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Factors Associated with Retention and Viral Suppression Among a Cohort of HIV+ Women of Color

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Abstract

Access to sustained HIV medical care is critical to achieving viral suppression. However, a variety of factors may impede or facilitate retention in care or becoming virally suppressed. Though retention and suppression are often treated separately, this study examined both in a cohort of 921 HIV+ women of color who participated in eight demonstration programs across the US. For women who met the inclusion criteria, 83% ($n=587$) were retained and 73% ($n=357$) were virally suppressed. Average age of women retained was 40.9, and 41.9 for those virally suppressed. The majority were African American/Black or Hispanic/Latina, single, and had no children less than 18 years of age, had health insurance, a high school degree or higher, were stably housed, and unemployed. Some factors associated with retention in care were indecision about seeking HIV medical care (AOR = 0.42) and having children under the age of 18 (AOR = 0.59). Some factors associated with being virally suppressed were living with others (AOR = 0.58), current substance abuse (AOR = 0.38), and fair/poor health (AOR = 0.40). The findings suggest different processes and social mechanisms may influence retention and viral suppression. Interventions seeking to improve retention in care may require tailored program components and strategies that focus on improving viral suppression.

Introduction

People living with human immunodeficiency virus (HIV) infection require ongoing HIV care and access to medications to control their illness and survival.[1] Factors associated with retaining women in care or achieving viral suppression vary and occur at individual, social, institutional, and financial levels.[2–6] Homelessness has been found to be associated with retention,[7] as has lack of transportation, perceived stigma,[8] lack of HIV awareness, fear of the healthcare system, and legal status for immigrants.[3] Financial barriers, the extent of coverage and out of pocket costs have also kept HIV+ individuals from engaging in care,[2,9] as have concerns about whether clinics are known in the community as an HIV/AIDS treatment program, and how the organization is structured to provide care.[8,9] Medication adherence has also been affected by the side effects, dosage schedule, and the effects taking medications may have on interpersonal relationships.[4] Being retained in care has been associated with increased access to antiretroviral therapy, treatment adherence, viral suppression, improved immune function, reduced hospitalization and emergency department use, and reduced risky sexual practices.[10,11]

Incidence of HIV and access to medical care, retention, and viral suppression are not, however, evenly distributed. The incidence of HIV among African American/black women is more than 20 times that of white women, and more than four times that of Hispanics/Latinas.[12,13] African Americans/blacks and Hispanics/Latinos are less likely to be retained in care than whites.[14] HIV/AIDS remains a leading cause of death among US women, though it remains what has been called a ''hidden epidemic.''[15]

In response to the high incidence of HIV/AIDS among women of color (WOC), and the issues surrounding engaging and retaining these women in care, the Health Resources and Services Administration (HRSA) HIV/AIDS Bureau funded the Special Projects of National Significance (SPNS) *Enhancing Access to and Retention in Quality HIV Care for Women of Color* initiative. Conducted from 2009 to 2014, nine US-based demonstration projects developed, implemented,

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and evaluated interventions to improve the linkage and retention of HIV+ WOC in quality HIV care.

Though there are numerous studies examining factors associated with retention in care or viral suppression,[11,16–20] fewer examine both in a single study.[11,21] A few studies focus on women exclusively, but are more focused on HIV acquisition,[22] and none focus on WOC who are disproportionally affected by HIV/AIDS.[15,22] This article extends the literature by examining factors associated with both retention and suppression in a prospective cohort of WOC followed for 1 year in eight of the nine HRSA demonstration programs across the country.

