social workers, even lawyers...

(Adherent, 45, Hispanic/Latino)

Likewise, having a one-stop shop facility that provides multiple services was associated with taking ART ($OR = 3.36$; $p = .0145$; Table 2). Well over half (56.5%) of the men taking ART reported this, but a much lower proportion (27.9%) of those not taking or inconsistently taking ART mentioned having one-stop shop services. A similar pattern

remained when using the reduced sample. As noted earlier, respondent age potentially influenced this association. Younger men were more likely to take ART when they had a one-stop shop facility, but this factor did not appear to affect ART-taking among the older men. The transcripts did not reveal a clear explanation for this age-related difference. We conjecture that younger men may have had transportation or time constraints that made having a one-stop shop important, while older men were better able to manage having unconsolidated multiple facility locations. Alternatively, this age-related difference may be an artifact unique to our sample; further study is needed.

DISCUSSION

MSM of color living with HIV described their personal struggles and successes with ART in our interviews. We identified 15 factors associated with taking ART. The men's narratives yielded information on how providers and public health practitioners can better address the needs of Black/African American and Hispanic/Latino MSM. ART-taking varied over time with many respondents in our sample. For example, before they consistently began taking ART, many men overcome HIV diagnosis denial, or became very sick and recognized the necessity for getting treatment. After starting ART, men developed personalized techniques to facilitate on-going adherence, including having treatment plans, managing side effects, and pill-taking reminders. Our findings highlight how convenient clinics, staffed with healthcare providers with excellent interpersonal and communication skills promotes ART adherence. In a prior report, we identified seven factors related to these men being engaged in clinical care (Carey et al., 2018). While care engagement is necessary to receive and maintain ART prescriptions, seeing a physician does not guarantee patients receive prescription or take ART medications as prescribed. It is noteworthy that several factors identified as being associated with ART-taking in our current analysis also are associated with engagement, i.e., men who went through and overcame initial HIV diagnosis denial; having an explicit treatment plan; and, having conveniently located care facilities that provide one-stop shop services (Carey et al., 2018). Public health efforts that prioritize these factors might simultaneously encourage patients living with HIV to regularly see their physician and enhance ART adherence rates.

After HIV diagnosis, some respondents did not see the value of taking medically useful actions (Laws, 2016). Men in our study who got past denial strengthened their self-efficacy to manage their illness (Corless et al., 2017; Houston et al., 2016; Lee et al., 2016; Turan, Fazeli, Raper, Mugavero, & Johnson, 2016). HIV care providers can help PWH get past denial by building trust and rapport, provide encouragement, and explain benefits of treatment (Gelaude et al., 2017). Some of our men interpreted HIV lab test results as signifying they were successfully taking care of their health. Another study reported 30.4% of all PWH surveyed who were not currently taking ART and had a past history of taking ART, said they stopped because they thought it would make them feel sick or cause them harm (CDC, 2018). ART-taking men in our sample created ways to mitigate ART side effects, especially when their providers proactively helped them be prepared. Keeping medicines in visible locations acted as simple pill-taking reminders for ART-taking men in our sample. Forgetting to take one's HIV medicines is a frequently cited reason for not taking ART (CDC, 2018). Mobile phone apps or reminder messages may help

achieve sustained adherence (CDC, 2017; Muessig, LeGrand, Horvath, Bauermeister, & Hightow-Weidman, 2017). Having explicit treatment plans also helped our respondents stay on track for meeting their healthcare goals. Providers can help MSM of color and other PWH patients create personalized treatment plans as a means to manage side effects and promote adherence (CDC, 2016c; Hawk et al., 2017; U.S. Department of Health & Human Services, 2017). Simplifying ART regimens is beneficial (Chen, Chen, & Kalichman, 2017). When present, substance use may overwhelm a patient's ability to remember to take pills and must be addressed (Kalichman, Kalichman, & Cherry, 2017).

Many HIV clinicians recognize the crucial role inter-personal relationships play in delivery of successful HIV medical care to their patients (Gelaude et al., 2017). In our sample, taking ART was more likely when the men attended facilities where they had positive experiences with providers who treated them with respect and who communicated effectively. To avoid alienating patients, providers must demonstrate they value their patients and not be disparaging or judgmental (Gelaude et al., 2017; Hawk et al., 2017). Providers who show respect and empathy have HIV patients with better treatment outcomes (Flickinger, Saha, Roter, Korthuis, Sharp, Cohn, Eggly, et al., 2016; Flickinger, Saha, Roter, Korthuis, Sharp, Cohn, Moore, et al., 2016). Providers with stigmatizing attitudes or behaviors, including homophobia, transphobia, racism, or other negative views of PWH, can impede successful HIV prevention, care, and treatment service delivery (Geter, Herron, & Sutton, 2018). Many respondents appeared to benefit when providers clearly explained their treatment, and had nonjudgmental demeanors (Hawk et al., 2017; Mitchell et al., 2017). It is worth noting that effective communication should be perceived by patients. Prior studies have shown that how patients perceive communication and relationship quality with their providers can affect treatment adherence (Bankoff, McCullough, & Pantalone, 2013; Kerr, Engel, Schlesinger-Raab, Sauer, & Hölzel, 2003; Molas-siotis, Morris, & Trueman, 2007; Ruiz-Moral, Perez Rodriguez, Perula de Torres, & de la Torre, 2006; Schneider, Kaplan, Greenfield, Li, & Wilson, 2004). Clinics can improve HIV provider-patient communication quality and reduce perceived stigma (Dodge et al., 2001; Geter et al., 2018; Haskard, DiMatteo, & Heritage, 2009). Clinic-wide team efforts pay off in terms of improved patient satisfaction and care-seeking (Beach et al., 2015; Bluespruce et al., 2001; Lam et al., 2016).

