Reliability of self-reported HIV status among African MSM screened for HPTN 075

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ABSTRACT

In many research studies, individuals who test positive for HIV infection are asked if they had a prior HIV diagnosis. One approach for assessing the accuracy of self-reported data on HIV status is to identify participants who are on antiretroviral treatment (ART) by testing samples for the presence of antiretroviral (ARV) drugs.

We evaluated the accuracy of self-reported HIV status among men who have sex with men (MSM) and transgender women who have sex with men who were screened for participation in the HIV Prevention Trials Network (HPTN) 075 study. HPTN 075 evaluated the feasibility of recruiting and retaining MSM in sub-Saharan Africa for HIV prevention trials.

METHODS

STUDY COHORT

HPTN 075 screened participants at four study sites (Kisumu, Kenya; Blantyre, Malawi; Cape Town, South Africa, and Soweto, South Africa). This sub-study included participants who met the following criteria at screening:

- Age 18 to 44 years
- Assigned male sex at birth
- Reported ever having had sex with a man
- Agreed to HIV testing
- Concordant HIV positive test results at screening
- Not in HIV care or taking ART

Men who reported that they were in care or on ART were not eligible for enrollment in HPTN 075.

LABORATORY TESTING

HIV testing was performed at study sites. Additional HIV testing, viral load testing, and ARV drug testing was performed retrospectively at the HPTN Laboratory Center. ARV drug testing was performed with an assay that detects 20 ARV drugs in 5 drug classes (limit of detection: 2 or 20 ng/mL, depending on the drug).

STATISTICAL ANALYSIS

Participants were classified as previously diagnosed if they reported being HIV-infected or had ARV drugs detected that indicated that they were on ART (Figure 1). Logistic regression was used to compare characteristics of previously-diagnosed participants who did or did not report a prior HIV diagnosis.

RESULTS

Figure 1. Classification of participants.
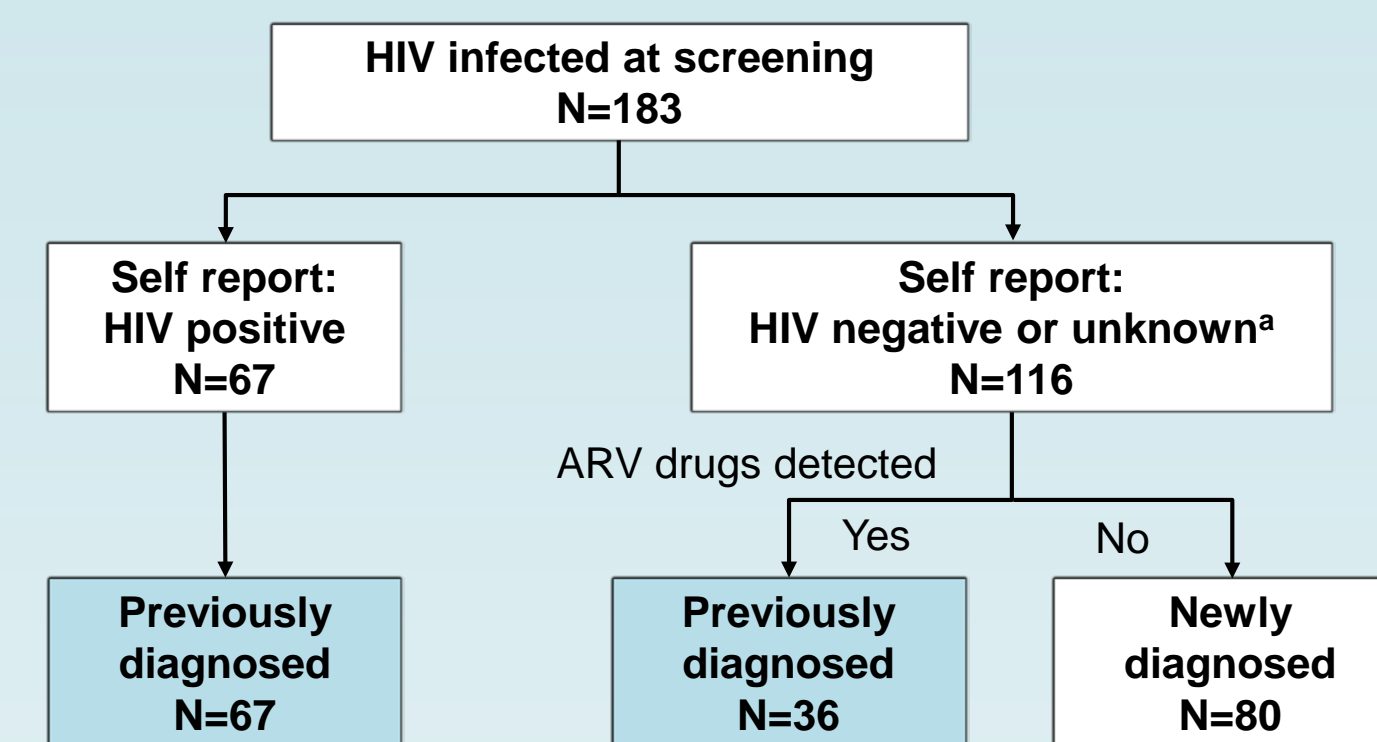
[a] Unknown includes participants who reported they never had an HIV test and participants who reported that they did not know their last HIV test result.