Study design

Funded by HRSA, an Evaluation and Technical Assistance Center (ETAC) housed at the Albert Einstein College of Medicine standardized, organized, maintained, and analyzed the data reported here. Nine programs provided data to the ETAC, but one site was dropped from this analysis because its sample size was too small. The eight remaining programs were located in Brooklyn, NY; Chicago, IL; Los Angeles, CA; Miami, Fl; San Antonio, TX; Longview, TX; Anniston, AL; and Chapel Hill, NC. Sites varied geographically, how their clinical and nonclinical services were organized, and whether the program was part of a health care facility or a community based organization.[23,24]

To be included in this article's analysis, a participant had to meet criteria established in HRSA's HAB clinical core measures.[25,26] For retention, a participant had to have one or more visits with a primary care provider during the participant year; and for suppression, a participant had to have two or more visits in the measurement year that were 60 or more days apart, and have been prescribed HAART for 6 or more months. Participants for whom medical chart data were not available or who had been enrolled fewer than 12 months were excluded from analyses. The inclusion criteria for retention were met by 587 women, and 357 for suppression. The study obtained IRB approval from the Albert Einstein College of Medicine and at each demonstration program.

Methods

Definitions of variables

Primary outcome variables. Predictive models were created to determine which factors related to retention in HIV medical care and viral suppression during the 12 months following completion of the baseline interview. Both retention and viral suppression were defined as dichotomous variables. Retention in HIV medical care was defined[25] as two or more visits during the 12-month period that were 90 or more days apart. Viral suppression was defined[26] as the last viral load assessed during the 12-month period, <200 copies/mL.

Definitions of covariates

Variables considered for inclusion in the models for retention and suppression were based on the literature[10,14,19,27] and demonstration sites' experience with HIV+ WOC. To build the statistical models, variables were selected that had a significant bivariate relation with the primary outcome variables at $p<0.10$. Care seeking was defined by self-reported HIV medical care in the 6 months preceding enrollment. Women were categorized as In Care (received HIV medical care in the prior 6 months); Seeking Care (tried unsuccessfully to get HIV medical care in prior 6 months); and Undecided About Care (have not tried to get care, and may or may not seek care in the future).

Demographic characteristics included self-identified race/ethnicity [Hispanic/Latina, African American/black, or other (Multi-racial or Asian Pacific)]; education (high school degree or higher vs. less than high school degree); immigration status (born in US, immigrated to the US 5 or more years ago, immigrated to the US less than 5 years ago); age in years; employment status [working, on disability and not working, other (not working, homemaker, in school, or other)]; insurance status (any insurance, no insurance/self-pay); housing [stable housing (rent/own apartment or house), unstable housing (staying with someone else, SRO or homeless shelter) or institutional housing (in patient substance treatment program, psychiatric facility, halfway house)].

Relationship support and burden included a measure of intimate partner violence (IPV) using the Women's Experience with Battering (WEB)[28] with summative scores 20 or higher indicating a positive screening of IPV. Current relationship status: single (single, separated, divorced, widowed) and not-single (married, common-law marriage, living with a partner, in a relationship); cohabitation/relational burden/support was assessed with two variables: presence of children under the age of 18, and presence of others living in the household in the 3 months prior to the baseline interview [1 or more children no adults, 1 or more adults (any children), or lives alone].

Barriers to care questions were adapted from Patel[29] and Rapkin[30] quality of life measure. Barriers to care were rated on a 3-point scale and dichotomized to reflect if the problem was a barrier (great deal or somewhat) or not a barrier to obtaining care. Two barriers to care are used in this analysis: whether a woman was afraid that nothing would help; and whether having HIV/AIDS would create problems for their family.

Risk behaviors. As with barriers to care, these questions were adapted from Patel[29] and Rapkin.[30] High-risk sexual and substance use behaviors were dichotomized as current (within the past 3 months) versus never/past. Sexual risk behaviors included assessment of whether a women had sex for money, had sex with someone who injected drugs, had unprotected sex, or had sex with someone who tested positive for HIV. Substance abuse inquired if a women injected drugs, used amphetamines, heroin, cocaine, or crack, drank alcohol, or smoked tobacco.