Finally, our results support care facility location convenience, as well as clinics offering multiple "one-stop shop" ancillary services (Hawk et al., 2017). Having one-stop shop facilities seemed to help younger men in our sample take ART. To the extent possible, HIV care facilities should be located in places that are as easy as possible for the majority of patients to attend, and hours of operation should take into account patient schedules (Gelaude et al., 2017).

LIMITATIONS

Our study design helped us recruit MSM of color with HIV from five cities and two racial/ethnic groups. Our findings should not be interpreted to reflect all MSM of color with HIV, or other PWH populations. Our sample may over-represent MSM of color with HIV who have ART challenges. The percentage of men in our sample who said they consistently took ART is considerably lower than national or city-specific numbers estimated by the National

HIV Behavioral Surveillance System (CDC, 2019; Hoots et al., 2017). Regardless of this possibility, our findings remain useful because they highlight why some MSM of color with HIV are not successful with care and treatment, and our findings suggest ways to improve the delivery of HIV medical services for MSM of color.

We relied on self-reports which may not be fully accurate. However, prior studies have shown that adherence self-reports can accurately predict detectable viremia among PWH (Mekuria, Prins, Yalew, Sprangers, & Nieuwkerk, 2016). Our interviews occurred before there was a change in recommended ART treatment policy for PWH, meaning that persons diagnosed after our study may have different adherence experiences (CDC, 2014a). A survey of ART-prescribing physicians in late 2013 showed only 64% correctly understood that federal guidelines recommended ART for all PWH, and 77% said they would likely delay ART initiation for some patients for a variety of reasons (Krakower et al., 2015). Physicians following current recommendations may be more likely to prescribe ART.

We reduced data collection and analysis errors through training, as well as ensuring strong inter-coder reliability. When non-systematic errors affect either or both variables in cross-tabulation tables, the net effect can be to bias the magnitude of associations toward the null (Rothman & Greenland, 2005; Schlesselman, 1982). To the extent that non-systematic errors remained for either our ART-taking or barrier and facilitator variables, our chi-square statistics may be artificially low estimates. This means the associations might actually be stronger than those shown in Table 2.

CONCLUSION

Our findings reinforce best practices for treating PWH (CDC, 2014a, 2014b, 2014c). Progress in reducing HIV must include MSM as a high priority for ending the HIV epidemic in the United States (CDC, 2016b; Fauci et al., 2019; Hall et al., 2017). It is common for many people—not just MSM of color—to be overwhelmed by their HIV diagnosis, initially. Likewise when seeking healthcare services, virtually everyone wants healthcare providers who treat them with respect, and who take the time to answer questions, as well as who clearly explain clinical test results and treatments in understandable ways. It is safe to assume that everyone wants clinics to be conveniently located. Men in our sample explicitly understood that overcoming diagnosis denial, having treatment plans tailored to their needs, and having access to convenient care facilities staffed with providers who communicate well and treated them with respect are key ingredients for helping them stay in care and consistently take ART. A disturbing part of our findings is the apparent frequency that MSM of color in our sample did not report receiving HIV care services that meet these common sense best practices. Why, for example, did less than 10% of the men who took ART and none of the other men in our sample describe having providers who treated them with respect? Or why did less than 20% of the men who took ART describe having providers who clearly explained what to expect regarding their treatment? Through constructive partnership between patients, public health practitioners and clinical care providers, we can find significantly better ways to consistently deliver high quality HIV care throughout the United States.

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TABLE 1.