HPTN 075 screened 624 participants. This sub-study analyzed data from the 183 participants who were HIV-infected at screening. Participants were asked if they had ever had an HIV test and the status of their last HIV test. ARV drug testing was performed on samples from the 116 participants who did not report a prior positive HIV test.

HIV STATUS BY SELF-REPORT

Among the 183 participants, 67 reported that their last HIV test was positive, 93 reported that their last HIV test was negative, six did not report the result of their last HIV test, and 17 reported they never had an HIV test. By self-report alone, 67 (36.6%) of the participants were classified as previously diagnosed (Figure 2).

HIV STATUS BY SELF-REPORT AND ARV DRUG TESTING

Among the 116 participants who did not report a prior positive HIV test, 36 (31.0%) had at least one ARV drug detected (30 reported that their last HIV test was negative, one reported not knowing the result of their last HIV test, and five reported no prior HIV test). After accounting for ARV drug use, 103 (56.3%) of the participants were classified as previously diagnosed. The difference in classification of participants as previously diagnosed by self-report alone vs. self-report and ARV drug testing was highest in Kisumu, Kenya (Figure 2).

Figure 2. Classification of participants as previously diagnosed.
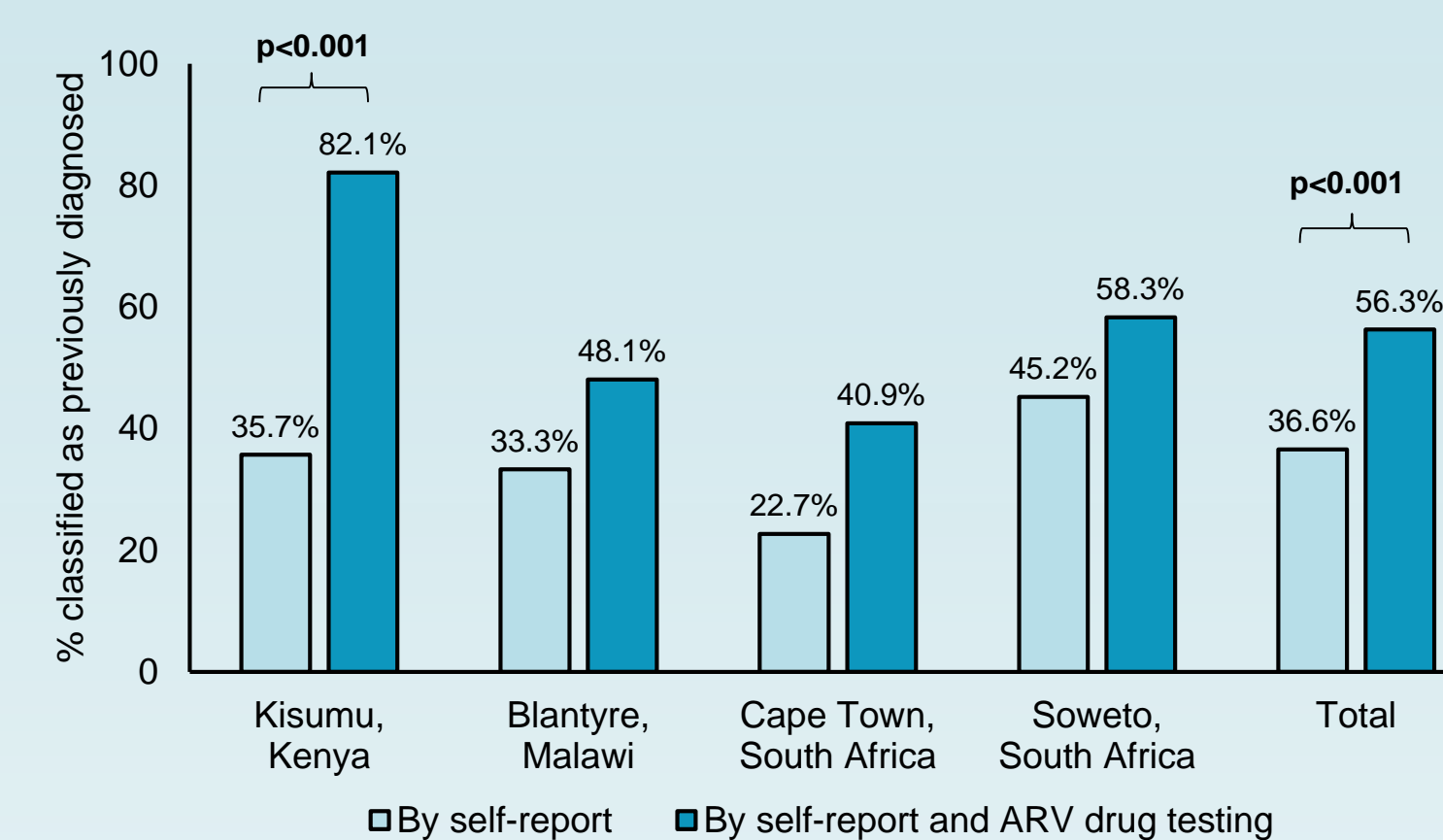
The figure shows that a significantly higher proportion of HIV-infected participants were classified as previously diagnosed using both self-report and ARV drug testing compared to self-report alone.