Health related quality of life were drawn from the CDC Healthy Days Core Module[31] and included dichotomous scoring as defined by the developers. These included general health rating (Fair/Poor vs. Good/Very Good/Excellent), 14 days or more of poor physical functioning in the last month (yes/no), and 14 days or more of poor mental health and activity limitation in the past month (yes/no).

Baseline medication adherence was self-reported and assessed using the Case Adherence Index (CAI),[32] which

measures participants' difficulty in taking medications, and was dichotomized into poor adherence (≤ 10) or good adherence (>10). An additional category was added to reflect participants who were not on medication at the time of enrollment, therefore, a 3-category variable was used for the model predicting viral suppression.

Statistical analysis

Prior to analysis, all data were examined for data quality using a multiple step review. Descriptive summaries were generated for all study variables, using means, medians, standard deviations, and confidence intervals for quantitative variables, and frequencies and percentages for categorical variables.

Preliminary analyses indicated that approximately 7% of the variability in outcomes was attributable to differences between sites (retention Intraclass correlation = 0.0742, viral suppression Intraclass correlation = 0.0711). To adjust for this correlation among sites attributable to clustering by intervention site, generalized estimating equations (GEE) were used to examine the relationship of selected predictors with the primary study outcomes of retention in HIV medical care and viral suppression.[33,34] The GEE models used the binomial distribution and logit link for binary outcomes, and an exchangeable correlation matrix structure with robust estimation of parameter estimates. All analyses were conducted using SPSS version 21 (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.).

Predictor selection. Prior to conducting the GEE analysis, chi-square tests and *t*-tests were conducted to establish bivariate relationships between potential predictors and the outcomes of retention and suppression. During this model-building phase of analysis, only predictors found to be related to outcomes at $p < 0.10$ levels were included in the models. The one exception was insurance status which was forced into the GEE model based upon the experience and preference of the demonstration programs. A separate GEE model was then run for each outcome (one model for retention and another model for viral suppression) that included each of the predictors identified in the model-building phase.

Results

We first describe the results for the analysis focusing on retention in care followed by the viral suppression. The baseline characteristics of the sample and the significant predictors of the outcomes are presented in Table 1 (retention) and Table 2 (viral suppression).

Baseline characteristics for retention

The average age of the 587 women included in the retention model was 40.9 (SD: 11.3) years. The analysis sample was 66.7% African American/black and 27.1% Hispanic/Latina, and most were single (83.3%). The majority (55.0%) did not have children under 18 years living with them, though 68.3% noted that they were living with others. Seventy percent reported having some form of health insurance, 58.8% had at least a high school education, and most (84.5%) were US born. Most were stably housed (65.5%) and unemployed (55.0%). In considering barriers to seeking care, 42.8% thought having HIV/AIDS could create a problem for their families, and 50.3% thought nothing would help them with their HIV/AIDS. Among the sample, 43.3% reported being in fair/poor health, and 37.5% reported having more than 14 mentally unhealthy days in a month. Over 87% reported no current substance abuse, 33.9% indicated that they were currently engaging in risky sexual practices, and 29.1% screened positive on the WEB for battering. With regard to health care seeking in the 6 months prior to enrollment, 52.5% reported receiving some care, 30.2% reported seeking care, and 17.4% were undecided about seeking care.

Predictors of retention

Of the 587 WOC, 83% were retained in care at 12 months post baseline. Factors significantly associated with being less likely to be retained in care were: being undecided about care at baseline (AOR = 0.42; 95% CI = 0.28, 0.62); having children under the age of 18 years (AOR = 0.59; 95% CI = 0.39, 0.90); thinking that nothing would help their HIV/AIDS (AOR = 0.65; 95% CI = 0.44, 0.95); and living in institutional facilities (AOR = 0.40; 95% CI = 0.18,0.86). Factors associated with being more likely to be retained in care were reporting 14 or more mentally unhealthy days per month and being in the US for 5 or more years. Surprisingly, women who reported more (versus less) than 14 mentally unhealthy days per month were more likely to be retained in care (AOR = 1.68; 95% CI = 1.08, 2.61), as were women who had been in the US for 5 years or more (AOR = 3.16; 95% CI = 1.15, 8.73) (Table 1).

