Retention in Care and Health Outcomes of Transgender Persons Living With HIV

To the Editor—Little is known about the health outcomes of transgender persons living with human immunodeficiency virus (HIV), or PLWH [1]. Discrimination and social isolation may decrease engagement in care, while concerns about adverse interactions between antiretroviral therapy (ART) and hormone therapy

Table 1. Demographics and Outcomes of Study Sample by Gender Identity

Demographics, per Patient	Total (N = 36 845)	Nontransgender Men (n = 27 598)	Nontransgender Women (n = 8962)	Transgender Persons (n = 285)
Age group at enrollment[a,b,c]				
18–29 y	6947 (18.9)	5100 (18.5)	1771 (19.8)	76 (26.6)
30–39 y	11 338 (30.8)	8475 (30.7)	2757 (30.8)	106 (37.2)
40–49 y	12 391 (33.6)	9397 (34.1)	2916 (32.5)	78 (27.4)
≥50 y	6169 (16.7)	4626 (16.7)	1518 (16.9)	25 (8.8)
Race/ethnicity[a,b,c]				
White	10 604 (28.8)	9379 (34.0)	1197 (13.4)	37 (13.0)
Black	16 715 (45.4)	10 935 (39.6)	5646 (63.0)	134 (47.0)
Hispanic	7973 (21.6)	6026 (21.8)	1848 (20.6)	99 (34.7)
Other/unknown	1553 (4.2)	1267 (4.6)	271 (3.0)	15 (5.3)
HIV risk factor[a,b,c,d]				
MSM	15 848 (43.0)	15 637 (56.7)	. . .	211 (74.0)
HET	12 680 (34.4)	5937 (21.5)	6721 (75.0)	22 (7.7)
IDU	5083 (13.8)	3710 (13.4)	1,346 (15.0)	27 (9.5)
Other/unknown	3234 (8.8)	2314 (8.4)	895 (10.0)	25 (8.8)
Initial insurance[a,b,c]				
Private	6173 (16.7)	5197 (18.8)	956 (10.7)	20 (7.0)
Medicaid	11 534 (31.3)	7451 (27.0)	3964 (44.2)	119 (41.8)
Medicare	3005 (8.2)	2295 (8.3)	685 (7.7)	25 (8.8)
Ryan White/uninsured	12 876 (35.0)	10 367 (37.6)	2413 (26.9)	96 (33.6)
Other/unknown	3257 (8.8)	2288 (8.3)	944 (10.5)	25 (8.8)
CD4 count at enrollment, cells/mm^3, median (IQR)[a,c]	322 (113–534)	321 (112–528)	325 (114–553)	335 (130–518)
HIV load at enrollment, $\log_{10}$ copies/mL, median (IQR)[a,b]	3.62 (1.88–4.79)	3.68 (1.88–4.84)	3.51 (1.88–4.62)	3.6 (1.70–4.68)
Outcomes, per Patient-Year	n = 119 826	n = 89 163	n = 29 806	n = 878
Retention in care, No. (%, 95% CI)[e]				
Retained	86 809 (81.6, 81.3–81.8)	64 046 (81.6, 81.3–81.9)	22 141 (81.5, 81.0–81.9)	622 (80.1, 77.2–82.9)
Not retained	19 635 (18.4, 18.2–18.7)	14 441 (18.4, 18.1–18.7)	5039 (18.5, 18.1–19.0)	155 (19.9, 17.1–22.8)
Received ART, No. (%, 95% CI)				
Yes	91 937 (76.7, 76.4–76.9)	69 379 (77.8, 77.5–78.1)	21 891 (73.4, 72.9–73.9)	667 (76.0, 73.1–78.8)
No	27 910 (23.3, 23.0–23.5)	19 784 (22.2, 21.9–22.5)	7915 (26.6, 26.1–27.1)	211 (24.0, 21.2–26.8)
HIV suppression, No. (%, 95% CI)[f]				
<400 copies/mL	53 535 (68.0, 67.7–68.3)	40 956 (69.7, 69.3–70.1)	12 204 (63.1, 62.4–63.8)	375 (68.7, 64.8–72.6)
≥400 copies/mL	25 149 (32.0, 31.6–32.3)	17 850 (30.3, 29.9–30.7)	7128 (36.9, 36.2–37.6)	171 (31.3, 27.4–35.2)

Data are No. (%) unless otherwise specified.

Abbreviations: ART, antiretroviral therapy; CI, confidence interval; HET, heterosexual transmission; HIV, human immunodeficiency virus; IDU, injection drug use; IQR, interquartile range; MSM, men who have sex with men.

[a] Age, race/ethnicity, HIV risk factor, and insurance were compared using the χ^2 test of independence. CD4 count and HIV load were compared using the Kruskal-Wallis test due to their nonnormal distribution.

[b] $P < .01$ when comparing nontransgender men to transgender persons.

[c] $P < .01$ when comparing nontransgender women to transgender persons.

[d] Patients who had IDU in combination with another risk factor were categorized as injection drug users.

[e] Calculated for 106 440 patient years eligible for the retention in care analysis. Patients newly enrolled in care during the last 6 months of the year or who died in the first 6 months of the year were excluded.

[f] Calculated for 72 728 patient-years eligible for the HIV suppression analysis in which ART was prescribed for >6 months.

may reduce ART receipt and medication adherence in this population [2–4]. We examined whether retention in care, use of ART, and HIV suppression differed between transgender and nontransgender PLWH.