Table 1. Factors associated with report of a prior positive HIV test among participants classified as previously diagnosed (n=103).

Variables	Total	HIV status disclosed (N, %)	OR (95% CI)	P
Age				
18-25 years	48	34 (70.8%)	ref	
26-44 years	55	33 (60.0%)	0.62 (0.27-1.41)	0.25
Study site				
Kisumu, Kenya	23	10 (43.5%)	ref	
Blantyre, Malawi	13	9 (69.2%)	2.92 (0.69-12.32)	0.14
Cape Town, South Africa	18	10 (55.6%)	1.62 (0.47-5.63)	0.44
Soweto, South Africa	49	38 (77.6%)	**4.49 (1.55-13.00)**	**0.006**
Previous participation in an HIV study				
No	95	61 (64.2%)	ref	
Yes	8	6 (75.0%)	1.67 (0.32-8.74)	0.54
Gender identification				
Male	66	41 (62.1%)	ref	
Transgender	37	26 (70.3%)	1.44 (0.61-3.42)	0.41
Immigrant				
No	96	64 (66.7%)	ref	
Yes	7	3 (42.9%)	0.38 (0.08-1.78)	0.22
Ever had sex with women				
No	53	42 (79.2%)	ref	
Yes	50	25 (50.0%)	**0.26 (0.11-0.62)**	**0.002**
Had sex in past 3 months				
No	3	1 (33.3%)	ref	
Yes	100	66 (66.0%)	3.88 (0.34-44.36)	0.28
Had anal sex with men in past 3 months				
No	7	3 (42.9%)	ref	
Yes	96	64 (66.7%)	2.67 (0.56-12.63)	0.22

Logistic regression was used to analyze the association of factors with self-report of a prior positive HIV test, among participants classified as previously diagnosed. The following groups were more likely to report a positive HIV status:

- Participants from Soweto, South Africa (compared to Kenya, p=0.006)
- Participants who reported having sex with men only (compared to participants who reported having sex with men and women, p=0.002)

CONCLUSIONS

Self-report plus ARV drug testing provided a more accurate estimate of the frequency of previously diagnosed infections than self-report alone.

- ~30% of the HIV-infected MSM and transgender women who did not report a prior positive HIV test were taking ARV drugs that indicated that they were on ART. These participants were classified as previously diagnosed.
- The proportion of previously-diagnosed participants who reported a prior positive HIV test varied by study site.
- Participants who reported having sex with men only were more likely to report a prior positive HIV test.

Available data do not allow for identification of reasons for the discrepancy between observed and reported HIV status.

Because future studies will continue to make use of self-report of HIV status, measures should be explored that might promote the accuracy of reporting.

ACKNOWLEDGEMENTS