Baseline characteristics for suppression

The average age of the 357 women included in the suppression model was 41.9 (SD 11.2) years. This analysis sample included 63.7% African American/black and 29.41% Hispanic/Latina. Most were single (83.5%), 57.7% did not have children under the age of 18 living with them, and 67.8% were living with others. Over 73% reported having health insurance, and 59.47% had at least a high school education. Most were stably housed (66.1%), and unemployed (55.5%). In considering barriers to seeking care, 43.4% thought having HIV/AIDS could create a problem for their families, and 48.7% thought nothing would help them with their HIV/AIDS. Over 42% reported poor/fair health, and 37.5% reported having 14 or more mentally unhealthy days in a month. Almost 90% reported no current substance abuse, 28.9% indicated currently engaging in risky sexual practices, and 28% screened positive on the WEB for battering. Regarding health care seeking in the 6 months prior to enrollment, 60.8% reported receiving some care, 30.0% reported seeking care, and 9.2% were undecided about seeking care.

Predictors of suppression

Of the 357 women, 73% were virally suppressed at 12 months. Increased age was associated with a slightly reduced likelihood of being suppressed (age in years AOR = 0.91; 95% CI = 0.84, 0.98), an association that negligibly increases as these women got older (AOR = 1.001; 95% CI = 1.0003, 1.002). Living with someone in the past 3 months was associated with reduced odds of being suppressed (AOR = 0.58;

Table 1. Association Between Baseline Participant Characteristics and 12-Month Retention in HIV Medical Care

Covariates	*Retention* N = *587* *Sample size (%)*[a]	*Retention* N = *587* *Adjusted odds ratio (95% CI)*[b]
Age (mean, SD)	40.99 (11.3)	
Race/ethnicity		
Hispanic/Latina	159 (27.1%)	Reference
African American/black	388 (66.1%)	0.713 (0.31, 1.65)
Other (including multiracial)	40 (6.8%)	0.661 (0.28, 1.55)
Education		
Less than HS	242 (41.2%)	Reference
HS grad or higher	345 (58.8%)	0.953 (0.58, 1.56)
Marital status		
Single (single, separated, divorced, widowed)	489 (83.3%)	Reference
Not single (married, common law, living with a partner, in a relationship)	98 (16.7%)	0.742 (0.47, 1.18)
Insurance status		
Any insurance	411 (70.0%)	Reference
No insurance/self-pay	176 (30.0%)	0.966 (0.59, 1.58)
Immigrant status		
Born in US	496 (84.5%)	Reference
Immigrant ≥ 5 years	81 (13.8%)	3.166 (1.15, 8.73)
Immigrant < 5 years	10 (1.7%)	2.364 (0.54, 10.25)
Housing status		
Stable	385 (65.6%)	Reference
Unstably housed	165 (28.1%)	0.731 (0.37, 1.44)
Institutionalized	37 (6.3%)	0.398 (0.18, 0.86)
Employment status		
Working PT/FT	112 (19.1%)	Reference
Disabled	152 (25.9%)	1.197 (0.82, 1.76)
Not working/other	323 (55.0%)	1.106 (0.54, 2.26)
Baseline care status		
In care	308 (52.5%)	Reference
Seeking care	177 (30.2%)	0.789 (0.47, 1.33)
May/may not seek care	102 (17.4%)	0.416 (0.28, 0.62)
Do you have any children under the age of 18?		
No	323 (55.0%)	Reference
Yes	264 (45.0%)	0.589 (0.39, 0.90)
Has anyone been living with you for the past 3 months?		
No	186 (31.7%)	Reference
Yes	401 (68.3%)	1.013 (0.54, 1.92)
Were afraid that nothing would help		
Not at all	292 (49.7%)	Reference
Somewhat/great deal	295 (50.3%)	0.648 (0.44, 0.95)
Felt it could create problems with your family members		
Not at all	336 (57.2%)	Reference
Somewhat/great deal	251 (42.8%)	1.192 (0.63, 2.27)
Fair/poor health		
Excellent/very good/good	333 (56.7%)	Reference
Fair/poor	254 (43.3%)	0.842 (0.62, 1.14)
Baseline substance abuse		
Never or past	511 (87.1%)	Reference
Current	76 (12.9%)	0.656 (0.26, 1.62)
Baseline sexual risk behaviors		
Never or past	388 (66.1%)	Reference
Current	199 (33.9%)	0.722 (0.48, 1.09)