We performed a retrospective cohort study of HIV-infected adults (≥18 years) initiating care at 13 HIV clinics in the HIV Research Network (HIVRN) between 2001 and 2011. Clinics are located in the Northeastern (n = 6), Midwestern

(n = 1), Southern (n = 3), and Western (n = 3) regions of the United States. Data from patients' medical records were abstracted, quality assured, and assembled into a uniform database [5]. All clinics had institutional review board approval.

Gender was self-identified and categorized as nontransgender men, nontransgender women, and transgender. Dichotomous outcomes were retention in care (≥2 primary HIV visits ≥90 days apart), use of ART, and HIV suppression (median HIV RNA <400 copies/mL) in each calendar year. Multivariate logistic regression, adjusted for age, race/ethnicity, HIV risk, insurance, CD4 count, calendar year, and site of care, examined associations between gender and each outcome. Because patients contributed data in multiple years, we used generalized estimating equations, clustered on patient, with exchangeable working correlation and robust standard errors to deal with the correlation across years for individual patients. Two-sided testing was used, with a P value of <.05 considered significant.

A total of 36 845 PLWH, of whom 285 self-identified as transgender, received care at HIVRN clinics between 2001 and 2011 (Table 1). Transgender patients were more likely to be young and Hispanic, and to be men who have sex with men as their HIV risk behavior compared to nontransgender PLWH. Transgender persons were retained in care, received ART, and achieved HIV suppression in 80%, 76%, and 68% of patient-years, respectively. Corresponding results were 81%, 77%, and 69% for nontransgender men, and 81%, 73%, and 63% for nontransgender women.

In multivariate analyses, retention in care was similar for nontransgender men compared with transgender PLWH (adjusted odds ratio [AOR], 1.15; 95% confidence interval [CI], .94–1.42), but was higher for nontransgender women (AOR, 1.32; 95% CI, 1.08–1.64). Use of ART was similar for nontransgender men (AOR, 0.98; 95% CI, .78–1.23) and nontransgender women (AOR, 0.81; 95% CI, .64–1.02) compared to transgender PLWH. Likewise, nontransgender men (AOR, 1.11; 95% CI, .89–1.39) and nontransgender women (AOR, 1.13; 95% CI, .90–1.42) had similar rates of HIV suppression as transgender PLWH.

Compared to prior studies, which document low ART coverage and suboptimal adherence to HIV treatment in transgender PLWH, these results reflect improvements in health equity for HIV-infected transgender individuals [3, 6]. Advances in HIV therapy, including new antiretroviral drugs with simplified dosing and greater tolerability, and treatment guidelines may explain these findings [7, 8]. This study is limited by its retrospective nature, small sample of transgender individuals, and focus on patients engaged in care. While our findings may not generalize to all transgender PLWH, they suggest that when engaged in care transgender PLWH have similar outcomes as nontransgender men and women.

Notes

Acknowledgments. A list of the investigators from the HIV Research Network participating sites, sponsoring agencies, and data coordinating center is available at https://cds.johnshopkins.edu/hivrn/index.cfm?do=sens.content&page=contacts.html.

Financial support. This work was supported by the Agency for Healthcare Research and Quality (HHSA290201100007C) and the National Institutes of Health (K23-MH097647-01A1 to B. R. Y. and R01-DA11602, K24-DA00432, and R01-AA16893 to R. D. M.).

Disclaimer. The views expressed in this paper are those of the authors. No official endorsement by the National Institutes of Health or the Agency for Healthcare Research and Quality is intended or should be inferred.

Potential conflicts of interest. All authors: No reported conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

Baligh R. Yehia,[1,2] John A. Fleishman,[3] Richard D. Moore,[4] and Kelly A. Gebo[4]

[1]Department of Medicine, University of Pennsylvania Perelman School of Medicine, Philadelphia, and [2]Philadelphia Veterans Affairs Center for Health Equity Research and Promotion, Pennsylvania; [3]Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality, Rockville, Maryland; and [4]Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland

References

1. Insitute of Medicine. The health of lesbian, gay, bisexual, and transgender people: building a foundation for better understanding. Washington, DC: National Academies Press, **2011**.
2. Sevelius JM, Keatley J, Gutierrez-Mock L. HIV/AIDS programming in the United States: considerations affecting transgender women and girls. Womens Health Issues **2011**; 21: S278–82.
3. Sevelius JM, Carrico A, Johnson MO. Antiretroviral therapy adherence among transgender women living with HIV. J Assoc Nurses AIDS Care **2010**; 21:256–64.
4. Herbst JH, Jacobs ED, Finlayson TJ, et al. Estimating HIV prevalence and risk behaviors of transgender persons in the United States: a systematic review. AIDS Behav **2008**; 12: 1–17.
5. Yehia BR, Gebo KA, Hicks PB, et al. Structures of care in the clinics of the HIV Research Network. AIDS Patient Care STDS **2008**; 22: 1007–13.
6. Melendez RM, Exner TA, Ehrhardt AA, et al. Health and health care among male-to-female transgender persons who are HIV positive. Am J Public Health **2006**; 96: 1034–7.
7. Department of Health and Human Services Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Available at: http://www.aidsinfo.nih.gov. Accessed 25 April 2013.
8. Thompson MA, Mugavero MJ, Amico KR, et al. Guidelines for improving entry into and retention in care and antiretroviral adherence for persons with HIV: evidence-based recommendations from an International Association of Physicians in AIDS Care panel. Ann Intern Med **2012**; 156:817–33.

Correspondence: Baligh R. Yehia, MD, MPP, MSHP, University of Pennsylvania Perelman School of Medicine, 1309 Blockley Hall, 423 Guardian Dr, Philadelphia, PA 19104 (byehia@upenn.edu).

Clinical Infectious Diseases 2013;57(5):774–6

DOI: 10.1093/cid/cit363