Respondent Sociodemographic Characteristics for African American and Latino Men Who Have Sex With Men Who Are Living With HIV, 2014 (Sample N = 84)

Characteristic	% (n)
City of Residence	
Atlanta	28.6 (24)
Baltimore/Washington, DC	20.2 (17)
Chicago	27.4 (23)
Los Angeles	23.8 (20)
Age in years, ^a <i>M</i> (<i>SD</i>)	42.4 (10.3)
Race/Ethnicity	
Black/African American	59.5 (50)
Hispanic/Latino	36.9 (31)
Mixed	3.6 (3)
Sexuality ^b	
Gay/homosexual	69.0 (58)
Bisexual	20.2 (17)
“Something else” or other response	10.7 (9)
Level of education	
< High school diploma	19.0 (16)
High school diploma/GED	22.6 (19)
Some college	38.1 (32)
> College graduate	20.2 (17)
Health coverage	
No coverage	23.8 (20)
Partial coverage, e.g., ADAP/Ryan White	17.9 (15)
Full coverage, e.g., Medicaid, Medicare, private insurance	58.3 (49)
HIV Diagnosis Pre- or Post-ART Availability	
1980–1996	32.1 (27)
1997–2014	66.7 (56)
Unknown	1.2 (1)
HIV Medical Care-Adherent at Time of the Interview	
Yes ^c	51.2 (43)
No	48.8 (41)
Consistently Taking ART at Time of the Interview	
Yes	27.4 (23)
Not taking, or not consistently taking, ART	72.6 (61)

Note. Percentage totals may not equal 100% due to rounding. ^an = 80 for Age; ^bScreened eligibility criteria included having had sex with another man in the prior 6 months; ^cIncludes respondents who said their doctors did and did not tell them to take ART.

TABLE 2.
Interview Response Themes Associated With Consistently Taking ART at the Time of the Interview, 2014

Themes Coded in Interview Transcripts ^a	Full and Reduced Sample Sizes ^c	Percent Consistently Taking ART	Percent Not Taking, or Not Consistently Taking ART	Odds Ratio	Chi-Square Value (df = 1)	p value
Precursors to Taking ART						
In denial after learning HIV diagnosis	84	47.8	16.4	4.68	8.80	.0030
	61	50.0	12.8	6.80	10.05	.0020
Doctor told him he did not need to be on ART yet	84	4.3	36.1	0.08	8.45	.0037
	61	NA	NA	NA	NA	NA
Respondent felt very sick	84	30.4	3.3	12.91	12.88	.0003
	61	31.8	5.1	8.63	7.97	.0050
Patient-level Factors						
Respondent encouraged to take ART by others 84		17.4	3.3	6.21	5.02	.0251
	61	18.2	0.0	Zero cell; cannot calculate	7.59	.0060
Describes having HIV treatment plan 84		60.9	19.7	6.35	13.26	.0003
	61	59.1	25.6	4.19	6.70	.0100
Respondent motivated to take ART by seeing improvements in their clinical test results 84		21.7	3.3	8.19	7.45	.0063
	61	22.7	5.1	5.44	4.29	.0380
Respondent keeps ART medications visible as a reminder to take them 84		43.5	16.4	3.92	6.75	.0094
	61	45.5	20.5	3.23	4.21	.0400
Respondent found ways to mitigate ART side effects 84		43.5	14.8	4.44	7.87	.0050
	61	45.5	23.1	2.78	3.28	.0700
Provider-Patient Interaction Factors						
Positive experience with providers who treat respondent with respect 84		8.7	0.0	Zero cell; cannot calculate	5.43	.0200
	61	9.1	0.0	Zero cell; cannot calculate	3.67	.0560
Positive experience with providers who are “straightforward,” “don’t play games” with respondent 84		13.0	1.6	9.00	4.79	.0286
	61	13.6	2.6	6.00	2.81	.0930
Positive experience with providers that give clear description on what to expect regarding their HIV treatment 84		17.4	1.6	12.63	7.40	.0065
	61	18.2	2.6	8.44	4.56	.0330

Themes Coded in Interview Transcripts ^a	Full and Reduced Sample Sizes ^c	Percent Consistently Taking ART	Percent Not Taking, or Not Consistently Taking ART	Odds Ratio	Chi-Square Value (df = 1)	p value
Respondent is able to take in and understand information from doctor	84	26.1	6.6	5.03	6.07	.0137
Respondent asks questions, makes sure he understands what doctor says	61	27.3	7.7	4.50	4.29	.0380
		43.5	13.1	5.10	9.15	.0025
	61	45.5	17.9	3.81	5.29	.0210
Care Facility Factors:						
Mentions convenient location of their HIV care facility	84	30.4	8.2	4.90	6.75	.0094
	61	31.8	10.3	4.08	4.42	.0350
Has “one-stop shop” care facility that provides all key services on site	84	56.5	27.9	3.36	5.97	.0145
	61	59.1	30.8	3.25	4.67	.0310

Note. NA: not applicable. ^aThemes not associated with taking ART included: When respondent found out he was HIV-positive; Attitudes towards HIV testing; Respondent’s immediate reaction to learning his HIV status; Disclosure of HIV status to others; Current condom use behaviors; HIV treatment knowledge (including knowledge of his CD4 or viral load values); Partner’s knowledge of HIV treatment; or Partner’s own health issues); ^bThe “one-stop shop” association is influenced by respondent age. Specifically, it is associated with consistently taking ART among respondents younger than 45 years of age, but not among those 45 years old or older. See text for details; ^cThe full sample size is N = 84. The reduced sample excludes 23 men who said their “doctor told him he did not need to be on ART yet.”