(*continued*)

Table 1. (Continued)

Covariates	*Retention N = 587 Sample size (%)*[a]	*Retention N = 587 Adjusted odds ratio (95% CI)*[b]
WEB screener		
Negative screening for battering	416 (70.9%)	Reference
Positive screen for battering (20+)	171 (29.1%)	0.920 (0.68, 1.24)
Mentally unhealthy days		
Less than 14 mentally unhealthy days	367 (62.5%)	Reference
14 or more mentally unhealthy days	220 (37.5%)	1.676 (1.08, 2.61)
Physically unhealthy days		
Less than 14 physically unhealthy days	425 (72.4%)	Reference
14 or more physically unhealthy days	162 (27.6%)	1.178 (0.83, 1.67)
Activity limitation days		
Less than 14 physically unhealthy days	453 (77.2%)	Reference
14 or more physically unhealthy days	134 (22.8%)	0.942 (0.73, 1.22)

[a]Only covariates that had a bivariate $p < 0.10$ with the dependent variable are listed and incorporated into the logistic regression model.
[b]Adjusted odds ratios are based on logistic regression model fitted using GEE, taking into account potential within demonstration site clustering.

95% CI = 0.34, 0.99) along with current substance use (AOR = 0.38; 95% CI = 0.18, 0.84), ratings of fair or poor health (AOR = 0.40; 95% CI = 0.18, 0.90), and having more than 14 days of limited activity (AOR = 0.67; 95% CI = 0.47, 0.96) Factors associated with being more likely to be virally suppressed as 12 months were being African American/black (AOR = 2.1; CI = 1.4, 3.12); reporting good medication adherence at baseline (AOR = 2.08; 95% CI = 1.48, 3.12); not seeking care at baseline (AOR = 1.94; 95% CI = 1.15, 3.26); and concern about the impact of receiving treatment on their family (AOR = 1.57; 95% CI = 1.04, 2.37).

Discussion

We sought to examine the factors associated with being retained in care or virally suppressed among a prospective cohort of HIV+ WOC engaged in eight programs scattered across the country. In this prospective cohort study, 83% of the participants were retained in care and 73% were virally suppressed.

The likelihood of not being retained in care was associated with indecision about seeking HIV/AIDS care, the presence of children under 18 years, residing in an institutional setting, such as living in a halfway house, a psychiatric facility, or in a substance abuse program, and women thinking that nothing would help them. Reporting 14 or more mentally unhealthy days was, however, somewhat paradoxically associated with an increased likelihood of being retained in care.

For those on HIV medications, the factors associated with increasing the likelihood of being virally suppressed were reporting good adherence, being Hispanic/Latina, not seeking care, and the impact HIV/AIDS could have on their families. Reductions in the likelihood of being virally suppressed increased age, current substance abuse, self-reports of poor health, and reporting 14 or more days of limited activity.

Though retention and suppression are often treated separately in the literature,[11,16–20,35,36] this study examined both measures by focusing on an impoverished, vulnerable prospective cohort of WOC. For these women, our findings suggest that retention and viral suppression were influenced by different factors, and that interventions seeking to improve retention may require program components and strategies that differ from interventions aiming to improve viral suppression. For example, current substance use was not associated with retention but was negatively associated with viral suppression after controlling for self-reported medication adherence at baseline. Also, poor health status and significant activity limitations were also negatively associated with viral suppression. Each of these factors, alone or in combination, may indirectly influence women's ability to focus on medication adherence.[37]

At the same time, there are program components common to both retention and suppression interventions. For example, caregiver burden (e.g., having young children or living with others) reduced women's likelihood of retention or viral suppression. The results also show some associations whose interpretation is ambiguous. Are women who report having 14 or more mentally unhealthy days more transparent in their needs, both to themselves and to program staff, resulting in more efforts to engage with them? And why are women who are not seeking care more likely to be virally suppressed? Are they more likely to have received care from others prior to their engagement with their current provider? Is it possible that these women received more intense care from program staff? Future work will explore these questions and should also address whether specific program components moderate or mediate retention or viral suppression.

Our findings may be limited by several factors. First, there are different ways of defining retention and suppression,[38–40] and the HRSA HAB measures[25,26] should be compared with these other metrics of retention and suppression to ascertain how robust findings are. Second, our analysis does not take into account the time-varying nature of some behaviors (e.g. high-risk behaviors), and how these may be related to retention and suppression. Third, this study only captures care provided at specific sites and cannot account for care received in other settings. It is possible, for example, that those not seeking care and virally suppressed were receiving care elsewhere. Fourth, our analysis does not address other factors that may contribute to retention and viral suppression, such as

Table 2. Association Between Baseline Participant Characteristics and 12-Month Viral Suppression

Covariates	*Viral suppression* N = *357* *Sample size (%)*[a]	*Viral suppression* N = *357* *Adjusted odds ratio (95% CI)*[b]
Age (mean, SD)	41.9 (11.2)	0.910 (0.84, 0.99)
Age^2		1.001 (1.0003, 1.002)
Race/ethnicity		
Hispanic/Latina	105 (29.4%)	2.720 (0.98, 7.58)
African American/black	226 (63.3%)	2.056 (1.35, 3.12)
Other (including multiracial)	26 (7.3%)	Reference
Education		
Less than HS	145 (40.6%)	Reference
HS grad or higher	212 (59.4%)	1.291 (0.67, 2.49)
Marital status		
Single (single, separated, divorced, widowed)	298 (83.5%)	Reference
Not single (married, common law, living with a partner, in a relationship	59 (16.5%)	1.376 (0.64, 2.96)
Insurance status		
Any insurance	262 (73.4%)	Reference
No insurance/self-pay	95 (26.6%)	1.128 (0.61, 2.08)
Housing status		
Stable	236 (66.1%)	Reference
Unstably housed	102 (28.6%)	0.964 (0.61, 1.52)
Institutionalized	19 (5.3%)	0.409 (0.12, 1.38)
Employment status		
Working PT/FT	70 (19.6%)	Reference
Disabled	89 (24.9%)	0.695 (0.33, 1.45)
Not working/other	198 (55.5%)	0.836 (0.41, 1.69)
Baseline care status		
In care	217 (60.8%)	1.431 (0.76, 2.70)
Seeking care	107 (30.0%)	Reference
May/may not seek care	33 (9.2%)	1.938 (1.15, 3.26)
Do you have any children under the age of 18?		
No	206 (57.7%)	Reference
Yes	151 (42.3%)	0.904 (0.50, 1.65)
Has anyone been living with you for the past 3 months?		
No	115 (32.2%)	Reference
Yes	242 (67.8%)	0.581 (0.34, 0.99)
Were afraid that nothing would help		
Not at all	183 (51.3%)	Reference
Somewhat/great deal	174 (48.7%)	0.643 (0.30, 1.40)
Felt it could create problems with your family members		
Not at all	202 (56.6%)	Reference
Somewhat/great deal	155 (43.4%)	1.572 (1.04, 2.38)
Fair/poor health		
Excellent/very good/good	205 (57.4%)	Reference
Fair/poor	152 (42.6%)	0.402 (0.180, 0.90)
Case Adherence Index		
Not currently taking HIV medications	147 (41.2%)	0.934 0.38, 2.28)
Poor adherence (≤ 10)	79 (22.1%)	Reference
Good adherence (> 10)	131 (36.7%)	2.077 (1.38, 3.12)
Baseline substance abuse		
Never or past	321 (89.9%)	Reference
Current	36 (10.1%)	0.385 (0.18, 0.84)
Baseline sexual risk behaviors		
Never or past	254 (71.1%)	Reference
Current	103 (28.9%)	1.115 (0.66, 1.89)

(*continued*)

TABLE 2. (CONTINUED)

Covariates	*Viral suppression* N = *357* *Sample size (%)*[a]	*Viral suppression* N = *357* *Adjusted odds ratio (95% CI)*[b]
WEB screener		
Negative screening for battering	257 (72.0%)	Reference
Positive screen for battering (20+)	100 (28.0%)	1.051 (0.65, 1.70)
Mentally unhealthy days		
Less than 14 mentally unhealthy days	223 (62.5%)	Reference
14 or more mentally unhealthy days	134 (37.5%)	1.164 (0.62, 2.17)
Physically unhealthy days		
Less than 14 physically unhealthy days	261 (73.1%)	Reference
14 or more physically unhealthy days	96 (26.9%)	1.757 (0.67, 4.58)
Activity limitation days		
Less than 14 physically unhealthy days	274 (76.8%)	Reference
14 or more physically unhealthy days	83 (23.2%)	0.671 (0.47, 0.96)

[a]Only covariates that had a bivariate $p < 0.10$ with the dependent variable are listed and incorporated into the logistic regression model.
[b]Adjusted odds ratios are based on logistic regression model fitted using GEE, taking into account potential within demonstration site clustering.

time varying covariates like changes in risk behavior or quality of life. Fifth, our sample is self-selected and measures focus predominately on individual-level factors. Not taken into account were other socio-ecological variables that may influence how care is provided to the participant, such as the organization of care and larger macro policies as well as social norms.[19]

While there were important differences among the programs[23] and how well each was implemented,[24] more than 8 out of 10 women were retained in care, and more than 3 out of 4 women were virally suppressed. These findings underscore the point that there is slippage between retention and suppression. While this is well recognized in the continuum of care literature,[19] and underscored in the National AIDS Strategy[41] as well as the recent assessment of effective interventions,[42] our study adds new knowledge to the literature by focusing on a vulnerable, low-income population of WoC who are spread across the US, and delineating the different factors that contribute to retention and viral suppression. The findings from this cohort of HIV+ women have implications for interventions which target HIV+ WOC. Identifying women who are caring for children, uncertain about wanting HIV care, believing that nothing could help them with their HIV/AIDS may be important indicators of women who will need more intense monitoring, in particular, of visit patterns for medical/nonmedical care. Women who report current substance abuse, and perhaps other current risk behaviors, have others living with them, self-report themselves as being in poor/fair health or as having activity limitations may all have cognitive and/or physical limitations that affect medication adherence, and consequently viral suppression. Routine ascertainment of risk behaviors, self-reported health status, along with routine (e.g., every quarter or semi-annually) review of lab results, may both identify additional clinical needs, educational needs, and individuals at risk of not becoming virally suppressed.

More generally, our findings suggest that programs targeted to intervening with HIV+ WOC may need to be more carefully identify and articulate what the different processes and social mechanisms are for HIV+ WOC, as they transition from accessing care to being retained in care to receiving ART, and to achieving viral suppression. This careful delineation of process and mechanism may lead to more tailored interventions whose outcome diminishes the separation among the various phases in the HIV/AIDS care continuum.

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Author Disclosure Statement

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